Site: GULF STATES
Break: 1.9
Other: V.3

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Ralph O. Howard Jr.

REASSESSMENT REPORT

GULF STATES CREOSOTING COMPANY
FLOWOOD, RANKIN COUNTY, MISSISSIPPI

U.S. EPA ID No. MSN000407423

Revision 0

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 4
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CONTENTS

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) has tasked the T N & Associates, Inc., (TN&A) Superfund Technical Assessment and Response Team (START) to perform a Reassessment under Contract Number (No.) EP-W-05-053 at Gulf States Creosoting Company (Gulf States), EPA Identification (ID) No. MSN000407423, located in Flowood, Rankin County, Mississippi. Reassessments are conducted to evaluate a site's current Hazard Ranking System (HRS) status, document the information contained within the site files, update target information, generate a new site score, and summarize all information in a report submitted to EPA. This Reassessment Report evaluates Gulf States based on site files provided by EPA.

2.0 SITE BACKGROUND

This section describes the site including its environmental, geologic and hydrogeologic setting, historical operations, waste disposal practices, regulatory history, and previous investigations.

2.1 Site Description

The former 141-acre Gulf States Creosoting Company (Gulf States) is located at 1625 Flowood Drive (Mississippi Highway 468), in Flowood, Rankin County, Mississippi (see Appendix A, Figure 1) (Refs. 1, 2). The geographic coordinates at the facility are latitude 32° 18′ 36″ North and longitude 90° 08′ 33″ West (Refs. 2; 3). The facility is currently operating as a horse farm and as ConSteel Co., Inc. (ConSteel) (Refs. 1, p. 2; 4, pp. 2, 3). The horse farm has been operating on the property for at least nine years (Ref. 5, p. 1). The southernmost building on the property is owned by CRC Properties, LLC. (Ref. 4, pp. 2, 5). The northernmost structures including a metal barn and shed are used to house tractors and helicopters for a local news station and are part of the horse farm (Ref. 1, p. 2).

The facility is bound by railroad tracks to the north and east, an adjacent business to the south, and marshland/tributary of the Pearl River to the west. The oxbow lakes, also known as the Creosote Slough, on the western side of the facility are bounded by a large levee, which is fenced and locked (Ref. 5, p. 1). The Creosote Slough can be accessed without going through the fenced area by way of the Pearl River. The Gulf States facility is bound by natural barriers including trees and marshland and is not fenced (Ref. 1, p. 2). The facility is located within a mixed industrial, commercial, and residential area (see Appendix A, Figure 2) (Ref. 2).

ConSteel is a steel fabricator and erector that constructs concrete forms and concrete reinforcement accessories, as well as steel processing and fabrication equipment (Ref. 5, p. 1). File material indicates that ConSteel intends to construct an additional T-shaped office and production facility building on the southwestern portion of the property (Ref. 6, p. 6).

The climate of Rankin County is characterized by long, hot summers and mild winters (Ref. 1, p. 2). Moist tropical air from the Gulf of Mexico has a moderating influence on maximum temperatures in summer (Ref. 7, p. 1). Normal annual total precipitation for the area is approximately 55 inches, and the mean annual lake evaporation is 44 inches, yielding a net annual precipitation of 10 inches (Ref. 8). The 2-year, 24-hour rainfall is 4.5 inches (Ref. 9).

2.2 Geology and Hydrogeology

The facility lies within the Jackson Prairie Belt of the East Gulf Coastal Plain physiographic province (Refs. 7, p. 2; 10, p. 269; 11, p. 23). The property is located along the western border of Rankin County, northeast of Jackson, and east of the Pearl River. The topography of the surrounding area ranges from gently rolling to steep with elevations ranging from 612 feet above mean sea level (amsl) to 270 feet amsl and the property is located at approximately 265 feet amsl (Ref. 2). The property is underlain in descending stratigraphic order by alluvial soils, the Claiborne Group, and the Wilcox Formation (Ref. 13).

The property is directly underlain by alluvial soils of the Cascilla-Arkabutla group, which are classified as nearly level, well-drained to somewhat poorly-drained, silty soils occurring along the flood plains of the Pearl River and its tributaries (Ref. 7, p. 8). The slope of these soils typically ranges from 0 percent (%) to 2% (Ref. 7, p. 8). The nearly linear flood plain surface in the vicinity of the property is irregularly broken by old river runs, natural levees, sloughs, chutes, and scarpes (Ref. 7, p. 8). The average thickness of the alluvium is approximately 40 feet (Ref. 12, p. 32).

The Claiborne Group consists of, in descending stratigraphic order, the Cockfield Formation, the Cook Mountain Formation, the Kosciusko Formation, the Zilpha and Winona Formations, and the Tallahatta Formation (Ref. 13). The Cockfield Formation consists of irregularly bedded laminated lignitic clay, sand, and lignite that is slightly glauconitic (Ref. 13). Based on drillers' logs, the top of the Cockfield is located at approximately 40 feet below land surface (bls) and is approximately 130 feet thick in the vicinity of the property (Ref. 14). The Cook Mountain Formation underlies the Cockfield and consists of marl, limestone, glauconitic sand, and chocholate colored clay (Ref. 13). The Kosciusko Formation, also known as the Sparta Sand, consists of irregularly bedded sand containing clay and small amounts of

quartzite. The Sparta is approximately 300 feet thick in the vicinity of the property (Ref. 11, p. 15). The Zilpha and Winona Formations underlie the Sparta Sand and consist of chocolate colored clay containing glauconitic sand and a highly glauconitic clayey sand, respectively (Ref. 13). The Zilpha ranges in thickness from 200 feet on the Jackson Dome to 420 feet in the southwestern portion of Rankin County (Ref. 11, p. 190). The Winona ranges from 10 to 15 feet thick over the Jackson Dome to approximately 65 feet thick in other portions of the county (Ref. 11, p. 190). The Tallahatta Formation underlies the Zilpha and Winona Formations and consists of predominantly glauconitic claystone and clay with lenses of sand and some sandstone (Ref. 13). The Wilcox Group underlies the Claiborne Group and consists of irregularly bedded fine to coarse sand, more or less lignitic clay, and lignite (Ref. 13). The Wilcox ranges in thickness from approximately 1,100 feet to 1,300 feet over the Jackson Dome and attains a maximum thickness of 2,830 feet in Rankin County (Ref. 11, p. 188).

Three aquifers are available for moderate to large groundwater supplies in Rankin County. The aquifers are, in descending stratigraphic order, the Cockfield Formation, the Sparta Sand, and the Wilcox Group (Ref. 10, p. 274). All of the aquifers are part of the Eocene aquifer system in Mississippi and extend to the west, southwest, and south, and contain freshwater in approximately 50% of the State (Ref. 10, p. 274). All of the aquifers are regional in extent, and all except the Cockfield and lower Wilcox aquifers merge northward into a single aquifer south of Memphis, Tennessee (Ref. 10, p. 274). The formations dip southwest at approximately 15 to 25 feet per mile toward the Mississippi Embayment and the Mississippi River, and the groundwater flow generally follows this regional trend (Ref. 12, p. 4). Within the geologic column, the water-bearing sand beds are interbedded with shale of both marine and continental origin, fossiliferous limestone, and calcareous sandstone (Ref. 12, p. 4). Strata that were deposited by marine origin generally consist of clay and they form aquicludes (confining layers), between the water-bearing sands. These aquicludes are widespread and more uniform in thickness than the aquifers (Ref. 12, p. 4).

The Cockfield Formation is the source of more than half of the municipal water supply in the area, mainly because it is the shallowest of the aquifers (Ref. 12, pp. 1, 32). The Cockfield is an unconfined aquifer located at approximately 40 feet bls in the vicinity of the property, and ranges in thickness from 80 to 140 feet (Refs. 12, p. 32; 14). Municipal water supplies for several small towns are obtained from the Cockfield, some wells yield as much as 500 gallons per minute (gpm) (Ref. 12, p. 1). Based on lithology, the hydraulic conductivity of the Cockfield is approximately 10^{-2} centimeters per second (cm/s) (Ref. 15, p. 29). The Cook Mountain underlies the Cockfield and consists of marl, limestone, glauconitic sand, and chocolate colored clay (Ref. 13). The Cook Mountain was deposited in a marine environment, exhibits a high clay content, and serves as a confining layer between the overlying Cockfield aquifer and the

underlying Sparta Sand (Ref. 12, p. 4). Based on lithology, the Cook Mountain exhibits a hydraulic conductivity of approximately 10^{-9} cm/s (Ref. 15, p. 29).

The Sparta Sand underlies the Cook Mountain Formation in the vicinity of the property and is approximately 300 feet thick. The Sparta Sand is the most intensively developed aquifer in the vicinity of the property and based on lithology, exhibits a hydraulic conductivity of approximately 10^{-2} cm/s (Refs. 12, pp. 15, 32; 15, p. 29).

The Zilpha and Winona Formations underlie the Sparta Sand and consist of chocolate colored clay containing glauconitic sand and a highly glauconitic clayey sand, respectively (Ref. 13). Due to the high clay content and marine origin of these formations, they serve as the lower confining unit for the Sparta Sand and the upper confining unit for the underlying Wilcox Group (Ref. 12, p. 15). Based on lithology, the Zilpha and Winona Formations exhibit a hydraulic conductivity of approximately 10^{-9} cm/s (Ref. 15, p. 29). These formations range in thickness from 420 to 2,600 feet (Ref. 12, p. 15).

The Wilcox Group contains a large reserve of soft water that has been tapped by only a few small-supply wells. The water in this aquifer is more highly mineralized and is warmer than that found in the overlying aquifers (Ref. 12, p. 1). The water is of good quality in Madison and northern Rankin Counties; however, the quality deteriorates down the dip in Hinds County (Ref. 12, p. 1). In counties to the northeast, the results of several pumping tests indicate that the sands in the Wilcox are probably as permeable as the Sparta Sand (Ref. 12, p. 15).

2.3 Ownership and Operations

Gulf States owned the property as early as 1929 and operated a wood treating facility at the location until the mid 1950s (Refs. 1, p. 2; 5, p. 1). During Gulf States operations, railroad cross ties were treated at the facility with coal-tar creosote and transported on and off site using railroad box cars (Ref. 5, p. 1). Coal-tar creosote is a wood preservative used to treat railroad ties, telephone poles, marine pilings, and fence posts (Ref. 16, pp. 1, 2). Contaminants present in coal-tar creosote include polycyclic aromatic hydrocarbons (PAHs), phenol, and cresols (Ref. 16, p. 1). Coal-tar creosote is usually a heavy, oily liquid that is typically amber to brown in color (Ref. 16, p. 2). The creosote found at hazardous waste sites is most often a black, heavy liquid with a sharp smoky odor and burning taste.

In 1958, American Creosoting Corporation purchased portions of the property. In June 1959, W. G. Avery Body Company obtained portions of the property and operated a body shop. ConSteel purchased

the property in 1994 (Ref. 6, p. 2). ConSteel currently owns the 8-acre property on which the former operations area of the Gulf States facility lies (Ref. 4, pp. 2, 3). ConSteel appears to be operating on the portion of the property that it owns. Avery Lead Track, LLC., currently owns two additional parcels of the property, totaling approximately 120 acres (Ref. 4, pp. 2, 4, 6, 7).

2.4 Regulatory and Release History

In July 1993, a Phase I Environmental Assessment (Phase I) of the property included a review of the Mississippi Department of Environmental Quality (MDEQ) Underground Storage Tank (UST) division records (Ref. 1, p. 3). No past UST usage on the property was found during the review. No other regulatory or permitting information has been identified for the facility.

2.5 Previous Investigations

In June 1993, BCM Engineers, Inc. (BCM) conducted a Phase I of the former Gulf States property on behalf of Trustmark National Bank (Ref. 1, p. 3). The objective of the Phase I was to identify adverse environmental conditions, suspect activities, and potential hazardous wastes or materials on or in the vicinity of the subject property. The Phase I included the collection of soil samples from soil borings ranging in depth from 0 to 8 feet below ground surface (bgs). The seven soil borings were concentrated in the suspected location of the former creosote operations. Of the seven borings, five samples were collected and analyzed for semi-volatile organic compounds (SVOCs). Constituents detected in the soil samples were naphthalene, 2-methylnaphthalene, dibenzofuran, fluorene, phenanthrene, and fluoranthene. The concentrations ranged from below the detection limit to 604 milligrams per kilogram (mg/kg) (Ref. 1, p. 3).

In August 1993, BCM conducted a Phase II of the former Gulf States property (Ref. 1, p. 3). The objective of the Phase II was to delineate the extent of the creosote-contaminated soil identified during the Phase I investigation. During the Phase II, several soil borings were advanced and five soil samples were collected for SVOC laboratory analysis (Ref. 1, p. 4). The soil borings ranged in depth from 0 to 8 feet bgs. Sample results indicated the presence of 2-methylnaphthalene, naphthalene, dibenzofuran, phenanthrene, fluoranthene, pyrene, and chrysene. Constituents ranged from below the detection limit to 1,057 mg/kg. The data were compared to health-based criteria for exposure via groundwater ingestion. Based on such a comparison, the recommendation for no further action was presented because the soil contaminants were below the target cleanup levels (Ref. 1, p. 4).

In April 2003, Weston Solutions, Inc. (Weston) conducted a Preliminary Assessment/Site Inspection (PA/SI) at the site for EPA (Ref. 1). All sampling was conducted by the EPA Science and Ecosystem Support Division (SESD) (Ref. 17). SESD collected surface soil samples, subsurface soil samples, groundwater samples, and sediment samples on or near the Gulf States property (see Appendix A, Figures 3 and 4) (Refs. 1, p. 4; 17). Sampling specifics are detailed in Section 2.5.1.

In May 2006, EPA SESD and MDEQ collected fish, sediment, and surface water samples within the Creosote Slough located on the western side of the property and analyzed them for PAHs. The study area was comprised of a reference station (CS-01) and three other stations (CS-02, CS-03, and CS-04) that covered the area from the railroad tracks on the north end of the property to the terminus of the slough at the Pearl River (Ref. 5, p. 1).

PAH concentrations in surface water were compared to the Ambient Water Quality Criteria for Human Health (AWQC-HH) (Ref. 5, p. 2). PAH concentrations in sediments were compared to EPA Region 9 Preliminary Remediation Goals (PRGs) for industrial soil (Ref. 5. p. 3). In all fish tissue samples, an EPA reference titled *Guidance for Assessing Chemical Contaminant Data for use in Fish Advisories, Vol. 1* (US EPA 2000), was used in assessment of the results. In summary, levels of PAHs detected in surface water, sediment, and fish tissue samples during the May 2006 sampling event were found to be of no current concern for human exposure (Ref. 5, p. 3).

In September 2006, Earth Consulting Group, Inc. (EarthCon) performed a Limited Soil Assessment of the western portion of the ConSteel property located at 1625 Flowood Drive. The assessment included the installation of soil borings and selected soil sampling and analysis to assess the area for the presence of creosote compounds related to Gulf States prior to the purchase of the property by ConSteel (Ref. 6, p. 1).

An investigation related to a pending commercial transaction for ConSteel discovered a small depression in the northwest corner of the property that contained remnants of a concrete culvert (see Appendix A, Figure 5) (Ref. 6, p. 2). Borings B-1 thorough B-12, B-17 through B-20, B-26, and B-27 were installed with a Geoprobe® in a general radial pattern away from this area to attempt to delineate the lateral extent of the creosote impacts associated with this feature (Ref. 6, p. 2). Other areas of potential concern on the property included a possible buried drain line leading from the west side of the existing ConSteel production building to the concrete culvert remnant in the northwest corner of the property. Soil borings B-13 through B-16 were installed along the suspected route of this potential drain line including areas of stressed vegetation observed along the route (Ref. 6, p. 2). Soil borings B-21 through B-25 were installed within the footprint of a planned new ConSteel production and office facility on the southwest portion of

the property. These borings were installed to assess possible residual creosote impacts to the subsurface beneath the area where workers would be present during planned future operations (Ref. 6, pp. 2, 3). A total of 27 soil borings were installed to a depth of approximately 8 feet bgs (Ref. 6, p. 3).

According to EarthCon, approximately 15,000 square feet of the northwest corner of the property appeared to be impacted with creosote odors and/or soil staining in the shallow subsurface (Ref. 6, p. 5). Free creosote product was observed in soil borings at two locations on the site (Ref. 6, p. 5). These areas included a depression near the northwest corner of the subject property, and an area containing buried wood debris in the west-central portion of the subject property (Ref. 6, pp. 5, 6). Borings installed in the shallow depression in the northwest corner of the property were observed to contain degraded, soft soils and liquid creosote product in the upper few feet, with heavy creosote odors and stained soil to the termination depth of the borings at approximately 8 feet bgs (Ref. 6, p. 5). Creosote-soaked wood debris was encountered in several boring locations at a depth of approximately 3.5 to 4.5 feet bgs (Ref. 6, p. 6). The thickness of the buried wood debris in this area was not defined. Laboratory analytical results performed by Environmental Science Corporation (ESC) of soil samples collected from each of the two identified creosote locations on site contained SVOCs (see Appendix B, Table 1). Contaminants including benzo(a)anthracene, chrysene, and naphthalene were detected at concentrations exceeding Region 9 PRGs for industrial soil (Ref. 6, pp. 4, 5, 8).

On September 20, 2007, EPA, SESD, and MDEQ conducted a Removal Site Evaluation (RSE) at the site to ascertain the existence of a buried pipe system and determine whether the system could be contributing to contamination found in oxbow lakes (Creosote Slough) just west of the site (Refs. 18, p. 1; 19). Although an underground pipe network was identified and traced from the site to the marsh, there was no evidence of the pipe being a conduit for creosote from the former treatment area onto the marsh. The RSE revealed no trace of creosote inside the pipe (Ref. 19).

2.5.1 2003 PA/SI

Surface and Subsurface Soil Samples

SESD collected 24 surface soil samples and 21 subsurface soil samples at Gulf States in 2003 (Refs. 1, pp. 6–9; 17). One background surface soil sample (GS-01-SS) and one background subsurface soil sample (GS-01-SB) were collected northeast of the facility from Jackson Preparatory School at 3100 Lakeland Drive. SESD collected the surface soil samples from 0 to 6 inches bgs, and subsurface soil samples were collected from 2 to 3 feet bgs with the exception of two locations, which were collected between 6 and 12 inches (GS-10-SB and GS-14-SB) (Ref. 17, p. 2). For purposes of this reassessment

and adherence to the HRS, all samples collected from 0 to 2 feet bgs are considered surface soil samples. Samples collected at depths greater than 2 feet bgs are considered subsurface soil samples.

On site surface and subsurface soil samples were collected over the entire property (see Appendix A, Figure 4). Surface soil analytical results revealed HRS-elevated concentrations (three times background) of several inorganic contaminants including antimony, barium, beryllium, cadmium, copper, lead, manganese, magnesium, nickel, thallium, and zinc (see Appendix B, Table 2). No inorganic contaminants were detected at levels above the Region 9 PRG for industrial soil. Organic compounds were detected at HRS-elevated concentrations in the surface soil. These compounds include acenaphthylene, anthracene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, benzo(a)pyrene, carbazole, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene, 4,4'-DDE, 4,4'-DDT, endrin, endrin aldehyde, endrin ketone, methoxchlor, and methyl ethyl ketone (see Appendix B, Table 3) (Ref. 17). Several organic contaminants were above EPA Region 9 PRGs for industrial soil including benzo(a)anthracene,benzo(b)fluoranthene,benzo(k)fluoranthene, benzo(a)pyrene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

Elevated contaminants detected in the subsurface soil include manganese, selenium, benzo(b)fluoranthene, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, indeno(1,2,3-cd)pyrene, acetone, 4,4'-DDE, and Aroclor 1260 (see Appendix B, Tables 4 and 5) (Ref. 17).

Groundwater Samples

SESD collected five groundwater samples from temporary monitoring wells installed at Gulf States (see Appendix A, Figure 4) (Ref. 1, pp. 10, 19). The background sample was collected from the Jackson Preparatory School at 3100 Lakeland Drive located northeast of the facility (see Appendix A, Figure 3). On-site well locations are described in the PA/SI (Ref. 1).

Inorganic and organic contaminants were detected at elevated concentrations in the on-site temporary monitoring wells (see Appendix B, Tables 6 and 7). These contaminants include aluminum, barium, beryllium, cobalt, iron, manganese, magnesium, nickel, vanadium, zinc, and methyl ethyl ketone (Ref. 17).

Sediment Samples

Eight sediment samples were collected during the PA/SI to document the migration of on-site contaminants into the marsh located west of the Gulf States property, and the Pearl River (see Appendix

A, Figure 4). (Ref. 1, p. 11). The background sample (GS-01-SD) was collected northeast of the site behind Jackson Preparatory School (see Appendix A, Figure 3) (Refs. 1; 17, p. 2). Control samples were collected upstream of the site on the Pearl River (GS-06-SD) and on Prairie Branch (GS-08-SD) to isolate various potential influences (Ref. 17, p. 2). Since a sediment sample was not collected for comparison to control sample GS-08-SD, this sample was not used for this evaluation.

Elevated contaminants detected in sediment samples from the marsh include barium, beryllium, lead, selenium, zinc, benzo(b)fluoranthene, benzo(k)fluoranthene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene, 4,4'-DDE, beta-BHC, acetone, carbon disulfide, and methyl ethyl ketone (see Appendix B, Tables 8 and 9) (Ref. 17). Of these contaminants, lead, zinc, and 4,4'-DDE were above their respective sediment screening values.

No elevated contaminants were detected in the Pearl River sediment samples (see Appendix B, Tables 10 and 11) (Ref. 17).

2.6 Potential Source Areas

The potential source area at Gulf States is contaminated soil. Contaminated soil has been detected throughout the property and comprises approximately 1,441,876 square feet (or 33 acres). Based on analytical results from 2003 and 2006, SVOCs and pesticides including acenaphthylene, anthracene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, benzo(a)pyrene, carbazole, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene, 4,4'-DDE, 4,4'-DDT, endrin, endrin aldehyde, endrin ketone, and methoxychlor were present in the surface soil as a result of Gulf States' operations (Refs. 1, 17, 16, 6). Of these contaminants, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, and 4,4'-DDE have migrated to the subsurface soil at elevated concentrations.

Although numerous metals were detected in surface soil and groundwater samples, the contamination cannot be attributed to Gulf States operations. The metals contamination is likely a contaminant derived from the body shop activities from W.G. Avery Body Company or current site activities from ConSteel.

3.0 PATHWAYS

This section discusses the groundwater migration, surface water migration, soil exposure, and air migration pathways. Additionally, this section discusses the targets associated with each pathway and draws pathway-specific conclusions. Sampling locations and analytical results for samples collected from the specific pathways are also discussed.

3.1 Groundwater Migration Pathway

Numerous metals and one VOC (methyl ethyl ketone) were detected in on-site groundwater samples; however, the groundwater contamination cannot be attributed to Gulf States.

The groundwater migration pathway is of potential concern at Gulf States since many nearby residents obtain their drinking water from groundwater sources. Based on information provided by MDEQ, nearby residents within 4-miles of the site obtain drinking water from the City of Flowood, the City of Pearl, the City of Richland, the City of Jackson, and Cleveland's Trailer Park (Ref. 20). Drinking water is obtained from groundwater wells screened in the Cockfield and Sparta aquifers, with the exception of the City of Jackson, who services a surface water intake. This intake will be discussed further in the surface water pathway.

The City of Flowood, the City of Pearl, and the City of Richland draw their water from the Sparta Aquifer (Ref. 20). Several wells from these water departments are located within 4 miles of the site (Ref. 2). Two City of Flowood wells are located within the 0.5 mile radius of the site; however, these two wells are currently inactive (reasons unknown) and were not considered for HRS scoring purposes in this assessment (Ref. 20). The City of Flowood operates two wells in the vicinity of the property; one well located within the 0.5 to 1 mile radius, and one well within the 1 to 2 mile radius. Each City of Flowood well maintains 1,500 connections (or 3,930 persons) (Refs. 20, 22). The City of Pearl operates three wells located within the 2 to 3 mile radius from the site. Each City of Pearl well maintains 7,351 connections (or 19,259 persons) (Refs. 20, 22). One additional City of Pearl well is located within the 3 to 4 mile radius of the site. The City of Richland operates one well located within the 3 to 4 mile radius of the site. The City of Richland well maintains 2,157 connections (or 5,651 persons) (Refs. 20, 22). All municipal wells in the area are located within designated Wellhead Protection Areas (Ref. 20).

Cleveland's Trailer Park maintains four community wells located within 2 to 3 miles from the site (Ref. 20). These wells are screened in the Cockfield Aquifer. Each of Cleveland's Trailer Park wells maintains 135 connections (or 353 persons) (Refs. 20, 22).

It is unknown whether private wells are present within a 4-mile radius of Gulf States. No private well information was available through the water departments or MDEQ at the time of inquiry for this reassessment. However, Weston noted in September 2003 that no private wells were observed during the site reconnaissance for the PA/SI (Ref. 21).

3.2 Surface Water Migration Pathway

The City of Jackson obtains municipal water from a surface water intake; however, the intake is not located within the 15-mile surface water pathway from the facility (Ref. 20). Several endangered and threatened species are present within the State of Mississippi; however, no file material is available indicating that any of these species are present in the surface water migration pathway of the site (Ref. 23). The property is not located within a flood plain (Ref. 24). There is no evidence of HRS-qualifying wetlands along the surface water migration pathway from the site (Ref. 25).

Sampling of the surface water migration pathway does not indicate HRS elevated levels of site-attributable constituents and no sampling data from the release is available in the file material. Although sediment samples have been collected from the Pearl River, no compounds were detected at HRS-elevated concentrations; therefore, no observed release to the surface water pathway has been documented. Additionally, the target values for the surface water migration pathway are extremely low. Therefore, the surface water migration pathway at Gulf States is of minimal concern.

3.3 Soil Exposure Pathway

The property is surrounded by natural barriers and a well-maintained fence. No residences are present on sources at the site and the number of nearby residents associated with the soil exposure pathway is minimal. The ConSteel facility is active; however, the number of workers is unknown. Therefore, the soil exposure pathway is of minimal concern and was not evaluated for this assessment.

3.4 Air Migration Pathway

No air samples have ever been collected from the Gulf States facility and no releases to the air migration pathway have been documented. Therefore, the air migration pathway at Gulf States is of minimal concern and was not evaluated for this reassessment.

4.0 CONCLUSIONS

The former 141-acre Gulf States Creosoting Company (Gulf States) is located at 1625 Flowood Drive (Mississippi Highway 468), in Flowood, Rankin County, Mississippi. Gulf States owned the property as early as 1929 and operated a wood treating facility at the location until the mid 1950s. During Gulf States operations, railroad cross ties were treated at the facility with coal-tar creosote and transported on and off site using railroad box cars. In 1958, American Creosoting Corporation purchased portions of the property. In June 1959, W. G. Avery Body Company obtained portions of the property and operated a body shop. ConSteel purchased the property in 1994. ConSteel currently owns the 8-acre property on which the former operations area of the Gulf States facility lies. ConSteel appears to be operating on the portion of the property that it owns. Avery Lead Track, LLC., currently owns two additional parcels of the property, totaling approximately 120 acres.

Several investigations have been conducted at the facility including a Phase I in June 1993 by BCM on behalf of Trustmark National Bank. The Phase I was conducted to identify any adverse environmental conditions, suspect activities, and potential hazardous wastes or materials on or in the vicinity of the property. During the Phase I, soil samples were collected from soil borings ranging in depth from 0 to 8 feet below ground surface (bgs). Contamination was identified, and in August 1993, BCM conducted a Phase II to delineate the extent of the creosote-contaminated soil identified during the Phase I investigation. During the Phase II, several soil borings were advanced and five soil samples were collected for SVOC laboratory analysis. The soil borings ranged in depth from 0 to 8 feet bgs.

In April 2003, Weston conducted a PA/SI at the site for EPA. During the PA/SI, SESD collected surface soil samples, subsurface soil samples, groundwater samples, and sediment samples on or near the Gulf States property. Results of the investigation indicated the presence of several SVOC and PAH in the surface and subsurface soils at the site.

In May 2006, EPA SESD and MDEQ collected fish, sediment, and surface water samples within the Creosote Slough located on the western side of the property for PAHs analysis. Levels of PAHs detected

in surface water, sediment, and fish tissue samples during the sampling event were found to be of no current concern for human exposure.

In September 2006, EarthCon performed a Limited Soil Assessment including the installation of soil borings and selected soil sampling and analysis to assess the area for the presence of creosote compounds related to Gulf States prior to the purchase of the property by ConSteel. These borings were installed to assess possible residual creosote impacts to the subsurface beneath the area where workers would be present during planned future operations. A total of 27 soil borings were installed to a depth of approximately 8 feet bgs. According to EarthCon, approximately 15,000 square feet of the northwest corner of the property appeared to be impacted with creosote odors and/or soil staining in the shallow subsurface. Contaminants including benzo(a)anthracene, chrysene, and naphthalene were detected at concentrations exceeding Region 9 PRGs for industrial soil.

On September 20, 2007, EPA, SESD, and MDEQ conducted a RSE at the site to ascertain the existence of a buried pipe system and determine whether the system could be contributing to contamination found in oxbow lakes (Creosote Slough) just west of the site. Although an underground pipe network was identified and traced from the site to the marsh, there was no evidence of the pipe being a conduit for creosote from the former treatment area onto the marsh. The RSE revealed no trace of creosote inside the pipe.

The groundwater migration pathway is the only pathway of concern at the Gulf States property; however, no observed release to the groundwater pathway has been documented and the number of potential targets associated with the pathway is relatively low. Several inorganic constituents have been identified in soil samples and in groundwater beneath the property; however, metals are not attributable to the operations by Gulf States at the facility. The presence of metals in the groundwater is likely a result of operations by ConSteel or Avery. Both aquifers underlying the property were evaluated as part of this reassessment; however, due to the absence of an observed release to groundwater, all targets associated with the groundwater migration pathway are potential targets.

The surface water pathway at the facility is of minimal concern because no observed release to the surface water pathway has been documented and the number of targets associated with the pathway is minimal.

The soil exposure pathway at the facility is of minimal concern because access to the facility is hindered by natural barriers and a well maintained chain-linked fence. Additionally, the number of workers is

unknown, no residences are located on source areas, and the number of nearby potential targets is minimal.

The air migration pathway at the facility is of minimal concern. No air samples have been collected from the facility and no observed release to the air migration pathway has been documented.

Based on the currently available information, the Gulf States Creosoting site score is 26.8. This score is less than the cutoff value of 28.50 necessary to consider listing a site on the National Priorities List (NPL). EPA will determine the need for further remedial actions at this property.

REFERENCES

1. Weston Solutions, Inc. Final Preliminary Assessment/Site Inspection Report, Revision 1. Gulf States Creosoting, EPA ID No. MSN000407423. December 31, 2003.
2. MyTopo.com. U.S. Geological Survey Topographic Maps of Mississippi. Ridgeland, 1998; Madison, 1998; Jackson, 1998; Jackson SE, 1998; Florence, 1979; Whitfield, 1979. Scale: 1:24,000.
3. Topozone. Topographic Map of Jackson, Mississippi. Accessed online at: http://www.topozone.com. January 2, 2008.
4. T N & Associates, Inc. Project Note to File. Subject: Rankin County Tax Assessor Information for Gulf States Creosoting Company. June 2, 2008.
5. U.S. Environmenatl Protection Agency, Science and Ecosystem Support Division, Ecological Assessment Branch. Creosote Slough Water, Sediment, and Fish Sampling Associated with Gulf State Creosoting Co., Inc. Flowood, Mississippi. November 2006.
6. Earth Con. Limited Soil Assessment, ConSteel Co. Inc. October 9, 2006.
7. U.S. Department of Agriculture, Conservation Service. *Soil Survey of Rankin County, Mississippi*. 1998.
8. U. S. Department of Commerce , Evironmental Science Services Administration. Climactic Atlas of the United States. June 1968, Reprinted by the National Oceanic and Atmospheric Administration. 1983.
9. U. S. Department of Commerce. *Rainfall Frequency Atlas of the United States for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 years*. Technical Paper No. 40. May 1963.
10. U.S. Geological Survey (USGS). *National Water Summary 1984*. Water-Supply Paper 2275. 1984.
11. Mississippi Geological, Economic, and Topographical Survey. *Rankin County Geology and Mineral Resources*. Bulletin 115. 1971.
12. USGS. *Groundwater Resources of Hinds, Madison, and Rankin Counties, Mississippi*. Bulletin 64-1. April 1964.
13. Mississippi Geologic Survey. Geologic Map of Mississippi. 1969, reprinted 1985.
14. Allen Sistrunk, Driller, Griner Drilling Services. Formation and Test Hole Information for Test Hole No. K68. Formation Log for the Town of Flowood, Well No. 5. October 16, 1981.
15. R. Allan Freeze and John A. Cherry. *Groundwater*. 1979.
16. U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry. *Toxicological Profile for Creosote*. TP-90-09. December 1990.
17. U.S. Environmental Protection Agency. Memorandum from Brian Striggow, Environmental Protection Specialist, Superfund and Air Section to Brian Farrier, Waste Management Division, South Site Management Branch. Subject: Gulf States Creosoting Sampling Event Report. July 22, 2003.
18. U.S. Environmental Protection Agency. Memorandum from Brian Striggow, Superfund Air Section to Jose Negron, Emergency Response Branch. Subject: Pipe Tracing Investigation at Gulf States Creosoting site. September 9, 2007.

19. U.S. Environmental Protection Agency. Letter to Jerry Banks, Mississippi Department of Environmental Protection. Subject: Gulf States Creosoting Company, Flowood, Mississippi. December 12, 2007.

20. Mississippi Department of Environmental Quality, Groundwater Assessment and Remediation Division. Gulf States Radial Well Search Results Report. May 29, 2008.

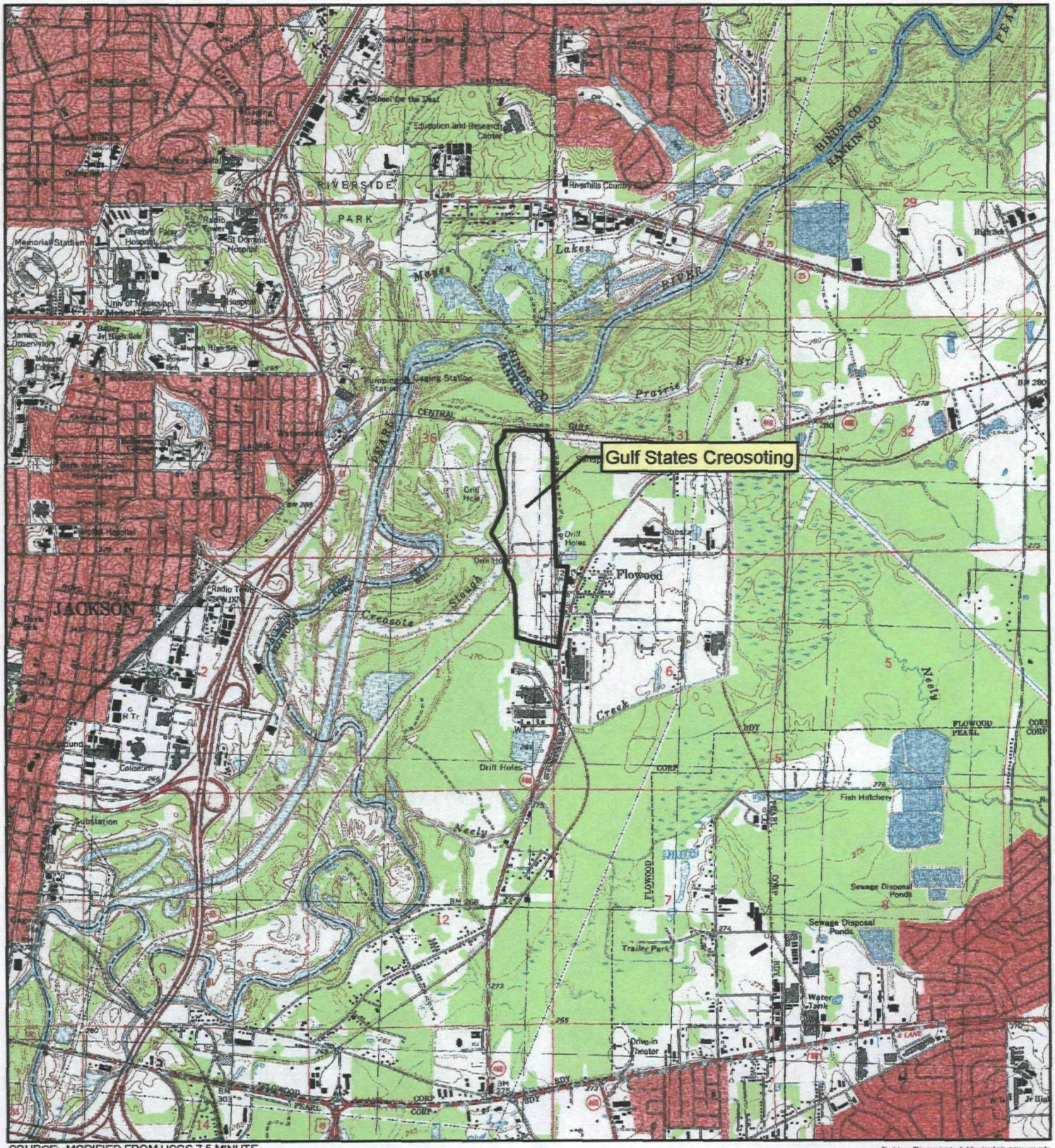
21. Weston Solutions, Inc. Logbook Notes from the Site Reconnaissance for the Gulf States Creosoting Company Preliminary Assessment/Site Inspection (PA/SI). June 3-4, 2002.

22. U.S. Census Bureau. State and County Quick Facts, Rankin County, Mississippi. Accessed online at: http://quickfacts.census.gov. July 22, 2008.

23. Mississippi Natural Heritage Program, Museum of Natural Science, Mississippi Department of Wildlife, Fisheries, and Parks. Endangered Species of Mississippi. 2002.

24. Federal Emergency Management Agency. Flood Plain Map for Gulf States Creosote. June 3, 2008.

25. TN&A. Project Note to File. Subject: Gulf State Creosoting Hazard Ranking System (HRS) Wetland Frontage Determination. June 5, 2008.



SOURCE: MODIFIED FROM USGS 7.5 MINUTE QUADRANGLE: JACKSON 1986

Disclaimer: This map is intended for visual orientation use only. In no way is this map to be used for precise locational use.

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Legend

Site Location

N

0 0.5 1

Miles

United States Environmental Protection Agency

GULF STATES CREOSOTING COMPANY
FLOWOOD, RANKIN COUNTY, MISSISSIPPI
TDD No. TNA-05-003-0045

FIGURE 1
TOPOGRAPHICAL MAP

TN & Associates, Inc.
EPA Region 4 START
In association with Shaw E&I and Aerostar

PEARL RIVER

Flowood Drive

Underwood Drive

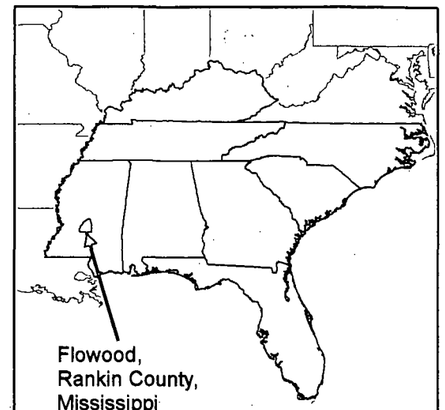
Legend

Site Boundary

N

0 400 800 1,600

Feet



April 2007 Aerial Imagery Provided by: ImmageConnect (GlobalXplorer)

United States Environmental Protection Agency

GULF STATES CREOSOTING COMPANY FLOWOOD, RANKIN COUNTY, MISSISSIPPI
TDD No. TNA-05-003-0045

FIGURE 2
AERIAL PHOTOGRAPH

TN&A T N & Associates, Inc.
EPA Region 4 START
In association with Shaw E&I and Aerostar

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Legend

- Surface Soil, Subsurface Soil, & Groundwater Sample
- Sediment Sample
- Site Boundary

N

0 750 1,500 3,000

Feet

April 2007 Aerial Imagery Provided by: ImmageConnect (GlobalXplorer)

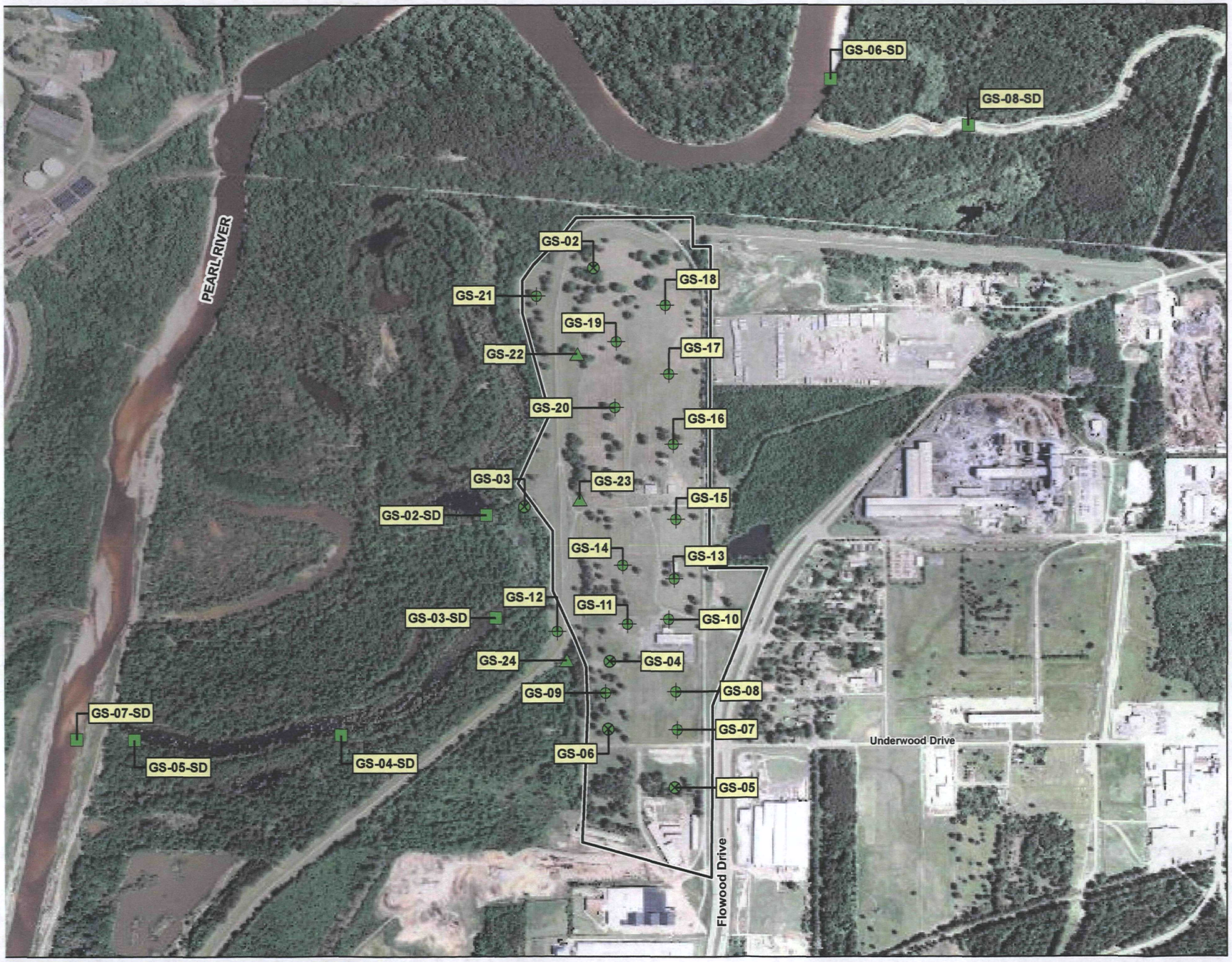
United States Environmental Protection Agency

GULF STATES CREOSOTING COMPANY FLOWOOD, RANKIN COUNTY, MISSISSIPPI
TDD No. TNA-05-003-0045

FIGURE 3
2003 BACKGROUND SAMPLE LOCATIONS

T N & Associates, Inc.
EPA Region 4 START
In association with Shaw E&I and Aerostar

C:\GIS_Workspace\Gulf States Creosote\mxds\Figure-3.mxd



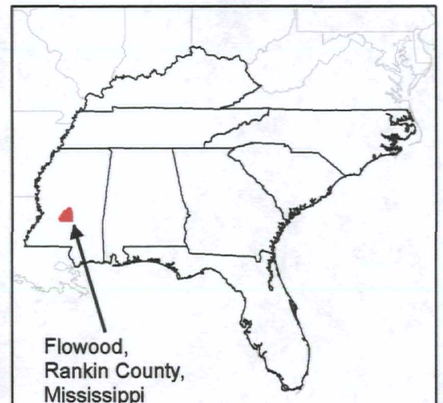
Legend

- Surface Soil, Subsurface Soil, & Groundwater Sample
- Sediment Sample
- Surface Soil & Subsurface Soil Sample
- Surface Soil Sample
- Site Boundary

N

0 450 900 1,800

Feet



United States Environmental Protection Agency

GULF STATES CREOSOTING COMPANY FLOWOOD, RANKIN COUNTY, MISSISSIPPI
TDD No. TNA-05-003-0045

FIGURE 4
2003 SAMPLE LOCATIONS

TN & A — T N & Associates, Inc.
EPA Region 4 START
In association with Shaw E&I and Aerostar

April 2007 Aerial Imagery Provided by: ImageConnect (GlobalXplorer)

C:\GIS_Workspace\Gulf States Creosote\mxds\Figure-4(landscape).mxd

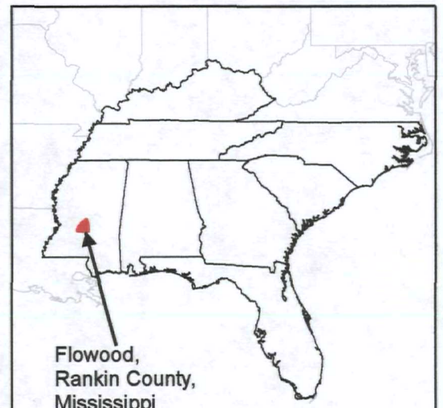
Legend

- Soil Boring Location
- Soil Boring Location with Creosote Odor
- Area of Concern

N

0 30 60 120

Feet



United States Environmental Protection Agency

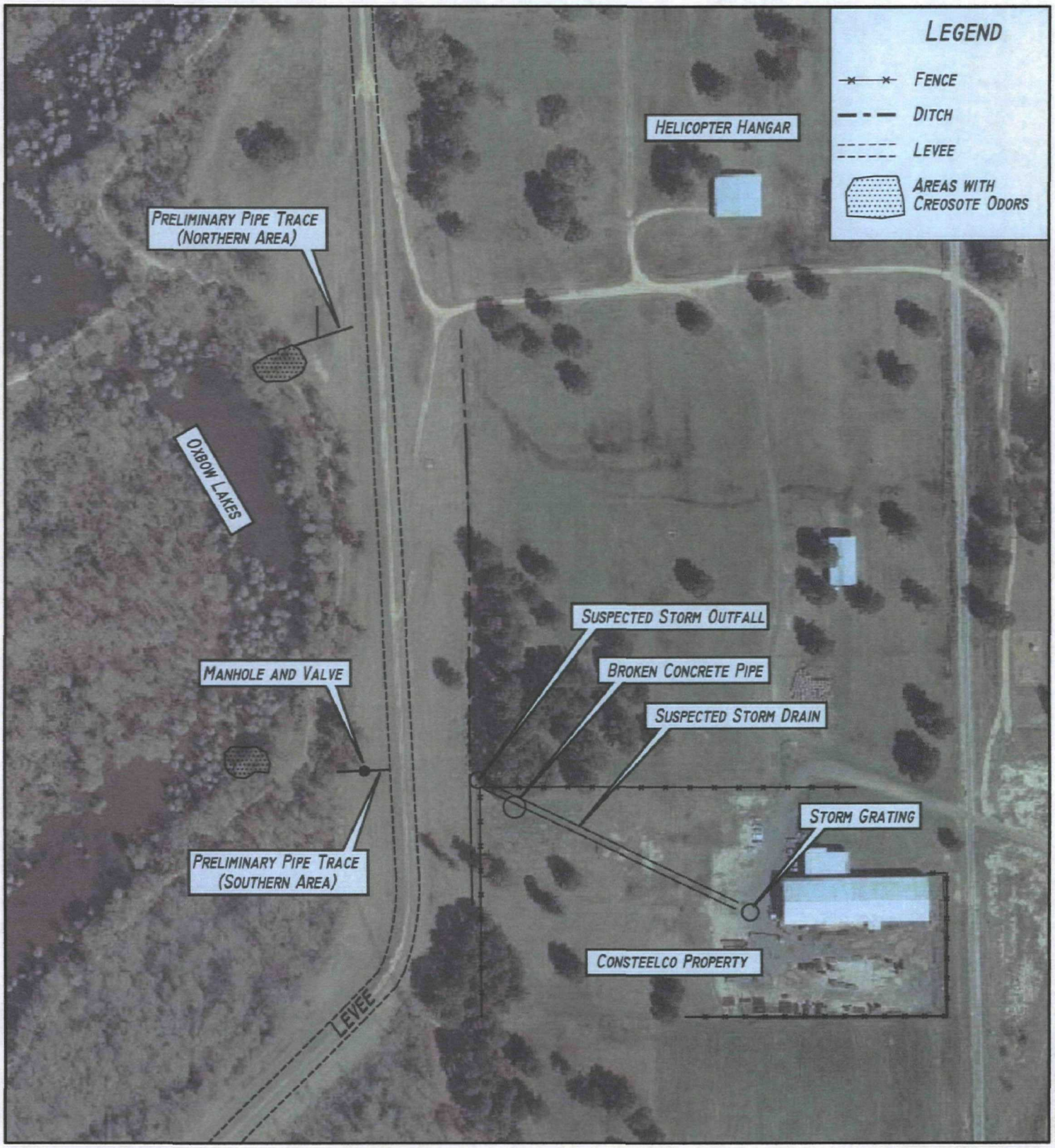
GULF STATES CREOSOTING COMPANY FLOWOOD, RANKIN COUNTY, MISSISSIPPI
TDD No. TNA-05-003-0045

FIGURE 5
2006 SAMPLE LOCATIONS

T N & Associates, Inc.
EPA Region 4 START
In association with Shaw E&I and Aerostar

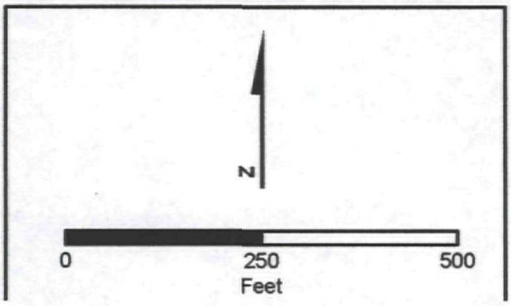
C:\GIS_Workspace\Gulf States Creosote\mxds\Figure-5.mxd

Source: Obtained from Earth Consulting Group, Inc. Limited Soil Assessment; October 2006; Figure 2: 2003 Aerial Photograph-Soil Boring Location Map



Source: Obtained from EPA SESD Removal Site Evalution; October 2007; Figure 1: Pipe Traces

Disclaimer: This map is intended for visual orientation use only. In no way is this map to be used for precise locational use.

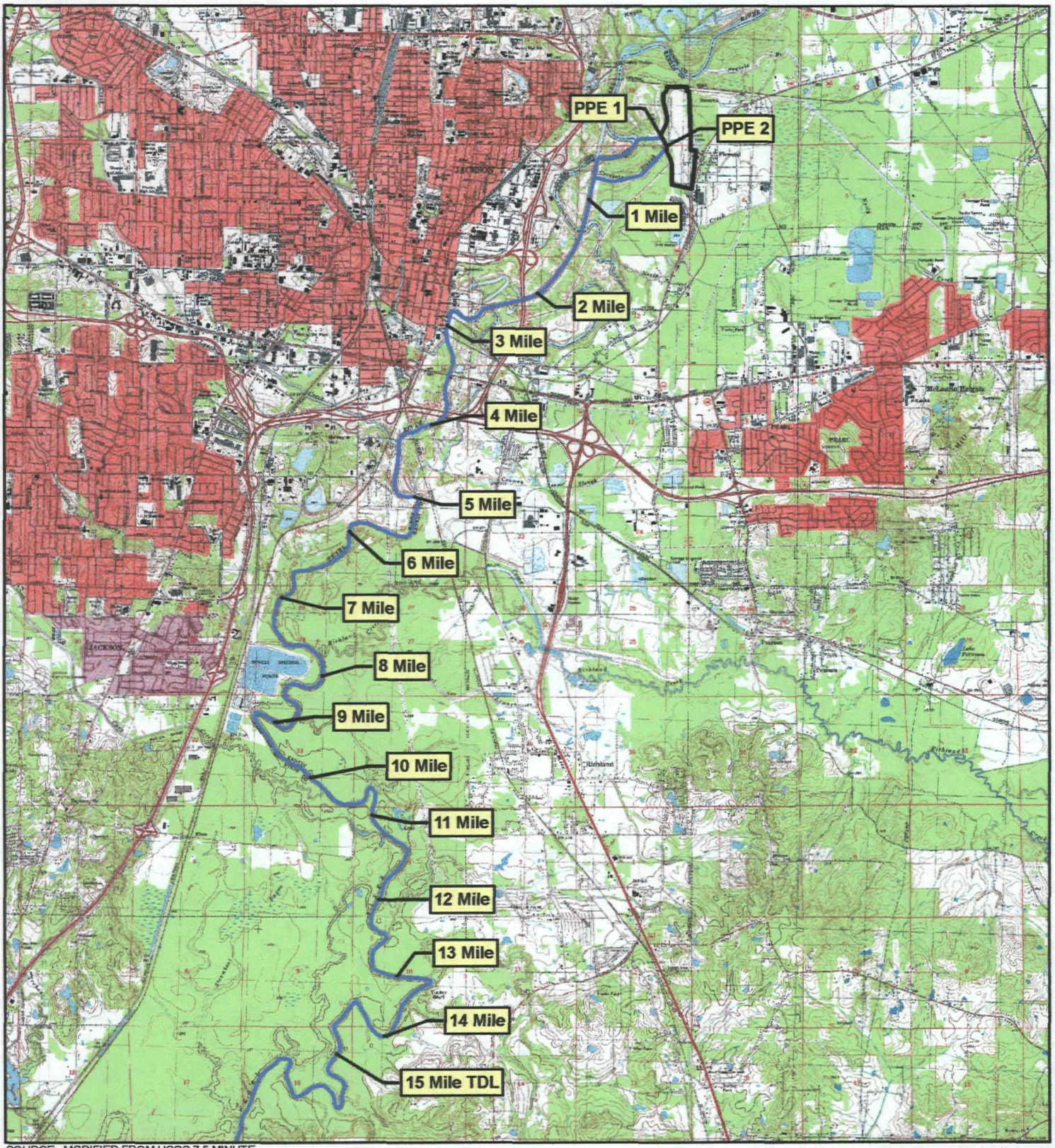


United States Environmental Protection Agency

GULF STATES CREOSOTING COMPANY
FLOWOOD, RANKIN COUNTY,
MISSISSIPPI
TDD No. TNA-05-003-0045

FIGURE 6
REMOVAL SITE EVALUATION
AREAS OF CONCERN

TN & A TN & Associates, Inc.
EPA Region 4 START



SOURCE: MODIFIED FROM USGS 7.5 MINUTE QUADRANGLE: RANKIN 1996

Disclaimer: This map is intended for visual orientation use only. In no way is this map to be used for precise locational use.

C:\GIS_Workspaces\Gulf States Creosote\mxd\surface_water\TDL.mxd

Legend

- Surface Water Pathway
- Site Boundary
- TDL Target Distance Limit
- PPE Probable Point of Entry

N

0 1 2
Miles

United States Environmental Protection Agency

GULF STATES CREOSOTING COMPANY
FLOWOOD, RANKIN COUNTY,
MISSISSIPPI
TDD No. TNA-05-003-0045

FIGURE 7
SURFACE WATER PATHWAY

TN & Associates, Inc.
EPA Region 4 START
In association with Shaw E&I and Aerostar

APPENDIX B

Tables

TABLE 2
SUMMARY OF 2003 SURFACE SOIL INORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALTYE	GS-01-SS Background	GS-02-SS	GS-03-SS	GS-04-SS	GS-05-SS	GS-06-SS	GS-07-SS	GS-08-SS	PRG
Metals, Total (mg/kg)									
Aluminum	4700 J	7800 J	8900 J	4300 J	3100 J	6700 J	2800 J	1800 J	100000
Antimony	0.56 UJ	0.64 R	0.64 U	0.63 U	0.57 U	0.65 U	0.58 U	0.5 U	409
Arsenic	**6.3**	**3.3 J**	**11**	**2**	**13**	**2**	**3.6**	**3.4**	1.59
Barium	72	120	67	60	37	85	34	21	66600
Beryllium	0.33	0.94	0.94	0.37	0.3	0.28	0.2	0.19	1940
Cadmium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.09	451
Chromium	8.4	6.1	20	6	7.5	7.7	4.5	4	448
Cobalt	5.8	17	8.1	1.7	6.6	1.4	2	1.5	1920
Copper	6	2 J	6.5 U	3.9 U	3 U	4.9 U	3.5 U	2.9 U	40900
Iron	10000	8400	27000 J	4500 J	15000 J	5600 J	5400 J	4700 J	100000
Lead	11 J	17	120	18	19	17	11	12	800
Magnesium	520 J	470 J	680	280	180	550	250	180	NL
Manganese	630	2800	550	140	610	170	180	230	19500
Nickel	4.8 U	8.3 U	5.1 U	2.6 U	2 U	2.8 U	1.9 U	1.7 U	20400
Selenium	1.3	0.93 R	1.9 J	0.63 U	0.87 U	0.65 U	0.79 U	0.68 U	5110
Silver	0.39 R	0.71 R	0.63	0.26 R	0.43	0.29	0.17 U	0.15 U	5110
Thallium	0.73 U	0.81 U	0.83 U	0.81 U	0.73 U	0.84 U	0.75 U	0.65 U	67.5
Vanadium	17	15	46	11	18	13	8.1	7.1	1020
Zinc	29	47	34	27	23	35	24	26	100000

Notes:

Shaded - Concentration is elevated (3 x background)
Bold - Value exceeds PRG
SS - Surface soil
SB - Subsurface soil
GS - Gulf States Creosoting Company
J - Constituent was detected, the reported value is an estimate
mg/kg - Milligrams per kilogram
NL - No limit established
PRG - Region 9 Preliminary Remediation Goal for Industrial Soil
R - Data is unusable
U - Analyte was not detected at or above the detection limit
* - Samples were collected from 6 to 12 inches below ground surface; therefore, are considered surface soil for this investigation

TABLE 2
SUMMARY OF 2003 SURFACE SOIL INORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SS Background	GS-09-SS	GS-10-SB*	GS-10-SS	GS-11-SS	GS-12-SS	GS-13-SS	GS-14-SB*	PRG
Metals, Total (mg/kg)									
Aluminum	4700 J	2500 J	8600 J	4700 J	4400 J	5500 J	4400 J	4600 J	100000
Antimony	0.56 UJ	1.2 R	0.96 R	1 R	0.51 UJ	0.58 U	0.6 R	0.56 UJ	409
Arsenic	**6.3**	0.95 R	**13**	**6.8**	**3.7**	**4.4**	**6.3**	**7.4**	1.59
Barium	72	25	430	120	54	83	58	54	66600
Beryllium	0.33	0.15	1.3	0.46	0.44	0.46	0.54	0.48	1940
Cadmium	0.05 U	0.05 U	0.87	0.34	0.19	0.05 U	0.16 R	0.05 U	451
Chromium	8.4	4.1	19	23	12	8.9	7.8	7.1	448
Cobalt	5.8	0.95	12	4.8	5.4	7.3	4.2	12	1920
Copper	6	0.87 UJ	40 J	19 J	5 UJ	3.4 U	7.2 J	1.5 UJ	40900
Iron	10000	2800	20000	14000	11000	11000 J	12000	14000	100000
Lead	11 J	8.8	71	80	290	25	33	27	800
Magnesium	520 J	160 J	2400 J	780 J	260 J	380	280 J	250 J	NL
Manganese	630	28	1800	500	880	990	940	1000	19500
Nickel	4.8 U	1.5 U	20	8.5 U	4.9 U	3.2 U	5.2 U	3.3 U	20400
Selenium	1.3	0.6 U	1.2	0.98 R	0.77 R	1.1 U	1.2	0.56 U	5110
Silver	0.39 R	0.28 R	0.76	0.49	0.38	0.43	0.33 R	0.42	5110
Thallium	0.73 U	0.77 U	0.76 U	0.7 U	0.66 U	0.75 U	0.69 U	0.73 U	67.5
Vanadium	17	6.6	30	18	16	22	17	23	1020
Zinc	29	19	290	160	840	28	72	20	100000

Notes:

Shaded - Concentration is elevated (3 x background)
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SS - Surface soil
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J - Constituent was detected, the reported value is an estimate
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TABLE 2
SUMMARY OF 2003 SURFACE SOIL INORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SS Background	GS-14-SS	GS-15-SS	GS-16-SS	GS-17-SS	GS-18-SS	GS-19-SS	GS-20-SS	PRG
Metals, Total (mg/kg)									
Aluminum	4700 J	4800 J	8000 J	7700 J	9000 J	4900 J	8500 J	6700 J	100000
Antimony	0.56 UJ	0.69 J	0.56 UJ	0.7 UJ	0.83 UJ	1 UJ	0.89 UJ	0.6 UJ	409
Arsenic	**6.3**	**9**	**6.9**	**5.5 J**	**5.5**	**5.4**	**6.5**	**5.8**	1.59
Barium	72	65	72	50	120	53	89	410	66600
Beryllium	0.33	0.44	0.71	0.43	0.94	0.35	0.73	1.2	1940
Cadmium	0.05 U	0.11 R	0.1	0.05 U	0.07 R	0.05 U	0.05 U	0.17	451
Chromium	8.4	8.6	11	10	8	9.9	8.3	8.2	448
Cobalt	5.8	7.3	11	4	12	7.6	13	17	1920
Copper	6	5.7 UJ	4.8 UJ	5.3 U	5.5 U	3.1 U	3.8 U	0.95 U	40900
Iron	10000	11000	12000	12000	12000	10000	12000	12000	100000
Lead	11 J	24	26	15 J	20 J	15 J	19 J	24 J	800
Magnesium	520 J	340 J	430 J	510 J	490 J	340 J	530 J	380 J	NL
Manganese	630	870	1800	240	2500	590	1900	5500	19500
Nickel	4.8 U	4.1 U	6.7 U	3.6 U	9.2 U	3.9 U	6.7 U	8 U	20400
Selenium	1.3	0.63 R	1.1 R	1.3	1.5 J	1.1	1.2	1.3 J	5110
Silver	0.39 R	0.37	0.5	0.39 R	0.51 R	0.29	0.53 R	0.9 R	5110
Thallium	0.73 U	0.72 U	0.73 U	0.78 U	0.79 U	0.8 U	0.73 U	1.5	67.5
Vanadium	17	21	23	22	23	20	22	22	1020
Zinc	29	44	48	33	65	34	52	88	100000

Notes:

Shaded - Concentration is elevated (3 x background)
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TABLE 2
SUMMARY OF 2003 SURFACE SOIL INORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SS Background	GS-21-SS	GS-22-SS	GS-23-SS	GS-24-SS	PRG
Metals, Total (mg/kg)						
Aluminum	4700 J	6800 J	4200 J	7500 J	4900 J	100000
Antimony	0.56 UJ	0.96 UJ	0.56 U	0.65 UJ	0.91 U	409
Arsenic	**6.3**	**2.7**	**4**	**5**	**6.5**	1.59
Barium	72	88	42	83	120	66600
Beryllium	0.33	0.81	0.43	0.5	0.61	1940
Cadmium	0.05 U	0.05 U	0.05 U	0.1 R	0.16	451
Chromium	8.4	5.6	9.4	12	12	448
Cobalt	5.8	14	5.5	6.8	6.8	1920
Copper	6	1.5 U	2.5 U	12 J	8.4 U	40900
Iron	10000	7300	9700 J	13000	17000 J	100000
Lead	11 J	13 J	9.8	24	28	800
Magnesium	520 J	270 J	220	630 J	450	NL
Manganese	630	2200	470	920	890	19500
Nickel	4.8 U	6.7 U	2.2 U	4.8 U	5.3 U	20400
Selenium	1.3	0.8	1.1 U	1.1 R	1.5 U	5110
Silver	0.39 R	0.52	0.2	0.46 R	0.47	5110
Thallium	0.73 U	0.79 U	0.72 U	0.83 U	1.2 U	67.5
Vanadium	17	13	21	23	26	1020
Zinc	29	24	19	49	89	100000

Notes:

Shaded - Concentration is elevated (3 x background)
Bold - Value exceeds PRG
SS - Surface soil
SB - Subsurface soil
GS - Gulf States Creosoting Company
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mg/kg - Milligrams per kilogram
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TABLE 3
SUMMARY OF 2003 SURFACE SOIL ORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SS Background	GS-02-SS	GS-03-SS	GS-04-SS	GS-05-SS	GS-06-SS	GS-07-SS	GS-08-SS	PRG
SVOC (ug/kg)									
1,1-Biphenyl	380 U	430 U	430 U	430 U	390 U	450 U	45 J	1400 U	23300000
2-Methylnaphthalene	380 U	430 U	430 U	430 U	390 U	450 U	120 J	1400 U	NL
Acenaphthene	380 U	430 U	430 U	430 U	390 U	450 U	170 J	1400 U	29200000
Acenaphthylene	380 U	430 U	430 U	430 U	120 J	450 U	320 J	480 J	NL
Anthracene	380 U	430 U	430 U	430 U	470	450 U	970	930 J	100000000
Benzo(a)Anthracene	380 U	430 U	430 U	430 U	770	450 U	**2500**	1500	2110
Benzo(b)Fluoranthene	380 U	430 U	420 U	430 U	1800 J	450 U	**4600 J**	**11000 J**	2110
Benzo(ghi)Perylene	380 U	430 U	430 U	430 U	380 J	450 U	690	3800	NL
Benzo(k)Fluoranthene	380 U	430 U	430 U	430 U	2100 J	450 U	5200 J	12000 J	21100
Benzo(a)Pyrene	380 U	430 U	430 U	430 U	**810**	450 U	**2100**	**3700**	211
Carbazole	380 U	430 U	430 U	430 U	200 J	450 U	510	190 J	86200
Chrysene	380 U	430 U	430 U	430 U	1500	450 U	4900	2300	211000
Dibenzo(a,h)Anthracene	380 UJ	430 UJ	430 U	430 U	190 J	450 U	**520**	**1700**	211
Dibenzofuran	380 U	430 U	430 U	430 U	390 U	450 U	240 J	1400 U	1560000
Fluoranthene	380 U	430 U	430 U	430 U	2600	450 U	8200	2600	22000000
Fluorene	380 U	430 U	430 U	430 U	390 U	450 U	180 J	1400 U	26300000
Indeno (1,2,3-cd) Pyrene	380 UJ	430 UJ	430 U	430 U	610	450 U	1100	**5000**	2110
Naphthalene	380 U	430 U	430 U	430 U	390 U	450 U	87 J	1400 U	188000
Pentachlorophenol	970 UJ	1100 UJ	1100 U	1100 U	980 U	1100 U	980 U	3500 U	9000
Phenanthrene	380 U	430 U	430 U	430 U	320 J	450 U	4200	610 J	NL
Pyrene	380 U	430 U	430 U	430 U	1500	450 U	6200	2500	29100000
Pesticides (ug/kg)									
4,4'-DDE (p,p'-DDE)	3.8 U	4.3 U	4.3 U	4.3 U	9.9 U	4.5 U	6.4 U	13 U	7020
4,4'-DDT (p,p'-DDT)	3.8 U	4.3 U	4.3 U	4.3 U	4 U	4.5 U	12 J	41 J	7020
alpha-BHC	2 U	2.2 U	2.2 U	2.2 U	2 U	2.3 U	2 U	1.8 U	359
Endrin	3.8 U	4.3 U	4.3 U	4.3 U	12 U	4.5 U	7.1 U	10 U	185000
Endrin Aldehyde	3.8 U	4.3 U	4.3 U	4.3 U	18 J	4.5 U	3.9 U	17 J	NL
Endrin Ketone	3.8 U	4.3 U	4.3 U	4.3 U	17 U	4.5 U	20 U	24 U	NL
Methoxychlor	20 U	22 U	22 U	22 U	48 U	23 U	47 U	74 NJ	3080000

TABLE 3
SUMMARY OF 2003 SURFACE SOIL ORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SS Background	GS-02-SS	GS-03-SS	GS-04-SS	GS-05-SS	GS-06-SS	GS-07-SS	GS-08-SS	PRG
VOC (ug/kg)									
Acetone	100 J	180 J	25 J	28 J	91 J	82 J	87 J	74 J	54300000
Benzene	11 U	12 U	13 U	12 U	10 U	13 U	10 U	11 U	1410
Methyl Acetate	11 U	12 U	13 U	12 U	10 U	13 U	10 U	11 U	91500000
Methyl Ethyl Ketone	11 U	21	13 UJ	12 UJ	10 UJ	13 UJ	10 UJ	11 UJ	113000000

Notes:

Shaded - Concentration is elevated (3 x background)
Bold - Value exceeds PRG
SS - Surface soil
SB - Subsurface soil
GS - Gulf States Creosoting Company
J - Constituent was detected, the reported value is an estimate
N - Presumptive evidence that analyte is present; reported as a tentative identification with an
NJ - estimated value.
NL - No limit established
PRG - Region 9 Preliminary Remediation Goal for Industrial Soil
R - Data is unusable
SVOC - Semivolatile organic compounds
U - Analyte was not detected at or above the detection limit
µg/kg - Micrograms per kilogram
VOC - Volatile organic compounds
* - Samples were collected from 6 to 12 inches below ground surface; therefore, are considered surface soil for this investigation

TABLE 3
SUMMARY OF 2003 SURFACE SOIL ORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SS Background	GS-09-SS	GS-10-SB*	GS-10-SS	GS-11-SS	GS-12-SS	GS-13-SS	GS-14-SB*	PRG
SVOC (ug/kg)									
1,1-Biphenyl	380 U	450 U	800 U	380 U	350 U	400 U	1100 U	390 U	23300000
2-Methylnaphthalene	380 U	450 U	200 J	69 J	70 J	400 U	1100 U	390 U	NL
Acenaphthene	380 U	450 U	210 J	97 J	350 U	400 U	1100 U	390 U	29200000
Acenaphthylene	380 U	450 U	6100	1100	330 J	400 U	1000 J	330 J	NL
Anthracene	380 U	450 U	12000	1700	830	400 U	1600	690	100000000
Benzo(a)Anthracene	380 U	450 U	**23000**	**2800**	1000	400 U	**4300**	1400	2110
Benzo(b)Fluoranthene	380 U	450 U	**37000**	**5200**	**2500**	400 U	**7300 J**	**2400**	2110
Benzo(ghi)Perylene	380 U	450 U	5200	1300	460	400 U	2000	540	NL
Benzo(k)Fluoranthene	380 U	450 U	**26000**	2300	1700	400 U	5400 J	2000	21100
Benzo(a)Pyrene	380 U	450 U	**25000**	**3100**	**800**	400 U	**3100**	**1400**	211
Carbazole	380 U	450 U	1800	480	210 J	400 U	540 J	210 J	86200
Chrysene	380 U	450 U	35000	4300	1500	400 U	6200	2100	211000
Dibenzo(a,h)Anthracene	380 UJ	450 U	**3300**	**750**	**310 J**	400 U	**1100**	**390**	211
Dibenzofuran	380 U	450 U	340 J	120 J	140 J	400 U	1100 U	390 U	1560000
Fluoranthene	380 U	450 U	28000	4700	1900	400 U	11000	2200	22000000
Fluorene	380 U	450 U	800 U	380 U	350 U	400 U	1100 U	390 U	26300000
Indeno (1,2,3-cd) Pyrene	380 UJ	450 U	**20000**	**2300**	940	400 U	**3100**	1100	2110
Naphthalene	380 U	450 U	390 J	110 J	120 J	400 U	1100 U	390 U	188000
Pentachlorophenol	970 UJ	1100 U	680 J	690 J	640 J	1000 U	2900 U	980 U	9000
Phenanthrene	380 U	450 U	2700	1400	540	400 U	1600	510	NL
Pyrene	380 U	450 U	37000	5000	1700	400 U	6800	2400	29100000
Pesticides (ug/kg)									
4,4'-DDE (p,p'-DDE)	3.8 U	4.5 U	4 U	3.8 U	3.5 U	4 U	30 U	3.9 U	7020
4,4'-DDT (p,p'-DDT)	3.8 U	4.5 U	110 N	43 J	30 J	4 U	38 J	16 J	7020
alpha-BHC	2 U	2.3 U	2 U	1.9 U	1.8 U	2 U	2 U	2 U	359
Endrin	3.8 U	4.5 U	37 U	15 U	3.5 U	4 U	42 J	3.9 U	185000
Endrin Aldehyde	3.8 U	4.5 U	15 U	3.8 U	3.5 U	4 U	49 J	3.9 U	NL
Endrin Ketone	3.8 U	4.5 U	180 N	3.8 U	3.5 U	4 U	150	3.9 U	NL
Methoxychlor	20 U	23 U	360 U	81 NJ	54 U	20 U	20 U	43 U	3080000

TABLE 3
SUMMARY OF 2003 SURFACE SOIL ORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SS Background	GS-09-SS	GS-10-SB*	GS-10-SS	GS-11-SS	GS-12-SS	GS-13-SS	GS-14-SB*	PRG
VOC (ug/kg)									
Acetone	100 J	13 UJ	78 J	84 J	220 J	210 UJ	200 J	55 J	54300000
Benzene	11 U	13 U	2 J	11 U	11 U	10 U	15 U	10 U	1410
Methyl Acetate	11 U	13 U	13 U	11 U	11 U	10 U	15 U	10 U	91500000
Methyl Ethyl Ketone	11 U	13 UJ	13 U	11 U	21 J	14 J	15 J	10 U	113000000

Notes:

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SS - Surface soil
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GS - Gulf States Creosoting Company
J - Constituent was detected, the reported value is an estimate
N - Presumptive evidence that analyte is present; reported as a tentative identification with an
NJ - estimated value.
NL - No limit established
PRG - Region 9 Preliminary Remediation Goal for Industrial Soil
R - Data is unusable
SVOC - Semivolatile organic compounds
U - Analyte was not detected at or above the detection limit
µg/kg - Micrograms per kilogram
VOC - Volatile organic compounds
* - Samples were collected from 6 to 12 inches below ground surface; therefore, are considered surface soil for this investigation

TABLE 3
SUMMARY OF 2003 SURFACE SOIL ORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SS Background	GS-14-SS	GS-15-SS	GS-16-SS	GS-17-SS	GS-18-SS	GS-19-SS	GS-20-SS	PRG
SVOC (ug/kg)									
1,1-Biphenyl	380 U	380 U	390 U	420 U	420 U	430 U	400 U	420 U	23300000
2-Methylnaphthalene	380 U	380 U	390 U	420 U	420 U	430 U	400 U	420 U	NL
Acenaphthene	380 U	380 U	390 U	420 U	420 U	430 U	400 U	420 U	29200000
Acenaphthylene	380 U	380 U	250 J	87 J	270 J	430 U	400 U	420 U	NL
Anthracene	380 U	1100	370 J	420 U	380 J	430 U	400 U	420 U	100000000
Benzo(a)Anthracene	380 U	**2300**	690	260 J	1000	430 U	400 U	58 J	2110
Benzo(b)Fluoranthene	380 U	**4200**	1500	700 J	**2600 J**	430 U	400 U	160 J	2110
Benzo(ghi)Perylene	380 U	820	360 J	92 J	290 J	430 U	400 U	420 U	NL
Benzo(k)Fluoranthene	380 U	2400	1100	730 J	2700 J	430 U	400 U	170 J	21100
Benzo(a)Pyrene	380 U	**2300**	**650**	**230 J**	**1000**	430 U	400 U	46 J	211
Carbazole	380 U	280 J	250 J	62 J	130 J	430 U	400 U	420 U	86200
Chrysene	380 U	3100	1700	390 J	1600	430 U	400 U	98 J	211000
Dibenzo(a,h)Anthracene	380 UJ	**580**	200 J	95 J	**330 J**	430 U	400 U	420 U	211
Dibenzofuran	380 U	380 U	390 U	420 U	420 U	430 U	400 U	420 U	1560000
Fluoranthene	380 U	3100	3100	760	2500	430 U	400 U	73 J	22000000
Fluorene	380 U	380 U	390 U	420 U	420 U	430 U	400 U	420 U	26300000
Indeno (1,2,3-cd) Pyrene	380 UJ	1700	740 J	270 J	890	430 U	400 U	63 J	2110
Naphthalene	380 U	380 U	390 U	420 U	420 U	430 U	400 U	420 U	188000
Pentachlorophenol	970 UJ	970 U	990 UJ	1100 U	1100 U	1100 U	1000 U	1100 U	9000
Phenanthrene	380 U	320 J	1100	310 J	250 J	430 U	400 U	420 U	NL
Pyrene	380 U	3300	2200	540	1700	430 U	400 U	100 J	29100000
Pesticides (ug/kg)									
4,4'-DDE (p,p'-DDE)	3.8 U	3.8 U	3.9 U	2.5 J	4.2 U	4.3 U	4 U	4.1 NJ	7020
4,4'-DDT (p,p'-DDT)	3.8 U	10 NJ	30 NJ	4.2 U	4.2 U	4.3 U	4 U	4.2 U	7020
alpha-BHC	2 U	2 U	2 U	2.2 U	2.2 U	2.2 U	2 U	2.2 U	359
Endrin	3.8 U	3.8 U	11 U	4.2 U	6.4 J	4.3 U	4 U	4.2 U	185000
Endrin Aldehyde	3.8 U	3.8 U	27 NJ	4.2 U	4.2 U	4.3 U	4 U	4.2 U	NL
Endrin Ketone	3.8 U	3.8 U	3.9 U	14 J	20 J	4.3 U	4 U	4.2 U	NL
Methoxychlor	20 U	34 NJ	61 U	22 U	22 U	22 U	20 U	22 U	3080000

TABLE 3
SUMMARY OF 2003 SURFACE SOIL ORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SS Background	GS-14-SS	GS-15-SS	GS-16-SS	GS-17-SS	GS-18-SS	GS-19-SS	GS-20-SS	PRG
VOC (ug/kg)									
Acetone	100 J	75 J	100 J	56 J	260 J	130 J	180 J	83 J	54300000
Benzene	11 U	11 U	10 U	12 U	13 U	13 U	11 U	12 U	1410
Methyl Acetate	11 U	11 U	3 J	12 U	13 U	13 U	3 J	12 U	91500000
Methyl Ethyl Ketone	11 U	11 U	12	12 U	28 J	14 J	17 J	12 U	113000000

Notes:

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R - Data is unusable
SVOC - Semivolatile organic compounds
U - Analyte was not detected at or above the detection limit
µg/kg - Micrograms per kilogram
VOC - Volatile organic compounds
* - Samples were collected from 6 to 12 inches below ground surface; therefore, are considered surface soil for this investigation

TABLE 3
SUMMARY OF 2003 SURFACE SOIL ORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SS Background	GS-21-SS	GS-22-SS	GS-23-SS	GS-24-SS	PRG
SVOC (µg/kg)						
1,1-Biphenyl	380 U	420 U	380 U	450 U	600 U	23300000
2-Methylnaphthalene	380 U	420 U	380 U	450 U	600 U	NL
Acenaphthene	380 U	420 U	380 U	450 U	600 U	29200000
Acenaphthylene	380 U	420 U	380 U	66 J	150 J	NL
Anthracene	380 U	420 U	380 U	430 U	330 J	100000000
Benzo(a)Anthracene	380 U	420 U	380 U	430 J	990	2110
Benzo(b)Fluoranthene	380 U	420 U	380 U	NA	2700 J	2110
Benzo(ghi)Perylene	380 U	420 U	380 U	180 J	330 J	NL
Benzo(k)Fluoranthene	380 U	420 U	380 U	520	2600 J	21100
Benzo(a)Pyrene	380 U	420 U	380 U	**380 J**	870	211
Carbazole	380 U	420 U	380 U	450 U	600 U	86200
Chrysene	380 U	420 U	380 U	510	1100	211000
Dibenzo(a,h)Anthracene	380 UJ	420 U	380 U	120 J	**260 J**	211
Dibenzofuran	380 U	420 U	380 U	450 U	600 U	1560000
Fluoranthene	380 U	420 U	380 U	520	1300	22000000
Fluorene	380 U	420 U	380 U	450 U	600 U	26300000
Indeno (1,2,3-cd) Pyrene	380 UJ	420 U	380 U	340 J	550 J	2110
Naphthalene	380 U	420 U	380 U	450 U	600 U	188000
Pentachlorophenol	970 UJ	1100 U	950 U	1100 UJ	1500 U	9000
Phenanthrene	380 U	420 U	380 U	59 J	600 U	NL
Pyrene	380 U	420 U	380 U	450	1600	29100000
Pesticides (ug/kg)						
4,4'-DDE (p,p'-DDE)	3.8 U	4.2 U	3.8 U	4.5 U	6 U	7020
4,4'-DDT (p,p'-DDT)	3.8 U	4.2 U	3.8 U	4.5 U	6 U	7020
alpha-BHC	2 U	2.2 U	2 U	1.7 NJ	3.1 U	359
Endrin	3.8 U	4.2 U	3.8 U	4.5 U	6 U	185000
Endrin Aldehyde	3.8 U	4.2 U	3.8 U	4.5 U	6 U	NL
Endrin Ketone	3.8 U	4.2 U	3.8 U	6.9 J	6 U	NL
Methoxychlor	20 U	22 U	20 U	23 U	31 U	3080000

TABLE 3
SUMMARY OF 2003 SURFACE SOIL ORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SS Background	GS-21-SS	GS-22-SS	GS-23-SS	GS-24-SS	PRG
VOC (ug/kg)						
Acetone	100 J	270 J	110 J	130 J	220 J	54300000
Benzene	11 U	12 U	11 U	13 U	25 U	1410
Methyl Acetate	11 U	12 U	11 U	13 U	25 U	91500000
Methyl Ethyl Ketone	11 U	31 J	11 UJ	14	25 UJ	113000000

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U - Analyte was not detected at or above the detection limit
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* - Samples were collected from 6 to 12 inches below ground surface; therefore, are considered surface soil for this investigation

TABLE 4
SUMMARY OF 2003 SUBSURFACE SOIL INORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SB Background	GS-02-SB	GS-03-SB	GS-04-SB	GS-05-SB	GS-06-SB	GS-07-SB	GS-08-SB	PRG
Metals, Total (mg/kg)									
Aluminum	7300 J	7800 J	8600 J	6600 J	5300 J	7700 J	9400 J	8100 J	100000
Arsenic	**6.7**	**3.4 J**	**9.4**	**1.9**	0.91 U	**2.7**	**2.7**	**3.5**	1.59
Barium	62	34	63	57	59	48	50	45	66600
Beryllium	0.31	0.36	0.64	0.41	0.27	0.24	0.35	0.59	1940
Chromium	12	9.5	14	6.6	4.9	7.5	8	9.2	448
Cobalt	3.3	2.6	4.3	1.4	0.78 R	1.2	1.6	9.4	1920
Copper	6.4	3.8 UJ	6 U	4 U	2.1 U	3.4 U	5.7 U	3.9 U	40900
Iron	13000	13000	22000 J	7500 J	2300 J	5800 J	8200 J	12000 J	100000
Lead	8.2 J	6.6	15	9.2	6.7	11	11	5.7	800
Magnesium	580 J	480 J	770	370	220	580	550	370	NL
Manganese	180	200	200	60	16	18	19	1000	19500
Selenium	0.7	1.4	1.6	0.66 U	0.62 U	0.96 U	0.65 U	0.58 U	5110
Silver	0.38	0.38 R	0.49 R	0.19 U	0.18 U	0.28 R	0.19 U	0.32	5110
Vanadium	22	20	33	14	6.7	17	18	22	1020
Zinc	18	20	23	15	7.3	12	15	25	100000

Notes:

Shaded - Concentration is elevated (3 x background)
Bold - Value exceeds PRG
SB - Subsurface soil
GS - Gulf States Creosoting Company
J - Constituent was detected, the reported value is an estimate
mg/kg - Milligrams per kilogram
NL - No limit established
PRG - Region 9 Preliminary Remediation Goal for Industrial Soil
R - Data is unusable
U - Analyte was not detected at or above the detection limit

TABLE 4
SUMMARY OF 2003 SUBSURFACE SOIL INORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SB Background	GS-09-SB	GS-11-SB	GS-12-SB	GS-13-SB	GS-15-SB	GS-16-SB	GS-17-SB	PRG
Metals, Total (mg/kg)									
Aluminum	7300 J	5800 J	9600 J	3700 J	8400 J	11000 J	12000 J	6700 J	100000
Arsenic	**6.7**	0.88 U	**6.6**	**4.6**	**4.7**	**8.1**	**7.3**	1.5	1.59
Barium	62	29	41	19	23	45	49	61	66600
Beryllium	0.31	0.35	0.49	0.3	0.34	0.59	0.49	0.39	1940
Chromium	12	5.3	17	8.5	11	21	17	7	448
Cobalt	3.3	1 R	3.2 R	1.4	1.7	2.9	2.1	1.5	1920
Copper	6.4	1.7 UJ	5.5 UJ	1.8 U	5.5 UJ	7 J	7.7	2.4 U	40900
Iron	13000	3800	20000	13000 J	14000	24000	23000	5900	100000
Lead	8.2 J	8.4	6.7	6.7	5.1	9.2	8.7 J	9.1 J	800
Magnesium	580 J	290 J	680 J	170	470 J	640 J	650 J	310 J	NL
Manganese	180	9.3	120	55	82	410	52	57	19500
Selenium	0.7	0.6 U	1.1 R	1.4	0.57 U	2.3 J	1.7 J	0.6 U	5110
Silver	0.38	0.18 U	1.1 R	0.47	0.39	0.65	0.45	0.32 R	5110
Vanadium	22	8.4	33	26	22	36	33	13	1020
Zinc	18	12	44	8.4	20	36	25	12	100000

Notes:

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Bold - Value exceeds PRG
SB - Subsurface soil
GS - Gulf States Creosoting Company
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mg/kg - Milligrams per kilogram
NL - No limit established
PRG - Region 9 Preliminary Remediation Goal for Industrial Soil
R - Data is unusable
U - Analyte was not detected at or above the detection limit

TABLE 4
SUMMARY OF 2003 SUBSURFACE SOIL INORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SB Background	GS-18-SB	GS-19-SB	GS-20-SB	GS-21-SB	PRG
Metals, Total (mg/kg)						
Aluminum	7300 J	7700 J	12000 J	4700 J	8600 J	100000
Arsenic	**6.7**	**4.1**	**8.3**	**2.3**	**4.5**	1.59
Barium	62	26	43	24	28	66600
Beryllium	0.31	0.31	0.46	0.3	0.3	1940
Chromium	12	8.7	12	4.7	14	448
Cobalt	3.3	3.4	9.6	2.2	1.9	1920
Copper	6.4	3.9 U	6.3 U	2.3 U	3.6	40900
Iron	13000	12000	20000	6900	13000	100000
Lead	8.2 J	8 J	12 J	6 J	6.8 J	800
Magnesium	580 J	470 J	680 J	210 J	420 J	NL
Manganese	180	76	600	140	95	19500
Selenium	0.7	0.59 U	1.7 J	0.57 U	0.95 R	5110
Silver	0.38	0.32 R	0.53	0.25 R	0.4	5110
Vanadium	22	18	31	14	21	1020
Zinc	18	16	30	11	16	100000

Notes:

Shaded - Concentration is elevated (3 x background)
Bold - Value exceeds PRG
SB - Subsurface soil
GS - Gulf States Creosoting Company
J - Constituent was detected, the reported value is an estimate
mg/kg - Milligrams per kilogram
NL - No limit established
PRG - Region 9 Preliminary Remediation Goal for Industrial Soil
R - Data is unusable
U - Analyte was not detected at or above the detection limit

TABLE 5
SUMMARY OF 2003 SUBSURFACE SOIL ORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SB Background	GS-02-SB	GS-03-SB	GS-04-SB	GS-05-SB	GS-06-SB	GS-07-SB	GS-08-SB	PRG
SVOC (ug/kg)									
Anthracene	400 U	410 U	460 U	430 U	410 U	450 U	450 U	74 J	100000000
Benzo(a)Anthracene	400 U	410 U	460 U	430 U	410 U	450 U	450 U	120 J	2110
Benzo(b)Fluoranthene	400 U	410 U	460 U	430 U	410 U	450 U	47 J	1000 J	2110
Benzo(ghi)Perylene	400 U	410 U	460 U	430 U	410 U	450 U	450 U	320 J	NL
Benzo(k)Fluoranthene	400 U	410 U	460 U	430 U	410 U	450 U	45 J	980 J	21100
Benzo(a)Pyrene	400 U	410 U	460 U	430 U	410 U	450 U	450 U	**240 J**	211
bis(2-Ethylhexyl) Phthalate	400 U	410 U	460 UJ	430 UJ	450 J	450 U	450 U	400 U	123000
Chrysene	400 U	410 U	460 U	430 U	410 U	450 U	450 U	220 J	211000
Dibenzo(a,h)Anthracene	400 U	410 UJ	460 U	430 U	410 U	450 U	450 U	150 J	211
Fluoranthene	400 U	410 U	460 U	430 U	410 U	450 U	450 U	200 J	22000000
Indeno (1,2,3-cd) Pyrene	400 U	410 UJ	460 U	430 U	410 U	450 U	450 U	420	2110
Pyrene	400 U	410 U	460 U	430 U	410 U	450 U	450 U	230 J	29100000
Pesticides (ug/kg)									
4,4'-DDE (p,p'-DDE)	4 U	4.1 U	4.6 U	4.3 U	4.1 U	4.5 U	4.5 U	4 U	7020
gamma-BHC (Lindane)	2.1 U	2.1 U	2.4 U	2.2 U	2.1 U	2.3 U	2.3 U	2 U	1740
PCB-1260 (Aroclor 1260)	40 U	41 U	46 U	43 U	41 U	45 U	45 U	40 U	NL
VOC (ug/kg)									
Acetone	39 UJ	12 J	35 J	15 UJ	12 UJ	21 J	13 UJ	99 J	54300000
Methyl Ethyl Ketone	11 UJ	11 U	23 UJ	15 UJ	12 UJ	13 UJ	13 UJ	11 J	113000000

Notes:

Shaded - Concentration is elevated (3 x background)
Bold - Value exceeds PRG
a - Due to NJ qualification, compound was not used in HRS scoring
SB - Subsurface soil
GS - Gulf States Creosoting Company
HRS - Hazard Ranking System
J - Constituent was detected, the reported value is an estimate
NL - No limit established
PRG - Region 9 Preliminary Remediation Goal for Industrial Soil
SVOC - Semivolatile organic compounds
U - Analyte was not detected at or above the detection limit
µg/kg - Micrograms per kilogram
VOC - Volatile organic compounds

TABLE 5
SUMMARY OF 2003 SUBSURFACE SOIL ORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SB Background	GS-09-SB	GS-11-SB	GS-12-SB	GS-13-SB	GS-15-SB	GS-16-SB	GS-17-SB	PRG
SVOC (ug/kg)									
Anthracene	400 U	420 U	49 J	450 U	390 U	420 U	420 U	420 U	100000000
Benzo(a)Anthracene	400 U	420 U	400 U	450 U	56 J	420 U	420 U	420 U	2110
Benzo(b)Fluoranthene	400 U	420 U	400 U	450 U	160 J	420 U	420 U	41 J	2110
Benzo(ghi)Perylene	400 U	420 U	400 U	450 U	390 U	420 U	420 U	420 U	NL
Benzo(k)Fluoranthene	400 U	420 U	46 J	450 U	170 J	420 U	420 U	43 J	21100
Benzo(a)Pyrene	400 U	420 U	400 U	450 U	390 U	420 U	420 U	420 U	211
bis(2-Ethylhexyl) Phthalate	400 U	420 U	400 U	450 U	390 U	420 U	420 U	420 U	123000
Chrysene	400 U	420 U	400 U	450 U	91 J	420 U	420 U	420 U	211000
Dibenzo(a,h)Anthracene	400 U	420 U	400 U	450 U	390 U	420 UJ	420 U	420 U	211
Fluoranthene	400 U	420 U	400 U	450 U	130 J	420 U	420 U	420 U	22000000
Indeno (1,2,3-cd) Pyrene	400 U	420 U	400 U	450 U	51 J	420 UJ	420 U	420 U	2110
Pyrene	400 U	420 U	400 U	450 U	89 J	420 U	420 U	420 U	29100000
Pesticides (ug/kg)									
4,4'-DDE (p,p'-DDE)	4 U	4.2 U	4 U	4.5 U	6.9	4.2 U	4.2 U	4.2 U	7020
gamma-BHC (Lindane)	2.1 U	2.2 U	2 U	2.3 U	2 U	2.2 U	1.3 J	2.2 U	1740
PCB-1260 (Aroclor 1260)	40 U	42 U	40 U	45 U	39 U	42 U	70	42 U	NL
VOC (ug/kg)									
Acetone	39 UJ	11 UJ	24 J	11 UJ	21 UJ	67 J	11 UJ	13 U	54300000
Methyl Ethyl Ketone	11 UJ	11 UJ	11 UJ	11 UJ	10 UJ	11 U	11 UJ	13 U	113000000

Notes:

Shaded - Concentration is elevated (3 x background)
Bold - Value exceeds PRG
a - Due to NJ qualification, compound was not used in HRS scoring
SB - Subsurface soil
GS - Gulf States Creosoting Company
HRS - Hazard Ranking System
J - Constituent was detected, the reported value is an estimate
NL - No limit established
PRG - Region 9 Preliminary Remediation Goal for Industrial Soil
SVOC - Semivolatile organic compounds
U - Analyte was not detected at or above the detection limit
µg/kg - Micrograms per kilogram
VOC - Volatile organic compounds

TABLE 5
SUMMARY OF 2003 SUBSURFACE SOIL ORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SB Background	GS-18-SB	GS-19-SB	GS-20-SB	GS-21-SB	PRG
SVOC (ug/kg)						
Anthracene	400 U	440 U	420 U	400 U	410 U	100000000
Benzo(a)Anthracene	400 U	440 U	420 U	400 U	410 U	2110
Benzo(b)Fluoranthene	400 U	440 U	420 U	400 U	410 U	2110
Benzo(ghi)Perylene	400 U	440 U	420 U	120 J	410 U	NL
Benzo(k)Fluoranthene	400 U	440 U	420 U	400 U	410 U	21100
Benzo(a)Pyrene	400 U	440 U	420 U	400 U	410 U	211
bis(2-Ethylhexyl) Phthalate	400 U	440 UJ	420 UJ	400 U	410 U	123000
Chrysene	400 U	440 U	420 U	400 U	410 U	211000
Dibenzo(a,h)Anthracene	400 U	440 U	420 U	400 U	410 U	211
Fluoranthene	400 U	440 U	420 U	400 U	410 U	22000000
Indeno (1,2,3-cd) Pyrene	400 U	440 U	420 U	400 U	410 U	2110
Pyrene	400 U	440 U	420 U	400 U	410 U	29100000
Pesticides (ug/kg)						
4,4'-DDE (p,p'-DDE)	4 U	4.4 U	4.2 U	4 U	4.1 U	7020
gamma-BHC (Lindane)	2.1 U	1.7 J	2.2 U	2.1 U	2.1 U	1740
PCB-1260 (Aroclor 1260)	40 U	42 J	39 J	40 U	41 U	NL
VOC (ug/kg)						
Acetone	39 UJ	14 UJ	26 UJ	11 U	11 UJ	54300000
Methyl Ethyl Ketone	11 UJ	11 UJ	11 UJ	11 U	11 UJ	113000000

Notes:

Shaded - Concentration is elevated (3 x background)
Bold - Value exceeds PRG
a - Due to NJ qualification, compound was not used in HRS scoring
SB - Subsurface soil
GS - Gulf States Creosoting Company
HRS - Hazard Ranking System
J - Constituent was detected, the reported value is an estimate
NL - No limit established
PRG - Region 9 Preliminary Remediation Goal for Industrial Soil
SVOC - Semivolatile organic compounds
U - Analyte was not detected at or above the detection limit
µg/kg - Micrograms per kilogram
VOC - Volatile organic compounds

TABLE 6
GULF STATES CREOSOTING COMPANY
SUMMARY OF 2003 GROUNDWATER INORGANIC RESULTS

ANALYTE	GS-01-GW Background	GS-02-GW	GS-03-GW	GS-04-GW	GS-05-GW	MCL	PRG
Metals, Total (ug/L)							
Aluminum	320 UJ	450 J	850 J	1700 J	370 J	NL	36500
Barium	20	120	29	26	32	2000	2550
Beryllium	0.11	0.14	0.11	0.1 U	0.9	4	73
Chromium	1.8 R	0.92	1.8	1.6	0.6 U	100	NL
Cobalt	1.2	1.2 R	0.9 U	0.9 U	10	NL	730
Copper	1.5 U	0.73 U	1.1 U	0.78 U	0.6 U	1300	1460
Iron	1500	1400	2100	1900	**12000**	NL	10900
Magnesium	1500	5500	940	930	8200	NL	NL
Manganese	23	160	110	30	320	NL	876
Nickel	1.5 U	3.5	1.5 U	3.3	20	NL	730
Vanadium	0.6 U	0.82 R	2	1.9	0.6 U	NL	36.5
Zinc	11 U	13	18	11 U	42	NL	10900

Notes:

Shaded - Concentration is elevated (3 x background)
MCL - EPA Maximum Contaminant Limit
Bold - Value exceeds PRG
GW - Groundwater sample
GS - Gulf States Creosoting Company
J - Constituent was detected, the reported value is an estimate
ug/L - Micrograms per liter
NL - No limit established
PRG - Region 9 Preliminary Remediation Goal for Tap Water
R - Data is unusable
U - Analyte was not detected at or above the detection limit

TABLE 7
SUMMARY OF 2003 GROUNDWATER ORGANIC RESULTS
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-GW Background	GS-02-GW	GS-03-GW	GS-04-GW	GS-05-GW	MCL	PRG
VOC (ug/L)							
Methyl Ethyl Ketone	6.1 UJ	5 UJ	6.9 UJ	7.2 J	6.6 UJ	NL	6970

Notes:

Shaded - Concentration is elevated (3 x background)
MCL - EPA Maximum Contaminant Limit
GW - Groundwater sample
GS - Gulf States Creosoting Company
J - Constituent was detected, the reported value is an estimate
ug/L - Micrograms per liter
NL - No limit established
PRG - Region 9 Preliminary Remediation Goal for Tap Water
U - Analyte was not detected at or above the detection limit

TABLE 8
SUMMARY OF 2003 SEDIMENT INORGANIC RESULTS - MARSH SAMPLES
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SD Background	GS-02-SD	GS-03-SD	GS-04-SD	GS-05-SD	EcoScreen Sediment
Metals, Total (mg/kg)						
Aluminum	8200 J	4700 J	16000 J	9100 J	4900 J	NL
Arsenic	5.7	1.8 R	7.9 R	5.5	2.9 R	7.24
Barium	89	77	300	120	71	NL
Beryllium	0.39	0.56	1.3	1.2	0.51	NL
Chromium	13	7.8	24	15	8.4	52.3
Cobalt	4.4	4.7	12	11	5.5	NL
Iron	15000	6400	24000	13000	8400	NL
Lead	12 J	20 J	**41 J**	21	12	30.2
Magnesium	1000 J	410 J	1200 J	1000 J	660 J	NL
Manganese	340	500	720	280	320	NL
Selenium	1.9 R	1.1 U	4.2	2.1 U	1 U	NL
Vanadium	24	13	41	23	13	NL
Zinc	36	33	**130**	84	39	124

Notes:

Shaded - Concentration is elevated (3 x background)
Bold - Value exceeds screening level
SD - Sediment sample
GS - Gulf States Creosoting Company
J - Constituent was detected, the reported value is an estimate
mg/kg - Milligrams per kilogram
NL - No limit established
R - Data is unusable
U - Analyte was not detected at or above the detection limit

TABLE 10
SUMMARY OF 2003 SEDIMENT INORGANIC RESULTS - PEARL RIVER SAMPLES
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-06-SD Control	GS-07-SD	EcoScreen Sediment
Metals, Total (mg/kg)			
Aluminum	450 J	140 J	NL
Barium	6.8	3.2	NL
Beryllium	0.03 U	0.03 U	NL
Chromium	1.3 U	0.61 U	52.3
Cobalt	0.61 R	0.47	NL
Iron	950	340	NL
Lead	1.8	1.2 J	30.2
Magnesium	64 J	14 UJ	NL
Manganese	52	53	NL
Vanadium	1.6 R	0.57 R	NL
Zinc	3.6	2.9 U	124

Notes:

Shaded - Concentration is elevated (3 x background)
Bold - Value exceeds screening level
SD - Sediment Sample
GS - Gulf States Creosoting Company
J - Constituent was detected, the reported value is an estimate
mg/kg - Milligrams per kilogram
NL - No limit established
R - Data is unusable
U - Analyte was not detected at or above the detection limit

TABLE 9
SUMMARY OF 2003 SEDIMENT ORGANIC RESULTS - MARSH SAMPLES
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SD Background	GS-02-SD	GS-03-SD	GS-04-SD	GS-05-SD	EcoScreen Sediment
SVOC (ug/kg)						
Anthracene	440 U	410 U	270 J	900 U	430 U	330
Benzaldehyde	89 J	410 U	110 J	130 J	430 U	NL
Benzo(a)Anthracene	440 U	410 U	150 J	900 U	430 U	330
Benzo(b)Fluoranthene	440 U	410 U	540 J	900 U	430 U	655
Benzo(ghi)Perylene	92 J	410 U	940 U	900 U	430 U	655
Benzo(k)Fluoranthene	440 U	410 U	560 J	900 U	430 U	655
Benzo(a)Pyrene	440 U	410 U	150 J	900 U	430 U	330
Chrysene	440 U	410 U	250 J	900 U	430 U	330
Fluoranthene	440 U	410 U	**340 J**	900 U	430 U	330
Indeno (1,2,3-cd) Pyrene	440 U	410 U	180 J	900 U	430 UJ	655
Naphthalene	440 U	410 U	940 U	3 J	430 U	330
Phenanthrene	440 U	410 U	120 J	900 U	430 U	330
Pyrene	440 U	410 U	220 J	120 J	430 U	330
PAH (ug/kg)						
2-Methylnaphthalene	0.6 J	0.9 J	33	2 J	0.8 J	330
Acenaphthene	0.5 J	1 J	100	5	0.9 J	330
Acenaphthylene	3	2	44	9	2 U	330
Anthracene	3	7	140	34	7	330
Benzo(a)Anthracene	1 J	7	110	19	12	330
Benzo(a)Pyrene	2	4	120	17	16	330
Chrysene	1 J	10	200	36	26	330
Dibenzo(a,h)Anthracene	1 U	1 J	40	6	4	330
Fluoranthene	2	21	190	50	34	330
Fluorene	0.5 J	2	82	6	1 J	330
Naphthalene	0.6 J	0.6 J	51	3 J	0.9 J	330
Phenanthrene	2 J	12	72	11	23 U	330
Pyrene	2	15	140	33	27	330

TABLE 9
SUMMARY OF 2003 SEDIMENT ORGANIC RESULTS - MARSH SAMPLES
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-01-SD Background	GS-02-SD	GS-03-SD	GS-04-SD	GS-05-SD	EcoScreen Sediment
Pesticides (ug/kg)						
4,4'-DDE (p,p'-DDE)	7.3 U	**7.9**	16 U	15 U	7.2 U	3.3
beta-BHC	3.8 U	3.5 U	12	7.7 U	3.7 U	NL
Endosulfan II (beta)	7.3 U	6.5 J	16 U	15 U	7.2 U	NL
Endosulfan Sulfate	7.3 U	10 N	14 NJ	15 U	7.2 U	NL
VOC (ug/kg)						
Acetone	94 J	130 J	350 J	520 J	51 J	NL
Carbon Disulfide	5 J	34 U	51 J	70 U	29 U	NL
Methyl Ethyl Ketone	37 UJ	34 UJ	75 U	88 J	29 U	NL

Notes:

Shaded - Concentration is elevated (3 x background)
Bold - Value exceeds screening level
SD - Sediment Sample
GS - Gulf States Creosoting Company
J - Constituent was detected, the reported value is an estimate
N - [redacted]
NJ - Presumptive evidence that analyte is present; tentative identification with an estimated value.
PAH - Polycyclic aromatic hydrocarbon
NL - No limit established
R - Data is unusable
SVOC - Semivolatile organic compounds
U - Analyte was not detected at or above the detection limit
µg/kg - Micrograms per kilogram
VOC - Volatile organic compounds

TABLE 11
SUMMARY OF 2003 SEDIMENT ORGANIC RESULTS - PEARL RIVER SAMPLES
GULF STATES CREOSOTING COMPANY

ANALYTE	GS-06-SD Control	GS-07-SD	EcoScreen Sediment
PAH (ug/kg)			
2-Methylnaphthalene	0.4 J	0.4 J	330
Dibenzo(a,h)Anthracene	1	0.8 U	330
Fluorene	0.3 J	0.8 U	330
Naphthalene	0.5 J	0.4 J	330
Phenanthrene	4	0.9 U	330
VOC (ug/kg)			
Acetone	22 J	49 J	NL

Notes:

GS - Gulf States Creosoting Company
SD - Sediment Sample
HRS - Hazard Ranking System
J - Constituent was detected, the reported value is an estimate
PAH - Polycyclic aromatic hydrocarbon
NL - No limit established
U - Analyte was not detected at or above the detection limit
µg/kg - Micrograms per kilogram
VOC - Volatile organic compounds

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Transmitted Electronically

December 31, 2003

Ms. Donna Webster
Remedial Project Manager
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW, 11th Floor
Atlanta, Georgia 30303

Subject: **Final Preliminary Assessment/Site Inspection Report, Revision 1**
Gulf States Creosoting
EPA ID No. MSN000407423
EPA Contract No. 68-W-00-123
Technical Direction Document (TDD) No. 4W-02-03-A-003
Document Control Number (DCN) WSI-GSC-0011

Dear Ms. Webster:

Weston Solutions, Inc., Superfund Technical Assessment and Response Team - 2 (START-2) is submitting two copies of the final preliminary assessment/site inspection (PA/SI) report, Revision 1 for the Gulf States Creosoting facility in Flowood, Rankin County, Mississippi and an additional copy of references for the state.

Please contact me at (404) 527-7016 if you have any questions regarding this final PA/SI report.

Sincerely,
Weston Solutions, Inc.

Shanieka Pennamon
START-2 Project Manager

Enclosure

cc: Matthew Monsees, EPA Project Officer (w/o appendices)
Cindy Gurley, EPA Process Owner (w/o enclosure)
Joseph A. Baer, Deputy START-2 Program Manager (w/o enclosure)
Alexis K. Ullock, START-2 Site Assessment Coordinator (w/o enclosure)
START-2 File

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FINAL PRELIMINARY ASSESSMENT/SITE INSPECTION REPORT

GULF STATES CREOSOTING COMPANY
FLOWOOD, RANKIN COUNTY, MISSISSIPPI
U.S. EPA ID NO. MSN000407423

Revision 1

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 4
Atlanta, Georgia 30303

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CONTENTS

Section **Page**

CONTENTS (Continued)

TABLES

CONTENTS (Continued)

APPENDICES

A Analytical Data Tables

B Figures

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) tasked the Weston Solutions, Inc. Superfund Technical Assessment and Response Team - 2 (START-2) to prepare a preliminary assessment/site inspection (PA/SI) report for the Gulf States Creosoting Company (Gulf States) facility in Flowood, Rankin County, Mississippi, EPA ID No. MSN000407423. The PA/SI was conducted under Contract No. 68-W-00-123, Technical Direction Document (TDD) No. 4W-02-03-A-003.

The primary objective of a PA/SI is to determine whether a site has the potential to be placed on the National Priorities List (NPL). The NPL identifies sites at which a release, or threatened release, of hazardous substances poses a serious enough risk to public health or the environment to warrant further investigation and possible remediation under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986.

Information gathered during the PA/SI is used to generate a preliminary Hazard Ranking System (HRS) score. The HRS is the primary criterion EPA uses to determine whether a site should be placed on the NPL. PA/SIs are generally conducted at sites where environmental sampling and/or monitoring well installation are necessary to fulfill HRS documentation requirements.

Specifically, the objectives of the PA/SI are as follows:

- Obtain and review relevant file material
- Collect samples to attribute hazardous substances to site operations
- Collect samples to establish representative background levels
- Evaluate target populations for the groundwater migration, surface water migration, soil exposure, and air migration pathways
- Collect any other missing HRS data
- Document current site conditions
- Develop a site layout map

This report documents the results of the PA/SI conducted at the Gulf States facility during the week of April 21, 2003. All sampling was conducted by personnel from EPA's Science and Ecosystem Support Division (SESD) (Refs. 1; 2). Information reviewed for the PA/SI was gathered from the Mississippi Department of Environmental Quality (MDEQ) and from the EPA Region 4 CERCLA files.

2.0 SITE BACKGROUND

This section describes the facility, its present and past operations (including waste disposal practices and regulatory history), previous investigations, and potential source areas located at the facility.

2.1 SITE DESCRIPTION AND ENVIRONMENTAL SETTING

The former 141-acre Gulf States Creosoting Company is located at 1625 Flowood Drive (Mississippi Hwy 468), Flowood, Rankin County, Mississippi (Refs. 3; 4, p. v; 5, pp. 1-4). The geographic coordinates of the facility are 32°18'43.8" north latitude and 90°58'38.3" west longitude (Ref 6). The facility is currently operating as a horse farm and as ConSteel Co, Inc.(ConSteel). Both current operations appear to be located on portions of the property where creosoting operations were conducted (Ref. 11). Currently, the southernmost building on the property is owned by ConSteel. The northernmost structures (i.e. metal barn and shed) are used to house tractors and helicopters for a local news station and are part of the horse farm. The horse farm has been operating on the property for approximately 7 years. The facility is bound by railroad tracks to the north and east, an adjacent business to the south, and marshland/tributary of the Pearl River to the west. The facility is bound by natural barriers and is not fenced (Refs. 3; 5). The facility lies within an area comprised of mixed industrial, commercial, and residential uses (Ref. 3).

The climate of Rankin County is characterized by long, hot summers and mild winters. Moist tropical air from the Gulf of Mexico has a moderating influence on maximum temperatures in summer (Ref. 7, p. 1). Normal annual total precipitation for Rankin County is approximately 55 inches, and the mean annual lake evaporation is 44 inches, yielding a net annual precipitation of 10 inches (Ref. 8). The 2-year, 24-hour rainfall is 4.5 inches (Ref. 9).

2.2 SITE OPERATIONS AND REGULATORY HISTORY

Gulf States owned the property as early as 1929 (Ref. 10, p. 11). Gulf States operated as a wood treating facility until the mid 1950s (Ref. 5, pp. 2, 3). In July 1958, American Creosoting Corporation obtained portions of the property (Ref. 10, pp. 7-11). In June 1959, W.G. Avery Body Company obtained portions of the property and operated a body shop on the property (Ref. 4, Deeds, p. 6). There are several tracts of

land on the Gulf States property. The horse farm is owned and operated by Mr. Jim Webb; Webb owns the portion of the property just north of the main entrance to the property. ConSteel owns a portion of the property due south of the main entrance. ConSteel appears to be operating on the portion of the property that it owns. The onsite levee is owned by the Levee Board - which is a joint venture between the state and Rankin County. Mr. John McGowan owns the marsh area due west of the levee. McGowan has plans of developing the marsh areas as residential subdivisions (Ref. 30).

During Gulf States operations, railroad cross ties were treated at the facility with coal-tar creosote and transported on and off-site by means of railroad box cars (Refs. 5, p. 2; 11). Creosote is typically applied to the wood by commercial pressure treatment or by home and farm dipping (Ref. 12, p. 69). Creosote is a wood preservative used to treat railroad ties, telephone poles, marine pilings, and fence posts (Ref. 12, pp. 1, 2).

A Phase I investigation of the property in July 1993 included a review of the MDEQ Underground Storage Tank (UST) division records. No past UST usage on the property was found during the review (Ref. 4, p. xii). No other environmental permits have been identified for the facility.

2.3 PREVIOUS RELEASES AND INVESTIGATIONS

In June 1993, BCM Engineers, Inc. (BCM) conducted a Phase I Environmental Assessment (Phase I) of the former Gulf States property on behalf of Trustmark National Bank. The objective of the Phase I was to identify adverse environmental conditions, suspect activities, and potential hazardous wastes or materials on or in the vicinity of the subject property. The Phase I included the collection of soil samples from soil borings ranging in depth from 0 to 8 feet below ground surface (bgs). The seven soil borings were concentrated in the suspected location of the former creosote operations. Of the seven borings, five samples were collected and analyzed for semi-volatile organic compounds (SVOC). Constituents detected in the soil samples were napthalene, 2-methylnapthalene, dibenzofuran, fluorene, phenanthrene, and fluoranthene. The concentrations ranged from below the detection limit to 604 milligrams per kilogram (mg/kg) (Ref. 4).

In August 1993, BCM conducted a Phase II Environmental Assessment of the former Gulf States property. The objective of the Phase II was to delineate the extent of the creosote contaminated soil identified during

the Phase I investigation. During the Phase II, several soil borings were advanced and five soil samples were collected for SVOC laboratory analysis. The soil borings ranged in depth from 0 to 8 feet bgs. Sample results indicated the presence of 2-methylnapthalene, naphthalene, dibenzofuran, phenanthrene, fluoranthene, pyrene, and chrysene. Constituents ranged from below the detection limit to 1,057 mg/kg. The data were compared to health-based criteria for exposure via groundwater ingestion. Based on such a comparison, the recommendation for no further action was presented because the soil contaminants were below the target cleanup levels (Ref. 13).

2.4 POTENTIAL SOURCE AREAS

The source considered for the purpose of this PA/SI is contaminated soil.

3.0 PA/SI ACTIVITIES

This section outlines field observations and sampling procedures at the sampling locations. Individual subsections address the sampling investigation and rationale for specific PA/SI activities. The PA/SI was conducted in accordance with the EPA Quality Assurance Project Plan (QAPP) for the Gulf States facility (Ref. 2). The QAPP was prepared by SESD and includes the sample recommendations submitted by START-2 (Refs. 2; 14). The only deviation from the sampling plan involved the addition of a control sample along Prairie Branch in order to attribute contamination to another source upstream of the Gulf States property (Ref. 5, p.11).

3.1 SAMPLE COLLECTION METHODOLOGY AND PROCEDURES

SESD personnel collected 24 surface soil samples, 20 subsurface soil samples, four groundwater samples, and five sediment samples on or near the Gulf States property during the week of April 21, 2003 (Ref. 5). Sample locations are depicted on Figure 1 in Reference 1, Appendix A and are summarized in Tables 1 through 4 of this report.

SESD personnel collected the surface soil samples from 0 to 6 inches below ground surface (bgs), and subsurface soil samples were collected from 2 to 3 feet bgs; two of the subsurface soil samples were collected between 6 and 12 inches. SESD personnel followed sample collection procedures outlined in the EPA Region 4 SESD, *Environmental Investigation Standard Operating Procedures and Quality Assurance Manual* (EISOPQAM) and the *Analytical Support Branch Operations and Quality Control Manual* (November 2001).

TABLE 1

SURFACE SOIL SAMPLING LOCATIONS AND RATIONALE

Sample Number	Location	Rationale
GS-01-SS	Background; from Jackson Prep School (3100 Lakeland Dr.) located northeast of the property	Background soil sample for comparison to on-site sample results
GS-02-SS	North-central portion of the property	Determine presence or absence of hazardous substances
GS-03-SS	Depression located on the west-central portion of the property, west of the levee	Determine presence or absence of hazardous substances
GS-04-SS	Southwestern portion of the property	Determine presence or absence of hazardous substances
GS-05-SS	Southeastern portion of the property	Determine presence or absence of hazardous substances
GS-06-SS	Southwestern portion of the property	Determine presence or absence of hazardous substances
GS-07-SS	Southeastern portion of the property	Determine presence or absence of hazardous substances
GS-08-SS	Southeastern portion of the property	Determine presence or absence of hazardous substances
GS-09-SS	Southwestern portion of the property	Determine presence or absence of hazardous substances
GS-10-SS	Southeastern portion of the property near the existing ConSteel building	Determine presence or absence of hazardous substances
GS-11-SS	Central portion of the property from the barren area west of the ConSteel building	Determine presence or absence of hazardous substances
GS-12-SS	Western portion of the property, west of the levee	Determine presence or absence of hazardous substances
GS-13-SS	Central portion of the property south of the barn	Determine presence or absence of hazardous substances

TABLE 1 (Continued)

SURFACE SOIL SAMPLING LOCATIONS AND RATIONALE

Sample Number	Location	Rationale
GS-14-SS	Central portion of the property west of the barn	Determine presence or absence of hazardous substances
GS-15-SS	East-central portion of the property	Determine presence or absence of hazardous substances
GS-16-SS	Northeastern portion of the property	Determine presence or absence of hazardous substances
GS-17-SS	Northeastern portion of the property	Determine presence or absence of hazardous substances
GS-18-SS	Northeastern portion of the property	Determine presence or absence of hazardous substances
GS-19-SS	North-central portion of the property	Determine presence or absence of hazardous substances
GS-20-SS	North-central portion of the property	Determine presence or absence of hazardous substances
GS-20-SD	North-central portion of the property; duplicate of GS-20-SS	Determine presence or absence of hazardous substances
GS-21-SS	Northwestern portion of the property	Determine presence or absence of hazardous substances
GS-22-SS	Northern portion of the on-site drainage ditch	Determine presence or absence of hazardous substances
GS-23-SS	Central portion of the on-site drainage ditch	Determine presence or absence of hazardous substances
GS-24-SS	Southern portion of drainage ditch near fenced area	Determine presence or absence of hazardous substances

Notes: GS Gulf States Creosoting Company SD - Duplicate surface soil sample
SS Surface soil sample
Surface soil samples were collected from 0 to 6 inches below ground surface (bgs)

TABLE 2

SUBSURFACE SOIL SAMPLING LOCATIONS AND RATIONALE

Sample Number	Location	Rationale
GS-01-SB	Background; from Jackson Prep School (3100 Lakeland Dr.) located northeast of the property	Background soil sample for comparison to on-site sample results
GS-02-SB	North-central portion of the property	Determine presence or absence of hazardous substances
GS-03-SB	Depression located on the west-central portion of the property, west of the levee	Determine presence or absence of hazardous substances
GS-04-SB	Southwestern portion of the property	Determine presence or absence of hazardous substances
GS-05-SB	Southeastern portion of the property	Determine presence or absence of hazardous substances
GS-06-SB	Southwestern portion of the property	Determine presence or absence of hazardous substances
GS-07-SB	Southeastern portion of the property	Determine presence or absence of hazardous substances
GS-08-SB	Southeastern portion of the property	Determine presence or absence of hazardous substances
GS-09-SB	Southwestern portion of the property	Determine presence or absence of hazardous substances
GS-10-SB*	Southeastern portion of the property near the existing ConSteel building	Determine presence or absence of hazardous substances
GS-11-SB	Central portion of the property from the barren area west of the ConSteel building	Determine presence or absence of hazardous substances
GS-12-SB	Western portion of the property, west of the levee	Determine presence or absence of hazardous substances
GS-13-SB*	Central portion of the property south of the barn	Determine presence or absence of hazardous substances

TABLE 2 (Continued)

SUBSURFACE SOIL SAMPLING LOCATIONS AND RATIONALE

Sample Number	Location	Rationale
GS-14-SB	Central portion of the property west of the barn	Determine presence or absence of hazardous substances
GS-15-SB	East-central portion of the property	Determine presence or absence of hazardous substances
GS-16-SB	Northeastern portion of the property	Determine presence or absence of hazardous substances
GS-17-SB	Northeastern portion of the property	Determine presence or absence of hazardous substances
GS-18-SB	Northeastern portion of the property	Determine presence or absence of hazardous substances
GS-19-SB	North-central portion of the property	Determine presence or absence of hazardous substances
GS-20-SB	North-central portion of the property	Determine presence or absence of hazardous substances
GS-21-SB	Northwestern portion of the property	Determine presence or absence of hazardous substances

Notes: GS Gulf States Creosoting Company
SB Subsurface soil sample
* Sample collected from 6 inches to 1 foot bgs.
Subsurface soil samples were collected from 2 to 3 feet bgs, except as noted.

TABLE 3

GROUNDWATER SAMPLING LOCATIONS AND RATIONALE

Sample Number	Location	Rationale
GS-01-GW	Background; from Jackson Prep School (3100 Lakeland Dr.) located northeast of the property	Background groundwater sample for comparison to on-site sample results
GS-02-GW	North-central portion of the property	Determine presence or absence of hazardous substances
GS-03-GW	Depression located on the west-central portion of the property, west of the levee	Determine presence or absence of hazardous substances
GS-04-GW	Southwestern portion of the property	Determine presence or absence of hazardous substances
GS-05-GW	Southeastern portion of the property	Determine presence or absence of hazardous substances

Notes: GS Gulf States Creosoting Company
GW Groundwater sample

TABLE 4

SEDIMENT SAMPLING LOCATIONS AND RATIONALE

Sample Number	Location	Rationale
GS-01-SD	Background; from tributary to Pearl River accessed from Jackson Prep School (3100 Lakeland Dr.) located northeast of the property	Background sediment sample for comparison to downstream marsh sample results
GS-02-SD	Northern portion of tributary to the Pearl River; area north of gated dirt road leading to the tributaries	Determine presence or absence of hazardous substances in the marsh
GS-03-SD	Southern portion of tributary to the Pearl River; area south of gated dirt road leading to the tributaries	Determine presence or absence of hazardous substances in the marsh
GS-04-SD	Half-way to the Pearl River along the southern portion of the tributary to the Pearl River	Determine presence or absence of hazardous substances in the marsh
GS-05-SD	Confluence of the southern tributary to the Pearl River and its tributary	Determine presence or absence of hazardous substances in the marsh
GS-06-SD	Control from Pearl River; approximately 1/8 mile upstream of confluence of Pearl River and Prairie Branch	Control sample for comparison to on-site sample results
GS-07-SD	Pearl River, downstream of the confluence of the tributary adjacent to Gulf States Creosoting and the Pearl River	Determine presence or absence of hazardous substances
GS-08-SD	Prairie Branch	Control sample for comparison to on-site sample results

Notes: GS Gulf States Creosoting Company
SD Sediment sample

3.2 ANALYTICAL SUPPORT AND METHODOLOGY

All samples collected during the PA/SI were analyzed through the EPA Contract Laboratory Program (CLP). The laboratories analyzed for EPA Target Compound List (TCL) volatile organic compounds (VOC), extractable semivolatile organic compounds (SVOC), pesticides, and polychlorinated biphenyls (PCB). Certain samples were analyzed for specific SVOC concentrations at lower concentrations than the standard levels of analysis under the CLP. The samples were also analyzed for Target Analyte List (TAL) inorganic substances (metals) and cyanide. EPA Region 4 SESD reviewed all data for compliance with the terms of the CLP.

3.3 ANALYTICAL DATA QUALITY AND DATA QUALIFIERS

All analytical data were subject to a quality assurance review as described in the EPA SESD laboratory data evaluation guidelines. The text and analytical data tables presented in this report show some concentrations of organic and inorganic parameters as qualified with a "J," indicating that the qualitative analysis was acceptable; however, the quantitative value has been estimated. Other compounds may have been qualified with an "N," indicating that they were detected based on the presumptive evidence of their presence. This means that the compound was only tentatively identified, and its detection cannot be considered a positive indication of its presence. Some sample results are reported with a "U" qualifier, meaning that the material was analyzed for but not detected. The reported number is the laboratory-derived sample quantitation limit (SQL) for the constituent in that sample. At times, miscellaneous organic compounds that do not appear on the TCL are reported with the data set. These constituents are qualified as "JN," indicating that they are tentatively identified at estimated quantities. Because these constituents are not routinely analyzed for or reported, background levels of SQLs are not generally available for comparison. Some compounds are qualified with an "R" which indicates the QC evaluation has determined the concentration of the compound is unusable. Compounds qualified with a "C" have been confirmed by gas chromatograph or mass spectrometry. The complete analytical data sheets are presented in Reference 1.

4.0 SOURCE SAMPLING

This section discusses the source area evaluated at the facility and the sampling locations and analytical results of samples collected from the Gulf States property. The source area at the Gulf States property evaluated in this PA/SI is contaminated soil.

Surface soil and subsurface soil sampling locations are depicted on the sample location map in Reference 1, Appendix A and described in Tables 1 and 2. Surface soil inorganic and organic analytical results are summarized in Tables 5 and 6, respectively, and subsurface soil inorganic and organic analytical sampling results are summarized in Tables 7 and 8, respectively. Tables 5 through 8 are presented following Section 6.0. Elevated concentrations of constituents are shaded in the tables. The concentration of a constituent is considered to be elevated if the concentration is greater than or equal to three times the concentration detected in the background or control sample. In the case where a constituent is undetected in the background or control sample, any concentration equal to or greater than the SQL is considered to be elevated. The summary analytical data tables are presented as Appendix A.

The following discussion of hazardous constituents detected at elevated levels in soil samples collected at the facility includes only those hazardous constituents that are associated with site operations and those hazardous constituents that may pose a threat to human health or the environment.

4.1 SOURCE SAMPLING LOCATIONS AND ANALYTICAL RESULTS

SESD personnel collected 24 surface soil samples and 20 subsurface soil samples (including a duplicate sample) from various locations on the Gulf States property. One background surface soil sample (GS-01-SS) and one background subsurface soil sample (GS-01-SB) were collected from a location northeast of the facility. The background samples were collected from Jackson Preparatory School at 3100 Lakeland Drive. Locations for surface and subsurface soil samples collected on-site are presented in Tables 1 and 2 of this report, and in Reference 1, Appendix A, Figure 1.

Soil data is compared to background samples and is considered elevated if the compound is three times the background concentration. In the case where a constituent is undetected in the background sample, any

concentration equal to or greater than the SQL is considered to be elevated. Specific findings regarding sample results are summarized below and presented in Tables 5 through 8.

Surface Soil

- SVOCs were detected at elevated concentrations in eleven of the twenty-three on-site surface soil samples. Constituents detected include acenaphthylene, anthracene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzo-a-pyrene, carbazole, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene. Elevated constituent concentrations ranged from 380J micrograms per kilogram (µg/kg) to 12,000J µg/kg. The majority of SVOC constituents were detected in surface soil samples GS-05-SS, GS-07-SS, GS-08-SS, GS-10-SS, GS-11-SS, GS-14-SS, GS-15-SS, GS-16-SS, GS-17-SS, GS-23-SS, and GS-24-SS which are located on the northeastern, central, and southeastern portions of the property. Areas of contamination are located where boxcars containing wood treated with creosote were stored on the railroad tracks (Refs. 1, Appendix A, Figure 1; 11).

- Endrin, endrin aldehyde, endrin ketone, and 4,4'-DDT were the only pesticides detected at elevated concentrations in the surface soil samples collected. Pesticide concentrations ranged from 6.4J µg/kg to 150 µg/kg. Pesticides were detected at elevated concentrations in eight of the twenty-three on-site surface soil samples.

- PCBs were not detected in the on-site surface soil samples.

- Methyl ethyl ketone (MEK) is the only volatile organic compounds (VOC) detected at an elevated concentration in the surface soil samples. MEK concentrations in samples GS-02-SS, GS-11-SS, GS-12-SS, GS-15-SS, GS-17-SS, GS-18-SS, GS-19-SS, GS-20-SD, GS-21-SS, and GS-23-SS ranged from 12µg/kg to 31J µg/kg. MEK is a common laboratory contaminant, and cannot be directly attributed to the processes at the facility.

- Inorganic constituents detected at elevated concentrations in on-site surface soil samples include antimony, barium, beryllium, cadmium, copper, lead, manganese, and zinc. Elevated constituent

concentrations ranged from 0.09 milligrams per kilogram (mg/kg) to 5,500 mg/kg. Samples containing elevated levels of one or more constituent include GS-02-SS, GS-03-SS, GS-08-SS, GS-10-SS, GS-11-SS, GS-13-SS, GS-14-SS, GS-15-SS, GS-19-SS, GS-20-SS, GS-21-SS, and GS-24-SS.

Subsurface Soil

- Extractable SVOCs were detected at elevated concentrations in four of the twenty on-site surface soil samples. Constituents detected include acenaphthylene, anthracene, benzo(a) anthracene, benzo(b) fluoranthene, benzo(g,h,i) perylene, benzo(k) fluoranthene, benzo-a-pyrene, bis(2-ethylhexyl) phthalate, carbazole, chrysene, dibenzo(a,h) anthracene, fluoranthene, indeno(1,2,3-cd) pyrene, phenanthrene, and pyrene. Elevated constituent concentrations ranged from 420J µg/kg to 37,000 µg/kg. Elevated constituents were detected in samples GS-05-SB, GS-08-SB, GS-10-SB, GS-14-SB located along the central and southeastern portion of the property.

- The pesticides 4,4'-DDE and 4,4'-DDT were detected in subsurface soil samples GS-13-SB (6.9 µg/kg) and GS-14-SB (16J µg/kg), respectively.

- PCB-1260 was detected in subsurface soil sample GS-18-SB at 42J µg/kg.

- Acetone and MEK were the only VOCs detected at elevated concentrations ranging from 11J µg/kg to 99J µg/kg in samples GS-08-SB, GS-10-SB, GS-14-SB, and GS-15-SB. Both constituents are common laboratory contaminants that cannot be directly attributed to the processes at the facility.

- The majority of elevated inorganic constituents were detected in subsurface soil sample GS-10-SB. Barium, beryllium, cadmium, cobalt, copper, lead, magnesium, nickel, and zinc were detected at concentrations ranging from 0.87 mg/kg to 2,400J mg/kg in this sample. Elevated constituents detected in samples GS-14-SB, GS-15-SB, and GS-19-SB include lead (27 mg/kg), manganese (600 mg/kg to 1,000 mg/kg), and selenium (2.3 J mg/kg).

Several unknown and miscellaneous compounds were detected in surface and subsurface soil samples as detailed in Appendix A.

4.2 SOURCE CONCLUSIONS

Based on the analytical results for samples collected during the PA/SI, surficial soil contamination is present at the Gulf States property. Inorganic constituents detected at elevated concentrations include antimony, barium, beryllium, cadmium, cobalt, copper, lead, manganese, nickel, and zinc. Organic constituents detected at elevated levels include, but are not limited to, acenaphthylene, anthracene, benzo(a) anthracene, benzo(b) fluoranthene, benzo(g,h,i) perylene, benzo(k) fluoranthene, benzo-a-pyrene, bis(2-ethylhexyl) phthalate, carbazole, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene. The presence of the aforementioned polynuclear aromatic hydrocarbons (PAHs) are common constituents in creosote wood-treating operations. Site processes involved treating wood with creosote, a wood preservative comprised of PAHs, phenol, and cresols (Ref. 12, pp. 1, 67).

5.0 PATHWAYS

This section discusses the groundwater migration, surface water migration, soil exposure, and air migration pathways. Additionally, this section discusses the targets associated with each pathway and draws pathway-specific conclusions. Sampling locations and analytical results for samples collected from the specific pathways are also discussed.

5.1 GROUNDWATER MIGRATION PATHWAY

Four groundwater samples and one background groundwater sample were collected during the PA/SI. Groundwater sampling locations are depicted on the Sample Location Map found in Reference 1 Appendix A and are described in Table 3. Field parameters and inorganic and organic analytical results for groundwater samples are summarized in Tables 9, 10, and 11, respectively, located in Appendix A of this report following Section 6.0.

5.1.1 Geologic and Hydrogeologic Setting

The property is located entirely within the East Gulf Coastal Plain province of North America and, more specifically, within the Jackson Prairie Belt physiographic province (Refs. 7, p. 2; 15, p. 269; 16, p. 23). The property is located along the western border of Rankin County, northeast of Jackson, and east of the Pearl River (Ref. 3). The topography of Rankin County ranges from gently rolling to steep with elevations ranging from 612 feet above mean sea level (amsl) to 220 feet amsl, the property is located at approximately 265 feet amsl (Refs. 3; 7, p. 3). The soil that directly underlies the property is comprised of the Cascilla-Arkabutla soil group which is classified as nearly level, well-drained and somewhat poorly drained, silty soil. These soils typically occur along the flood plains of the Pearl River and its tributaries. The nearly linear flood plain surface within the vicinity of the property is irregularly broken by old river runs, natural levees, sloughs, chutes, and scarps. The slope of the soils ranges from 0 to 2 percent and the average thickness of the soil is approximately 40 feet (Refs. 7, p. 8; 17, p. 32). The property is underlain in descending stratigraphic order by the Cockfield Formation, the Cook Mountain Formation, the Kosciusko Formation (also known as the Sparta Sand), the Zilpha and Winona Formations, the Tallahatta formation, and the Wilcox Group (Ref. 18).

The Claiborne Group consists of the Cockfield Formation, the Cook Mountain Formation, the Kosciusko Formation, the Zilpha and Winona Formations, and the Tallahatta formation (Ref. 18). The Cockfield Formation consists of irregularly bedded laminated lignitic clay, sand, and lignite that is slightly glauconitic (Ref. 18). Based on drillers' logs, the top of the Cockfield is located at approximately 40 feet below ground surface (bgs) and is approximately 133 feet thick in the vicinity of the property (Ref. 19). The Cook Mountain Formation underlies the Cockfield and consists of marl, limestone, glauconitic sand, and chocolate colored clay (Ref. 18). The Sparta Sand (Kosciusko Formation) consists of an irregularly bedded sand with clay and some quartzite. The Sparta Sand is approximately 300 feet thick in the area, but can reach a thickness in excess of 800 feet in southwestern Hinds County (Ref. 16, p. 15). The Zilpha and Winona Formations underlie the Sparta Sand and consist of a chocolate colored clay that contains glauconitic sand and a highly glauconitic more or less clayey sand, respectively (Ref. 18). The Zilpha Formation ranges in thickness from 200 feet on the Jackson Dome to 420 feet in the southwestern portion of Rankin County. The Winona Formation ranges from 10 to 15 feet thick over the Jackson Dome to up to 65 feet thick in other

portions of the county (Ref. 16, p. 190). The Tallahatta Formation underlies the Winona Formation and consists of predominately glauconitic claystone and clay with lenses of sand and some sandstone (Ref. 18). The Wilcox Group underlies the Claiborne Group and consists of irregularly bedded fine to coarse sand, more or less lignitic clay and lignite (Ref. 18). The Wilcox Group varies in thickness from 1,100 feet to 1,300 feet over the Jackson Dome, and attains a thickness of 2,830 feet in southern Rankin County (Ref. 16, p. 188).

Three aquifers are available for the development of moderate to large groundwater supplies in the vicinity of the property. The aquifers in descending stratigraphic order, are the Cockfield Formation, the Sparta Sand, and the Wilcox Group. All of these aquifers are part of the Eocene aquifer system in Mississippi and extend to the west, southwest, and south, and contain freshwater in approximately 50 percent of the State. All of the aquifers are regional in extent and all except the Cockfield and the lower Wilcox merge northward into a single aquifer south of Memphis, Tennessee (Ref. 15, p. 274). The formations dip southwest at approximately 15 to 25 feet per mile toward the Mississippi Embayment and the Mississippi River, and the groundwater flow generally follows this regional trend (Ref. 17, p. 4). Within the geologic column, the water-bearing sand beds are interbedded with shale of both marine and continental origin, fossiliferous limestone, and calcareous sandstone. Strata that were deposited by marine origin generally consist of clay, and they form aquicludes (or confining layers) between the water-bearing sands. The aquicludes are widespread and more uniform in thickness than the aquifers (Ref. 17, p. 4).

The Cockfield Formation is the source of more than half of the municipal water supply in the area, mainly because it is the most shallow aquifer in the area (Ref. 17, pp. 1, 32). The top of the formation is located beneath the alluvial soil deposits at approximately 40 feet bgs in the vicinity of the property, ranges from 80 to 140 feet thick, and is unconfined (Refs. 17, p. 32; 19). Municipal water supplies for several small towns are obtained from the Cockfield, some wells yielding as much as 500 gallons per minute (gpm) (Ref. 17, p. 1). The hydraulic conductivity of the Cockfield is approximately $1x10^{-2}$ centimeters per second (cm/s) (Ref. 20, p. 29). The Cook Mountain Formation underlies the Cockfield aquifer and consists of marl, limestone, glauconitic sand, and chocolate colored clay (Ref. 18). The Cook Mountain Formation was deposited in a marine environment, exhibits a high clay content, and serves as a confining layer between the overlying

Cockfield Formation and the underlying Sparta Sand (Ref. 17, p. 4).

The Sparta Sand underlies the Cook Mountain Formation in the vicinity of the property and is approximately 300 feet thick in the area, but can reach a thickness in excess of 800 feet in southwestern Hinds County. The Sparta Sand is the most intensively developed aquifer in the vicinity of the property. The Sparta exhibits a hydraulic conductivity of approximately $1x10^{-2}$ cm/s (Refs. 17, pp. 15, 32; 20, p. 29).

The Zilpha and Winona Formations underlie the Sparta Sand and consist of a chocolate colored clay that contains glauconitic sand and a highly glauconitic more or less clayey sand, respectively (Ref. 18). Due to the high clay content and marine origin of these formations, they serve as the lower confining layer for the Sparta Sand and the upper confining layer for the Wilcox Group in the vicinity of the property. These formations underlie the area at depths that range from 650 feet in northeastern Madison County to 2,600 feet in southwestern Hinds County. The depth of the formations throughout the remainder of the study area ranges from 420 to 570 feet (Ref. 17, p. 15).

The Wilcox Group contains a large reserve of soft water that has been tapped by only a few small-supply wells. The water is more highly mineralized and is warmer than that in the more shallow aquifers. The water in the aquifer is of good quality in Madison and northern Rankin Counties, but the quality deteriorates down the dip in Hinds County (Ref. 17, p. 1). In counties to the northeast, the results of several pumping tests indicate that the sands in the Wilcox aquifer are probably as permeable as the Sparta Sand (Ref. 17, p. 15).

5.1.2 Groundwater Sampling Locations and Analytical Results

SESD personnel collected four groundwater samples from temporary monitoring wells installed on the Gulf States property. The background groundwater sample was collected from the Jackson Preparatory School at 3100 Lakeland Drive located northeast of the facility. Locations for the groundwater samples are detailed in Table 3 and depicted in Reference 1, Appendix A, Figure 1. Within this report, Appendix A, Table 9 lists the field parameters for the groundwater samples. Sample results are summarized in Tables 10 and 11 located in Appendix A of this report.

- Inorganic constituents detected at elevated concentrations when compared to background concentrations

include aluminum, barium, cobalt, magnesium, manganese, vanadium, and zinc. Concentrations of inorganic constituents ranged from 1.9 micrograms per liter (µg/L) to 8,200 µg/L. Barium, cobalt, magnesium, manganese, and zinc were also detected at elevated concentrations in on-site soil samples and can therefore be attributed to the site.

- MEK is the only organic compound detected at an elevated concentration in GS-04-GW at 7.2 J µg/L.
- No SVOCs, pesticides, or PCBs were detected in any of the groundwater samples.

5.1.3 Groundwater Targets

During the June 1993 Phase I investigation at the property, substances detected in groundwater samples collected from a temporary monitoring well included 2,4-dimethylphenol, naphthalene, dibenzofuran, fluorene, phenanthrene, fluoranthene, and pyrene at concentrations ranging from 79 micrograms per liter (µg/L) to 1,279 µg/L (Ref. 4, p. 26).

The majority of local residents obtain drinking water from the City of Flowood Water Department (CFWD). The CFWD obtains its drinking water from six wells screened in the Cockfield Formation and the Sparta Sand aquifers, which have depths ranging from 562 feet to 1,185 feet. Water from the wells is blended prior to distribution within the system. CFWD serves approximately 5,400 connections (Ref. 21). According to the 2000 Census, there are 2.62 people per household in Rankin County (Ref. 22). Based on the number of service connections and the number of people per household, CFWD serves approximately 14,148 people (2.62 people per household x 5,400 connections with an average of 2,358 people served per well) (Refs. 21; 22). The CFWD well distribution is as follows: 0 to 0.25 mile: 0 wells; 0.25 to 0.50 mile: 0 wells; 0.50 to 1 mile: 1 well; 1 to 2 miles: 0 wells; 2 to 3 miles: 1 well; 3 to 4 miles: 1 well. Therefore, the CFWD population distribution is as follows: 0 to 0.25 mile, 0 persons; 0.25 to 0.50 mile, 0 persons; 0.50 to 1 mile, 2,358 persons; 1 to 2 miles, 0 persons; 2 to 3 miles, 2,358 persons; 3 to 4 miles, 2,358 persons (Refs. 3; 21; 22). No private wells were identified in the surrounding neighborhoods during the June 2002 site reconnaissance (Ref. 5, p. 11).

5.1.4 Groundwater Conclusions

The only site-attributable constituents detected in the groundwater samples collected from the surficial aquifer during the PA/SI were barium, cobalt, manganese, and zinc. The majority of people in the area receive their drinking water from the City of Flowood Water Department. CFWD's wells are screened in the Cockfield Formation and the Sparta aquifers below a confining layer. Due to the small number of people served water by the CFWD and the fact that the municipal wells are screened at depths greater than 550 feet, the groundwater pathway does not appear to be a viable migration route.

5.2 SURFACE WATER MIGRATION PATHWAY

Six sediment samples were collected during the PA/SI to document the migration of on-site contaminants into the marsh located west of the Gulf States property, and the Pearl River (Ref. 3).

5.2.1 Hydrologic Setting

Currently, a levee separates the Gulf States property from the marsh area located west of the property (Refs. 3; 5, pp. 7, 8). The construction date of the levee is unknown, however, the levee was in existence in 1955 (Ref. 4, p. vii). The surface water migration pathway prior to the construction of the levee, appears to have flowed west toward the marsh and the tributaries which flow into the Pearl River (Ref. 3). There is a drainage ditch on the western portion of the property which flows north to south. The drainage ditch is located to the east of the levee (Ref. 5, pp. 7, 8). Currently, it appears that the on-site drainage flows into this drainage ditch. Prior to the construction of the levee, it appears that creosote was discharged to the marsh areas west of the property, and these areas have been defined as creosote slough by the U.S. Geological Survey (Refs. 3; 5, p. 4). During the operation of the facility, the Pearl River was re-channeled to flow further to the west of the facility and the creosote slough areas (Refs. 3; 11). The surface water pathway includes the marshland and tributaries which flow approximately 0.8 mile to the Pearl River. The 15-mile downstream surface water pathway is completed in the Pearl River which flows at an average rate of 759 cubic feet per second (Refs. 3;23). The property itself is within a flood area that is undefined, perhaps due to the construction of the levee. However, the marsh area adjacent to the facility is within the 100-year flood plain (Ref. 24). A City of Jackson surface water intake is located approximately 0.75-mile northwest

of the Gulf States property on the Pearl River (Ref. 5, p. 4).

5.2.2 Sediment Sampling Locations and Analytical Results

SESD personnel collected five sediment samples from the marsh adjacent to the Gulf States property and the Pearl River. Two background sediment samples (one from the Pearl River and one from a marsh) and one control sediment sample were collected for comparison to the downstream samples. The background and control sediment sample locations are detailed in Table 4 and depicted in Reference 1, Appendix A, Figure 1. Specific findings regarding sample results are summarized below and presented in Tables 12 through13.

- Several SVOCs were detected at elevated concentrations in the sediment samples. Such constituents include acenaphthene, acenaphthylene, anthracene, benzo(a) anthracene, benzo(b) fluoranthene, benzo(k) fluoranthene, benzo-a-pyrene, chrysene, dibenzo(a,h) anthracene, fluoranthene, fluorene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene. Constituent concentrations ranged from 2 µg/kg to 560J µg/kg. Elevated constituents were detected in all of the sediment samples collected from the marsh adjacent to the Gulf States property.

- VOCs including acetone, carbon disulfide, and MEK were detected at elevated concentrations in sediment samples GS-03-SD and GS-04-SD.

- The pesticides 4,4'-DDE (7.9 µg/kg) and beta-BHC (12 µg/kg) were detected in sediment sample GS-03-SD and GS-04-SD, respectively.

- Inorganic constituents detected at elevated concentrations in sediment samples are barium, beryllium, lead, and zinc. All four constituents were detected in sample GS-03-SD at concentrations ranging from 1.3 mg/kg to 300 mg/kg. An elevated level of beryllium was also detected in sample GS-04-SD (1.2 mg/kg) .

Several unknown and miscellaneous compounds were detected in the sediment samples as detailed in Appendix A of this report.

5.2.3 Surface Water Targets

Federally endangered or threatened species within the Pearl River are the Ringed map turtle (*Graptemys oculifera*) and the Gopher tortoise (*Gopherus polyphemus*) (Refs. 25, p. 2; 26, pp. 20, 21). Although their exact location is unknown, other endangered/threatened species potentially within the area include the Bayou darter (*Etheostoma rubrum*); Pallid sturgeon (*Scaphirhynchus albus*); Southern combshell (*Epioblasma penita*) (Ref. 26, pp. 23, 30, 31). Approximately 2.5 miles of wetland frontage is present along the Pearl River (Ref. 3). Recreational fishing occurs in both the marsh and Pearl River. Commercial fishing also occurs along the Pearl River (Ref. 5, pp. 3, 4). There is a fish tissue advisory in effect for the Pearl River from Highway 25 near Carthage, downstream to the Leake County Water Park. The advisory recommends limited consumption of largemouth bass and large catfish due to mercury contamination (Ref. 27).

5.2.4 Surface Water Conclusions

Sediment samples collected from the marsh located west of the Gulf States property revealed elevated levels of site-attributable contaminants. The constituents include acenaphthene, acenaphthylene, anthracene, benzo(a) anthracene, benzo(b) fluoranthene, benzo(k) fluoranthene, benzo-a-pyrene, chrysene, dibenzo(a,h) anthracene, fluoranthene, fluorene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene at concentrations ranging from 2 µg/kg to 560J µg/kg. These constituents are common constituents in the composition of creosote and are commonly found at wood treating facilities. Such constituents pose a threat to the marsh and the Pearl River due to the recreational fishing that occurs in these water bodies. Due to the detection of the aforementioned constituents in the nearby surface water bodies, the surface water pathway is a viable migration route for contaminants.

5.3 SOIL EXPOSURE PATHWAY AND AIR MIGRATION PATHWAY

Twenty-three surface soil and 20 subsurface soil samples were collected during the PA/SI at the Gulf States property. Surface and subsurface soil sample results were discussed in Section 4.0.

5.3.1 Physical Conditions

The 141-acre Gulf States property is zoned for heavy industrial use (I-2) (Refs. 5, p. 2; Ref. 13, p. 1). The property currently consists of a horse farm and a company that sells reinforcing steel and wire mesh (Ref. 5, pp. i, 1). The facility is bound by railroad tracks to the north and east, an adjacent business to the south, and marshland/tributary to the Pearl River to the west (Ref. 3; 11). The facility is bound by natural barriers and portions of the facility property are fenced. The fenced portions of the property include the area surrounding the ConSteel building , and the horse grazing area (Ref. 5, p. 8). Access to the entire property is unrestricted.

During the 1993 Phase I conducted at the property, seven soil borings were constructed ranging in depth from 0 to 8 feet bgs. Of the seven borings, five samples were collected and analyzed for PAHs. Constituents detected in the soil samples included napthalene, 2-methylnapthalene, dibenzofuran, fluorene, phenanthrene, and fluoranthene. Organic concentrations ranged from below the detection limit to 604 (mg/kg) (Ref. 4).

5.3.2 Sampling Locations and Analytical Results

Surface and subsurface soil sampling locations and analytical results are discussed under Source Sampling in Section 4.1. No air samples were collected at the facility.

5.3.3 Soil and Air Targets

The facility currently houses a horse farm and the ConSteel Company (Ref. 5, p. 1). The nearest residences are located east of the property across Highway 15 (Ref. 3; 4). There are no schools, daycare facilities, or residences within 200 feet of the property (Refs. 3; 5, p. 11). However, the two businesses on the property are operational and the potentially exposed population includes the workers at these two facilities (Ref. 5, p.1).

According to a LandView® Census Data report and a house count , approximately 805 persons reside within 4 radial miles of the Gulf States property. The estimated population distribution within 4 radial miles of the Gulf States property is as follows: 0 to 0.25 mile, 118 persons; 0.25 to 0.50 mile, 45 persons; 0.50 to 1 mile, 152 persons; 1 to 2 miles, 87 persons; 2 to 3 miles, 44 persons; and 3 to 4 miles, 359 persons (Ref. 28; 29).

Several federal threatened and endangered species are suspected within the vicinity of the Gulf States property. Such species may include the Indiana bat (*Myotis sodalis*). However, their exact locations have not been identified (Ref. 26, p. 2). Approximately 410 acres of wetlands are located within 4 miles of the Gulf States property. The wetlands distribution is as follows: 0 to 0.25 mile, 10 acres; 0.25 to 0.50 mile, 15 acres; 0.50 to 1 mile, 185 acres; 1 to 2 miles, 190 acres; 2 to 3 miles, 10 acres; 3 to 4 miles, 0 acres (Ref. 3).

5.3.4 Soil and Air Conclusions

Elevated constituents were detected in the surface soil samples collected from the property; however, the property is not residential, and has been zoned heavy industrial. Based on the nature of the constituents detected at the property, the potential exposure to employees and local residences via soil or air is considered minimal.

6.0 SUMMARY AND CONCLUSIONS

The former 141-acre Gulf States Creosoting Company is located at 1625 Flowood Drive (Mississippi Hwy 468), Flowood, Rankin County, Mississippi. The facility is currently operating as a horse farm and ConSteel. Both current operations appear to be located on portions of the property where creosoting operations were conducted. Currently, the southernmost building on the property is owned by ConSteel. The northernmost structures (i.e. metal barn and shed) are used to house tractors and helicopters for a local news station, and are part of the horse farm. The horse farm has been operating on the property for approximately 7 years.

Gulf States owned the property as early as 1929 and operated as a wood treating facility until the mid 1950s. In July 1958, American Creosoting Corporation obtained portions of the property and operated there until the late 1950s. In June 1959, W.G. Avery Body Company purchased portions of the property and operated a body shop on the site. There are several tracts of land on the Gulf States property and some are currently occupied. The horse farm tract is owned and operated by Mr. Jim Webb; Webb owns the portion of the property just north of the main entrance to the property. ConSteel owns a portion of the property due south of the main entrance. ConSteel appears to be operating on the portion of the property that it owns. The

onsite levee is owned by the Levee Board - which is a joint venture between the state and Rankin County. Mr. John McGowan owns the marsh area due west of the levee. McGowan has plans of developing the marsh areas as residential subdivisions.

During Gulf States operations, railroad cross ties were treated at the facility and transported on and off-site by means of railroad box cars. Creosote was applied to the wood by commercial pressure treatment or by home and farm dipping. Creosote is a wood preservative used to treat railroad ties, telephone poles, marine pilings, and fence posts.

Based on the analytical results for the samples collected during the PA/SI, soil contamination is present at the Gulf States property. Inorganic constituents detected at elevated concentrations include antimony, barium, beryllium, cadmium, cobalt, copper, lead, manganese, nickel, and zinc. Organic constituents detected at elevated levels include, but are not limited to, acenaphthylene, anthracene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzo-a-pyrene, bis(2-ethylhexyl)phthalate, carbazole, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd) pyrene, phenanthrene, and pyrene. The presence of the aforementioned PAHs are attributable to the site operations.

The only site-attributable constituents detected in the surficial aquifer were barium, cobalt, manganese, and zinc. The majority of people in the area receive their drinking water from the City of Flowood Water Department. CFWD's wells are screened in the Cockfield Formation and the Sparta aquifers beneath a substantial a confining layer. Due to the small number of people served water by the CFWD and the fact that the municipal wells are screened at depths greater than 550 feet, groundwater does not appear to be a viable migration route.

Sediment samples collected from the marsh located west of the Gulf States property exhibited elevated levels of constituents detected in on-site soils and are common constituents used in the wood preserving industry. Such constituents include acenaphthene, acenaphthylene, anthracene, benzo(a) anthracene, benzo(b) fluoranthene, benzo(k) fluoranthene, benzo-a-pyrene, chrysene, dibenzo(a,h) anthracene, fluoranthene, fluorene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene at concentrations ranging from 2 µg/kg to 560J µg/kg. Such constituents pose a threat to both the marsh and the Pearl River because of the

recreational fishing that occurs on these water bodies. Due to the detection of the aforementioned constituents, the surface water pathway is a viable migration route for contamination.

Surface soil contamination is present at the property. However, because the property is primarily industrial and not residential, and the non-volatile nature of the contamination, the exposure to employees and local residences by means of soil or air is considered to be minimal.

Based on the analytical results for the samples collected during the PA/SI, further CERCLA action is recommended for the Gulf States property.

REFERENCES

1. U.S. Environmental Protection Agency (EPA), Science and Ecosystem Support Division (SESD). Sampling Event Report with attachments for the Gulf States Creosoting Company Sampling Event in April 2003. Project No. 03-0474 and 03-0558. July 22, 2003.

2. EPA SESD. Quality Assurance Project Plan for the Preliminary Assessment/Site Inspection of the Gulf States Creosoting Company site. Date unknown.

3. DeLorme. "DeLorme Topo Quads™ - Mississippi."Florence, Mississippi; Jackson, Mississippi; Jackson SE, Mississippi; Whitfield, Mississippi Quad Maps. Datum WGS84. Scale 1:24,000. Advanced Topo Tools Print Kit. 2000.

4. BCM Engineers, Inc. Phase I Environmental Assessment: W.G. Avery and Body Company on behalf of Trustmark National Bank. July 1993.

5. Weston Solutions, Inc. (Weston). Field Logbook (Document Control No. RFW-GSC-0002) for Gulf States Creosoting Company Site Reconnaissance. Work Order No. 12587.001.001.0133. June 3 and 4, 2002.

6. Shanieka Pennamon, Engineering Professional, Weston. Project note to file. Subject: Latitude and Longitude determination for Gulf States Creosoting. September 23, 2003.

7. U.S. Department of Agriculture Conservation Service. *Soil Survey of Rankin County, Mississippi.* 1998.

8. U.S. Department of Commerce (USDC). *Climatic Atlas of the United States.* National Oceanic and Atmospheric Administration. Washington DC. 1983.

9. USDC. *Rainfall Frequency Atlas of the United States.* Washington, DC. 1961.

10. Rankin County, Mississippi. Deed Book.

11. Shanieka Pennamon, Engineering Professional, Weston. Project note to file. Subject: Aerial Photographs for Gulf States Creosoting Company. September 23, 2003.

12. U.S. Department of Health and Human Services. "Toxicological Profile for Creosote." Publication No. TP-90-09. December 1990.

13. BCM Engineers, Inc. Phase II Environmental Assessment: W.G. Avery and Body Company on behalf of Trustmark National Bank. August 1993.

14. Weston. "Sample Recommendations for the Gulf States Creosoting Company Preliminary Assessment/Site Inspection." Document Control Number: WSI-GSC-0005. July 31, 2002.

15. U.S. Geological Survey (USGS). *National Water Summary 1984.* Water Supply Paper 2275. 1984.

16. Mississippi Geological, Economic and Topographical Survey. *Rankin County Geology and Mineral Resources.* Bulletin 115. 1971.

17. USGS. *Groundwater Resources of Hinds, Madison, and Rankin Counties, Mississippi.* State of Mississippi Board of Water Commissioners Bulletin 64-1. April 1964.

18. Mississippi Geologic Survey. Geologic Map of Mississippi. 1969, reprinted 1985.

19. Allen Sistrunk, Driller, Griner Drilling Services. Formation and Test Hole Information for Test Hole No. K68. Formation log for the Town of Flowood, Well No. 5. October 16, 1981.

20. R. Allan Freeze and John A. Cherry. *Groundwater.* Englewood Cliffs, New Jersey. 1979.

21. Garry Miller, Director Public Works, City of Flowood. Letter with attachments to Shanieka Pennamon, Engineering Professional, Weston. Subject: Drinking Water Supply Information. September 11, 2003.

22. U.S. Census Bureau. Rankin County, Mississippi QuickFacts from the US Census Bureau. http://quickfacts.census.gov.

23. USGS. "Water Resources Data, Mississippi - Pearl River at Jackson, MS." Data accessed on-line on September 25, 2003. http://waterdata.usgs.gov.

24. ESRI/FEMA Flood plain information. Flowood, Rankin County, Mississippi. Data accessed on-line on July 22, 2003. http://www.esri.com/hazards.

25. U.S. Fish and Wildlife Service. Endangered and Threatened Species of the Southeastern United States. Atlanta, Georgia. 1992.

26. 50 CFR 17.11 and 17.12. "List of Endangered and Threatened Wildlife." Accessed on-line on December 31, 1999. http://endangered.fws.gov.

27. Mississippi State Health Department. "Mississippi's Fish Tissue Advisories and Commercial Fishing Bans - August 2001." Information obtained from Mississippi Department of Environmental Quality's website - http://www.mdeq.gov.

28. Shanieka Pennamon, Engineering Professional, Weston. Project note to file. Subject: Population within a 4-mile radius of the Gulf States Creosoting Company Site. September 23, 2003.

29. Shanieka Pennamon, Engineering Professional, Weston. Project note to file. Subject: House Count within a 1-mile radius of the Gulf States Creosoting Company Site. September 23, 2003.

30. Shanieka Pennamon, Engineering Professional, Weston. Record of telephone conversation between Richard Ball, Mississippi Department of Environmental Quality. Subject: Current Ownership of the Gulf States Creosoting Company Site. December 12, 2003.

APPENDIX A

ANALYTICAL DATA TABLES

15 Pages

APPENDIX A

ANALYTICAL DATA TABLES

15 Pages

TABLE 5
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Background	On-site Samples										
COMPOUND	UNITS	GS01SS	GS02SS	GS03SS	GS04SS	GS05SS	GS06SS	GS07SS	GS08SS	GS09SS	GS10SS	GS11SS	GS12SS	GS13SS
METALS														
ALUMINUM	MG/KG	4700 J	7800 J	8900 J	4300 J	3100 J	6700 J	2800 J	1800 J	2500	4700 J	4400 J	5500 J	4400 J
ANTIMONY	MG/KG	0.56 UJ	0.64 R	--	--	--	--	--	--	1.2 R	1 R	--	--	0.6 R
ARSENIC	MG/KG	6.3	3.3 J	11	2	13	2	3.6	3.4	0.95 R	6.8	3.7	4.4	6.3
BARIUM	MG/KG	72	120	67	60	37	85	34	21	25	120	54	83	58
BERYLLIUM	MG/KG	0.33	0.94	0.94	0.37	0.3	0.28	0.2	0.19	0.15	0.46	0.44	0.46	0.54
CADMIUM	MG/KG	0.05 U	--	--	--	--	--	--	0.09	--	0.34	0.19	--	0.16 R
CALCIUM	MG/KG	1100	690	790	690	500	1200	810	800	340	2600	660	760	1200
CHROMIUM	MG/KG	8.4	6.1	20	6	7.5	7.7	4.5	4	4.1	23	12	8.9	7.8
COBALT	MG/KG	5.8	17	8.1	1.7	6.6	1.4	2	1.5	0.95	4.8	5.4	7.3	4.2
COPPER	MG/KG	6	2 J	--	--	--	--	--	--	--	19 J	--	--	7.2 J
IRON	MG/KG	10000	8400	27000 J	4500 J	15000 J	5600 J	5400 J	4700 J	2800	14000	11000	11000 J	12000
LEAD	MG/KG	11 J	17	120	18	19	17	11	12	8.8	80	290	25	33
MAGNESIUM	MG/KG	520 J	470 J	680	280	180	550	250	180	160 J	780 J	260 J	380	280 J
MANGANESE	MG/KG	630	2800	550	140	610	170	180	230	28	500	880	990	940
POTASSIUM	MG/KG	380 J	240 J	350	200	120	430	170	150	120 J	560 J	330 J	280	390 J
SELENIUM	MG/KG	1.3	0.93 R	1.9 J	--	--	--	--	--	--	0.98 R	0.77 R	--	1.2
SILVER	MG/KG	0.39 R	0.71 R	0.63	0.26 R	0.43	0.29	--	--	0.28 R	0.49	0.38	0.43	0.33 R
SODUIM	MG/KG	270	300	82 J	120 J	58 J	110	63	--	300	320	200	91	230
VANADIUM	MG/KG	17	15	46	11	18	13	8.1	7.1	6.6	18	16	22	17
ZINC	MG/KG	29	47	34	27	23	35	24	26	19	160	840	28	72

Notes:

GS - Gulf States Creosoting
SS - surface soil sample
MG/KG - milligrams per kilogram
U - value is below the reporting limit
J - estimated value
R - data is unusable
shading - elevated concentrations of constituents

TABLE 5 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Background	On-site Samples											
COMPOUND	UNITS	GS01SS	GS14SS	GS15SS	GS16SS	GS17SS	GS18SS	GS19SS	GS20SS	GS20SD*	GS21SS	GS22SS	GS23SS	GS24SS
METALS														
ALUMINUM	MG/KG	4700 J	4800 J	8000 J	7700 J	9000 J	4900 J	8500 J	6700 J	6100 J	6800 J	4200 J	7500 J	4900 J
ANTIMONY	MG/KG	0.56 UJ	0.69 J	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	MG/KG	6.3	9	6.9	5.5 J	5.5	5.4	6.5	5.8	4.5	2.7	4	5	6.5
BARIUM	MG/KG	72	65	72	50	120	53	89	410	130	88	42	83	120
BERYLLIUM	MG/KG	0.33	0.44	0.71	0.43	0.94	0.35	0.73	1.2	0.76	0.81	0.43	0.5	0.61
CADMIUM	MG/KG	0.05 U	0.11 R	0.1		0.07 R	--	--	0.17	--	--	--	0.1 R	0.16
CALCIUM	MG/KG	1100	1800	2000	1200	2300	890	2000	1700	1400	190	280	960	1600
CHROMIUM	MG/KG	8.4	8.6	11	10	8	9.9	8.3	8.2	7.2	5.6	9.4	12	12
COBALT	MG/KG	5.8	7.3	11	4	12	7.6	13	17	6.8	14	5.5	6.8	6.8
COPPER	MG/KG	6	--	--	--	--	--	--	--	--	--	--	12 J	--
IRON	MG/KG	10000	11000	12000	12000	12000	10000	12000	12000	8800	7300	9700 J	13000	17000 J
LEAD	MG/KG	11 J	24	26	15 J	20 J	15 J	19 J	24 J	22 J	13 J	9.8	24	28
MAGNESIUM	MG/KG	520 J	340 J	430 J	510 J	490 J	340 J	530 J	380 J	410 J	270 J	220	630 J	450
MANGANESE	MG/KG	630	870	1800	240	2500	590	1900	5500	1800	2200	470	920	890
POTASSIUM	MG/KG	380 J	200 J	580 J	490 J	620 J	180 J	550 J	240 J	250 J	250 J	170	480 J	370
SELENIUM	MG/KG	1.3	0.63 R	1.1 R	1.3	1.5 J	1.1	1.2	1.3 J	1.1 R	0.8	--	1.1 R	--
SILVER	MG/KG	0.39 R	0.37	0.5	0.39 R	0.51 R	0.29	0.53 R	0.9 R	0.42	0.52	0.2	0.46 R	0.47
SODUIM	MG/KG	270	300	310	270	280	310	290	290	290	300	--	340	86 J
VANADIUM	MG/KG	17	21	23	22	23	20	22	22	17	13	21	23	26
ZINC	MG/KG	29	44	48	33	65	34	52	88	63	24	19	49	89

Notes:

GS - Gulf States Creosoting
SS - surface soil sample
MG/KG - milligrams per kilogram
U - value is below the reporting limit
J - estimated value
R - data is unusable
shading - elevated concentrations of constituents
* - Sample GS20SD is a duplicate of sample GS20SS.

TABLE 6
SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Background	On-site Samples											
COMPOUND	UNITS	GS01SS	GS02SS	GS03SS	GS04SS	GS05SS	GS06SS	GS07SS	GS08SS	GS09SS	GS10SS	GS11SS	GS12SS	GS13SS
VOLATILES														
ACETONE	UG/KG	100 J	180 J	25 J	28 J	91 J	82 J	87 J	74 J	--	84 J	220 J	--	200 J
METHYL ACETATE	UG/KG	11 U	--	--	--	--	--	--	--	--	--	--	--	--
METHYL ETHYL KETONE	UG/KG	11 U	21	--	--	--	--	--	--	--	--	21 J	14 J	15 J
MISCELLANEOUS VOLATILE ORGANICS														
UNKNOWN COMPOUNDS/NO.	UG/KG	19 J/2	51 J/2	6 J/1	19 J/1	7 J/1	20 J/2	10 J/1	18 J/2		29 J/3	35 J/3	30 J/3	13 J/1
ACETALDEHYDE	UG/KG													16 NJ
BUTANAL	UG/KG												5 NJ	
BUTANAL, 3-METHYL-	UG/KG													
HEXANAL	UG/KG						64 NJ				45 NJ	37 J	18 NJ	
PENTANAL	UG/KG													
PROPANAL, 2-METHYL-	UG/KG													
EXTRACTABLES														
(3-AND/OR 4-)METHYLPHENOL	UG/KG	380 U	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	UG/KG	380 U	--	--	--	--	--	170 J	--	--	97 J	--	--	--
ACENAPHTHYLENE	UG/KG	380 U	--	--	--	120 J	--	320 J	480 J	--	1100	330 J	--	1000 J
ANTHRACENE	UG/KG	380 U	--	--	--	470	--	970	930 J	--	1700	830	--	1600
BENZALDEHYDE	UG/KG	380 U	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	UG/KG	380 U	--	--	--	770	--	2500	1500	--	2800	1000	--	4300
BENZO(B)FLUORANTHENE	UG/KG	380 U	--	--	--	1800 J	--	4800 J	11000 J	--	5200	2500	--	7300 J
BENZO(GHI)PERYLENE	UG/KG	380 U	--	--	--	380 J	--	690	3800	--	1300	480	--	2000
BENZO(K)FLUORANTHENE	UG/KG	380 U	--	--	--	2100 J	--	5200 J	12000 J	--	2300	1700	--	5400 J
BENZO-A-PYRENE	UG/KG	380 U	--	--	--	610	--	2100	3700	--	3100	800	--	3100
1,1-BIPHENYL	UG/KG	380 U	--	--	--	--	--	45 J	--	--	--	--	--	--
CARBAZOLE	UG/KG	380 U	--	--	--	200 J	--	510	190 J	--	480	210 J	--	540 J
CHRYSENE	UG/KG	380 U	--	--	--	1500	--	4900	2300	--	4300	1500	--	6200
DIBENZO(A,H)ANTHRACENE	UG/KG	380 UJ	--	--	--	190 J	--	520	1700	--	750	310 J	--	1100
DIBENZOFURAN	UG/KG	380 U	--	--	--	--	--	240 J	--	--	120 J	140 J	--	--
FLUORANTHENE	UG/KG	380 U	--	--	--	2600	--	8200	2600	--	4700	1800	--	11000
FLUORENE	UG/KG	380 U	--	--	--	--	--	180 J	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	UG/KG	380 UJ	--	--	--	610	--	1100	5000	--	2300	940	--	3100
2-METHYLNAPHTHALENE	UG/KG	380 U	--	--	--	--	--	120 J	--	--	69 J	70 J	--	--
NAPHTHALENE	UG/KG	380 U	--	--	--	--	--	87 J	--	--	110 J	--	--	--
PHENANTHRENE	UG/KG	380 U	--	--	--	320 J	--	4200	610 J	--	1400	540	--	1600
PENTACHLOROPHENOL	UG/KG	970 UJ	--	--	--	--	--	--	--	--	690 J	640 J	--	--
PYRENE	UG/KG	380 U	--	--	--	1500	--	6200	2500	--	5000	1700	--	6800
MISCELLANEOUS EXTRACTABLES:														
UNKNOWN COMPOUNDS/NO	UG/KG	1400 J/12	2200 J/5	91 J/1	2000 J/7	2700 J/11	2800 J/14	5900 J/8	23000 J/17	1900 J/10	4100 J/6	3600 J/12	410 J/3	19000 J/12
STIGMAST-4-EN-3-ONE	UG/KG		190 NJ		350 J		460 NJ							
UNKOWN ALCOHOL	UG/KG				92 J									
UNKNOWN KETONES/NO.	UG/KG				250 J/2									
METHYLANTHRACENE	UG/KG					190 J								
9,10-ANTHRACENEDIONE	UG/KG					260 NJ		890 NJ			660 NJ	260 NJ		890 NJ
PHENANTHRENE, 1-METHYL	UG/KG													1100 NJ
PHENANTHRENE, 2-METHYL	UG/KG													
PHENANTHRENE, 2,3-DIMETHYL	UG/KG					160 NJ		870 NJ						1300 NJ
PHENANTHRENE, 4,5-DIMETHYL	UG/KG							830 NJ						
ANTHRACENE, 2-METHYL	UG/KG							1000 J						
BENZOFLUORENE	UG/KG					160 J			920 J					
11 H-BENZO(A)FLUORENE	UG/KG					470 NJ		740 NJ			2200 NJ			
11 H-BENZO(B)FLUORENE	UG/KG													1100 NJ

TABLE 6 (CONTINUED)
SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Background	On-site Samples											
COMPOUND	UNITS	GS01SS	GS02SS	GS03SS	GS04SS	GS05SS	GS06SS	GS07SS	GS08SS	GS09SS	GS10SS	GS11SS	GS12SS	GS13SS
2,2'-BINAPHTHALENE	UG/KG										560 NJ			560 NJ
1,2:3,4-DIBENZPYRENE	UG/KG													
1,2:4,5-DIBENZPYRENE	UG/KG								880 NJ					
1-DOCOSENE	UG/KG													
1-EICOSANOL	UG/KG													
PENTADECANOIC ACID	UG/KG									97 NJ				
PERYLENE	UG/KG								3900 NJ		1000 NJ			
PYRENE, 1-METHYL	UG/KG								880 NJ		710 NJ	390 NJ		1400 NJ
PYRENE, 2-METHYL	UG/KG					250 NJ		1200 NJ	1000 NJ		1700 NJ			660 NJ
PYRENE, 1,3-DIMETHYL	UG/KG					280 NJ								
PYRENE, 4-METHYL	UG/KG							740 NJ						
BENZ[A]ANTHRACENE, 7-METHYL-	UG/KG													
BENZ(A)ANTHRACENE-7, 12-DIONE	UG/KG							540 NJ				330 NJ		
BENZO[B]NAPHTHO[2,3-D] FURAN	UG/KG													780 NJ
BENZO[B]NAPHTHO[2,1-D] THIOPHENE	UG/KG					380 NJ		670 NJ						
BENZO[J]FLUORANTHENE	UG/KG													
7H-BENZ [DE] ANTHRACEN-7-ONE	UG/KG					310 NJ		850 NJ	910 NJ		1100 NJ	430 NJ		1500 NJ
CARYOPHYLLENE	UG/KG													
CHRYSENE, 1-METHYL	UG/KG								1200 NJ					
CHRYSENE, 5-METHYL	UG/KG							580 NJ						910 NJ
CHRYSENE, 6-METHYL	UG/KG					270 NJ								
CYCLOPENTA(DEF) PHENANTHRENONE	UG/KG										940 NJ	320 NJ		1400 NJ
5,12-NAPHTHACENEDIONE	UG/KG					330 NJ			1400 NJ		890 NJ			770 NJ
BENZO[E]PYRENE	UG/KG					290 NJ		1200 NJ			3300 NJ	1700 NJ		
BENZO[B]TRIPHENYLENE	UG/KG											380 NJ		
BENZ[E]ACEPHENANTHRYLENE	UG/KG													
1,2:7,8-DIBENZPHENANTHRENE	UG/KG					260 NJ						480 J		
[3,4:9,10] DIBENZPYRENE	UG/KG					180 NJ								
UNKNOWN ALKENE	UG/KG													
UNKNOWN CARBOXYLIC ACID	UG/KG										720 J			
UNKNOWN PAHS/NO.	UG/KG					2700 J/11		5300 J/7	5400 J/4		9400 J/1	2100 J/6		8200 J/6
HEXADECANOIC ACID	UG/KG						100 NJ					670 NJ		
9-OCTADECENE,(E)	UG/KG						170 NJ							
1-HEPTADECENE	UG/KG						120 NJ							
D:C-FRIEDOOLEANAN-3-ONE	UG/KG						860 NJ							
9 H-FLUOREN-9-ONE	UG/KG							460 NJ						
CHOLESTEROL	UG/KG													
NAPHTHALENE, 2-PHENYL	UG/KG							760 NJ						
1-TETRADECENE	UG/KG									140 NJ				
1-OCTADECENE	UG/KG									230 NJ				
1-HEPTADECENE	UG/KG									230 NJ				
3,4-DIHYDROCYCLOPENTA (CD) PYRENE	UG/KG										550 NJ			
1-EICOSANOL	UG/KG													
TESTOSTERONE	UG/KG													
TRIPHENYLENE,2-METHYL	UG/KG										800 NJ	370 NJ		
VALENCENE	UG/KG													
PESTICIDE&PCB														
ALPHA-BHC	UG/KG	2 U	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN	UG/KG	3.8 U	--	--	--	--	--	--	--	--	--	--	--	42 U
ENDRIN ALDEHYDE	UG/KG	3.8 U	--	--	--	18 J	--	--	17 J	--	--	--	--	49 J
ENDRIN KETONE	UG/KG	3.8 U	--	--	--	--	--	--	--	--	--	--	--	150
4,4'-DDT	UG/KG	3.8 U	--	--	--	--	--	12 J	41 J	--	43 J	30 J	--	38 J
4,4'-DDE	UG/KG	3.8 U	--	--	--	--	--	--	--	--	--	--	--	--
METHOXYCHLOR	UG/KG	20 U	--	--	--	--	--	--	74 NJ	--	81 NJ	--	--	--

Notes:

GS - Gulf States Creosoting
SS - surface soil sample
UG/KG - micrograms per kilogram
U - value is below the reporting limit
J - estimated value
R - data is unusable
N - presumptive evidence of presence of materia

shading - elevated concentrations of constituents

TABLE 6 (CONTINUED)
SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Background	On-site Samples											
COMPOUND	UNITS	GS01SS	GS14SS	GS15SS	GS16SS	GS17SS	GS18SS	GS19SS	GS20SS	GS20SD*	GS21SS	GS22SS	GS23SS	GS24SS
VOLATILES														
ACETONE	UG/KG	100 J	75 J	100 J	58 J	260 J	130 J	180 J	83 J	230 J	270 J	110 J	130 J	220 J
METHYL ACETATE	UG/KG	11 U	--	3 J	--	--	--	3 J	--	--	--	--	--	--
METHYL ETHYL KETONE	UG/KG	11 U	--	12	--	28 J	14 J	17 J	--	23 J	31 J	--	14	--
MISCELLANEOUS VOLATILE ORGANICS														
UNKNOWN COMPOUNDS/NO.	UG/KG	19 J/2	7 J/1	10 J/1	16 J/2	12 J/1	8 J/1			9 J/1	12 J/1	6 J	30 J/3	150 J/2
ACETALDEHYDE	UG/KG		12 NJ	24 NJ		38 NJ		18 NJ		42 NJ	47 NJ		14 NJ	
BUTANAL	UG/KG													
BUTANAL, 3-METHYL-	UG/KG									11 NJ				
HEXANAL	UG/KG				31 NJ		20 NJ							
PENTANAL	UG/KG										7 NJ			
PROPANAL, 2-METHYL-	UG/KG					7 NJ				7 NJ				
EXTRACTABLES														
(3-AND/OR 4-)METHYLPHENOL	UG/KG	380 U	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	UG/KG	380 U	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	UG/KG	380 U	--	250 J	87 J	270 J	--	--	--	--	--	--	66 J	150 J
ANTHRACENE	UG/KG	380 U	1100	370 J	--	380 J	--	--	--	--	--	--	--	330 J
BENZALDEHYDE	UG/KG	380 U	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	UG/KG	380 U	2300	690	260 J	1000	--	--	58 J	44 J	--	--	430 J	980
BENZO(B)FLUORANTHENE 6200/21000	UG/KG	380 U	4200	1500	700 J	2800 J	--	--	160 J	140 J	--	--	--	2700 J
BENZO(GHI)PERYLENE	UG/KG	380 U	820	360 J	92 J	290 J	--	--	--	--	--	--	180 J	330 J
BENZO(K)FLUORANTHENE	UG/KG	380 U	2400	1100	730 J	2700 J	--	--	170 J	150 J	--	--	620	2800 J
BENZO-A-PYRENE 6200/2100	UG/KG	380 U	2300	650	230 J	1000	--	--	46 J	47 J	--	--	380 J	870
1,1-BIPHENYL	UG/KG	380 U	--	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	UG/KG	380 U	280 J	250 J	62 J	130 J	--	--	--	--	--	--	--	--
CHRYSENE	UG/KG	380 U	3100	1700	390 J	1600	--	--	98 J	69 J	--	--	510	1100
DIBENZO(A,H)ANTHRACENE 620/2100	UG/KG	380 UJ	580	200 J	95 J	330 J	--	--	--	--	--	--	120 J	260 J
DIBENZOFURAN	UG/KG	380 U	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	UG/KG	380 U	3100	3100	780	2500	--	--	73 J	81 J	--	--	520	1300
FLUORENE	UG/KG	380 U	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	UG/KG	380 UJ	1700	740 J	270 J	890	--	--	63 J	51 J	--	--	340 J	550 J
2-METHYLNAPHTHALENE	UG/KG	380 U	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE	UG/KG	380 U	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	UG/KG	380 U	320 J	1100	310 J	250 J	--	--	--	--	--	--	59 J	--
PENTACHLOROPHENOL	UG/KG	970 UJ	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	UG/KG	380 U	3300	2200	540	1700	--	--	100 J	83 J	--	--	450	1800
MISCELLANEOUS EXTRACTABLES														
UNKNOWN COMPOUNDS/NO.	UG/KG		5500 J/8	12000 J/19	24000 J/17	5900 J/16	3100 J/17	12000 J/25	6800 J/17	9100 J/17	3100 J/14	1300 J/4	3600 J/21	5900 J/15
STIGMAST-4-EN-3-ONE	UG/KG									320 NJ			170 NJ	2800 NJ
UNKOWN ALCOHOL	UG/KG													
UNKNOWN KETONES/NO.	UG/KG													
METHYLANTHRACENE	UG/KG													
9,10-ANTHRACENEDIONE	UG/KG			700 NJ	160 J									
PHENANTHRENE, 1-METHYL														
PHENANTHRENE, 2-METHYL														
PHENANTHRENE, 2,3-DIMETHYL	UG/KG													
PHENANTHRENE, 4,5-DIMETHYL														
ANTHRACENE, 2-METHYL														
BENZOFLUORENE	UG/KG													
11 H-BENZO[A]FLUORENE	UG/KG		1700 NJ											
11 H-BENZO[B]FLUORENE				350 NJ		510 NJ								

TABLE 6 (CONTINUED)
SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Background	On-site Samples											
COMPOUND	**UNITS**	**GS01SS**	**GS14SS**	**GS15SS**	**GS16SS**	**GS17SS**	**GS18SS**	**GS19SS**	**GS20SS**	**GS20SD***	**GS21SS**	**GS22SS**	**GS23SS**	**GS24SS**
2,2'-BINAPHTHALENE														
1,2:3,4-DIBENZPYRENE				190 NJ		290 NJ								
1,2 4,5-DIBENZPYRENE														
1-DOCOSENE										220 NJ				
1-EICOSANOL											230 NJ			
PENTADECANOIC ACID														
PERYLENE			710 NJ		200 J									260
PYRENE, 1-METHYL			1300 NJ		2000 J									160 NJ
PYRENE, 2-METHYL	UG/KG		720 NJ		1400 J								130 NJ	
PYRENE, 1,3-DIMETHYL	UG/KG													
PYRENE, 4-METHYL														
BENZ[A]ANTHRACENE, 7-METHYL-													240 NJ	
BENZ(A)ANTHRACENE-7, 12-DIONE				260 NJ										
BENZO[B]NAPHTHO[2,3-D] FURAN														
BENZO[B]NAPHTHO[2,1-D] THIOPHENE	UG/KG		550 NJ		1400 J	310 NJ								
BENZO[J]FLUORANTHENE													440 NJ	
7H-BENZ [DE] ANTHRACEN-7-ONE	UG/KG		870 NJ	440 NJ	1600 J	390 NJ							210 NJ	140 NJ
CARYOPHYLLENE														1600 NJ
CHRYSENE, 1-METHYL				300 NJ										
CHRYSENE, 5-METHYL					2300 J	310 NJ								
CHRYSENE, 6-METHYL	UG/KG													
CYCLOPENTA(DEF) PHENANTHRENONE			470 NJ										140 NJ	
5,12-NAPHTHACENEDIONE	UG/KG		380 NJ		2600 J	800 NJ							210 NJ	
BENZO[E]PYRENE	UG/KG		2600 NJ			880 NJ							240 NJ	840 NJ
BENZO[B]TRIPHENYLENE														
BENZ[E]ACEPHENANTHRYLENE													110 NJ	
1,2:7,8-DIBENZPHENANTHRENE	UG/KG		550 NJ											
[3,4 9,10] DIBENZPYRENE	UG/KG													
UNKNOWN ALKENE														200 J
UNKNOWN CARBOXYLIC ACID														
UNKNOWN PAHS/NO.	UG/KG		5600 J/8	2000 J/4	580 J/1	970 J/3								1700 J/6
HEXADECANOIC ACID							110 NJ	160 J	130 NJ	150 NJ		110 NJ		
9-OCTADECENE,(E)														
1-HEPTADECENE														
D:C-FRIEDOOLEANAN-3-ONE														
9 H-FLUOREN-9-ONE														
CHOLESTEROL						650 NJ								
NAPHTHALENE, 2-PHENYL						210 NJ								
1-TETRADECENE														
1-OCTADECENE														
1-HEPTADECENE														
3,4-DIHYDROCYCLOPENTA (CD) PYRENE			520 NJ											
1-EICOSANOL									190 NJ					
TESTOSTERONE								390 NJ						
TRIPHENYLENE,2-METHYL			840 NJ											
VALENCENE					1200 NJ									
PESTICIDES/PCB														
ALPHA-BHC	UG/KG	2 U	--	--	--	--	--	--	--	--	--	--	1.7 NJ	--
ENDRIN	UG/KG	3.8 U	--	--	--	8.4 NJ	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	UG/KG	3.8 U	--	27 NJ	--	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	UG/KG	3.8 U	--	--	14 J	20 J	--	--	--	--	--	--	6.9 J	--
4,4'-DDT	UG/KG	3.8 U	10 NJ	30 NJ	--	--	--	--	--	--	--	--	--	--
4,4'-DDE	UG/KG	3.8 U	--	--	2.5 J	--	--	--	4.1 NJ	3.3 NJ	--	--	--	--
METHOXYCHLOR	UG/KG	20 U	34 NJ	--	--	--	--	--	--	--	--	--	--	--

Notes:

GS - Gulf States Creosoting
SS - surface soil sample
UG/KG - micrograms per kilogram
U - value is below the reporting limit
J - estimated value
R - data is unusable
N - presumptive evidence of presence of material
* - Sample GS20SD is a duplicate of sample GS20SS
shading - elevated concentrations of constituents

TABLE 7
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SUBSURFACE SOIL SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Background	On-site Samples									
COMPOUNDS	UNITS	GS01SB	GS02SB	GS03SB	GS04SB	GS05SB	GS06SB	GS07SB	GS08SB	GS09SB	GS10SB	GS11SB
METALS												
ALUMINUM	MG/KG	7300 J	7800 J	8600 J	6600 J	5300 J	7700 J	9400 J	8100 J	5800 J	8600 J	9600 J
ANTIMONY	MG/KG	0.59 UJ	--	--	--	--	--	--	--	--	0.96 R	1.6 R
ARSENIC	MG/KG	6.7	3.4 J	9.4	1.9	0.91	2.7	2.7	3.5	--	13	6.6
BARIUM	MG/KG	62	34	63	57	59	48	50	45	29	430	41
BERYLLIUM	MG/KG	0.31	0.36	0.64	0.41	0.27	0.24	0.35	0.59	0.35	1.3	0.49
CADMIUM	MG/KG	0.05 U	--	--	--	--	--	--	--	--	0.87	--
CALCIUM	MG/KG	850	170	1400	670	580	990	670	450	540	9400	320
CHROMIUM	MG/KG	12	9.5	14	6.6	4.9	7.5	8	9.2	5.3	19	17
COBALT	MG/KG	3.3	2.6	4.3	1.4	0.78 R	1.2	1.6	9.4	1 R	12	3.2 R
COPPER	MG/KG	6.4	--	--	--	--	--	--	--	--	40 J	--
IRON	MG/KG	13000	13000	22000 J	7500 J	2300 J	5800 J	8200 J	12000 J	3800	20000	20000
LEAD	MG/KG	8.2 J	6.6	15	9.2	6.7	11	11	5.7	8.4	71	6.7
MAGNESIUM	MG/KG	580 J	480 J	770	370	220	580	550	370	290 J	2400 J	680 J
MANGANESE	MG/KG	180	200	200	60	16	18	19	1000	9.3	1800	120
NICKEL	MG/KG	5.2 U	--	--	--	--	--	--	--	--	20	--
POTASSIUM	MG/KG	320 J	320 J	360	190	170	240	260	350	190 J	970 J	430 J
SELENIUM	MG/KG	0.7	1.4	1.6	--	--	--	--	--	--	1.2	1.1 R
SILVER	MG/KG	0.38	0.38 R	0.49 R	--	--	0.28 R	--	0.32	--	0.76	1.1 R
SODIUM	MG/KG	290	290	98 J	300	190 J	250	220	46	440	490	350
VANADIUM	MG/KG	22	20	33	14	6.7	17	18	22	8.4	30	33
ZINC	MG/KG	18	20	23	15	7.3	12	15	25	12	290	44

Notes:

GS - Gulf States Creosoting
SB - subsurface soil sample
MG/KG - milligrams per kilogram
U - value is below the reporting limit
J - estimated value
R - data is unusable
shading - elevated concentrations of constituents

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SUBSURFACE SOIL SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Background	On-site Samples									
COMPOUNDS	UNITS	GS01SB	GS12SB	GS13SB	GS14SB	GS15SB	GS16SB	GS17SB	GS18SB	GS19SB	GS20SB	GS21SB
METALS												
ALUMINUM	MG/KG	7300 J	3700 J	8400 J	4600 J	11000 J	12000 J	6700 J	7700 J	12000 J	4700 J	8600 J
ANTIMONY	MG/KG	0.59 UJ	--	0.58 R	--	--	--	--	--	--	--	--
ARSENIC	MG/KG	6.7	4.6	4.7	7.4	8.1	7.3	1.5	4.1	8.3	2.3	4.5
BARIUM	MG/KG	62	19	23	54	45	49	61	26	43	24	28
BERYLLIUM	MG/KG	0.31	0.3	0.34	0.48	0.59	0.49	0.39	0.31	0.46	0.3	0.3
CADMIUM	MG/KG	0.05 U	--	--	--	--	--	--	--	--	--	--
CALCIUM	MG/KG	850	160	400	620	710	390	620	190	190	120	140
CHROMIUM	MG/KG	12	8.5	11	7.1	21	17	7	8.7	12	4.7	14
COBALT	MG/KG	3.3	1.4	1.7	12	2.9	2.1	1.5	3.4	9.6	2.2	1.9
COPPER	MG/KG	6.4	--	--	--	7 J	7.7	--	--	--	--	3.6
IRON	MG/KG	13000	13000 J	14000	14000	24000	23000	5900	12000	20000	6900	13000
LEAD	MG/KG	8.2 J	6.7	5.1	27	9.2	8.7 J	9.1 J	8 J	12 J	6 J	6.8 J
MAGNESIUM	MG/KG	580 J	170	470 J	250 J	640 J	650 J	310 J	470 J	680 J	210 J	420 J
MANGANESE	MG/KG	180	55	82	1000	410	52	57	76	600	140	95
NICKEL	MG/KG	--	--	--	--	--	--	--	--	--	--	--
POTASSIUM	MG/KG	320 J	170	410 J	180 J	490 J	470 J	280 J	220 J	480 J	170 J	300 J
SELENIUM	MG/KG	0.7	1.4	--	--	2.3 J	1.7 J	--	--	1.7 J	--	0.95 R
SILVER	MG/KG	0.38	0.47	0.39	0.42	0.65	0.45	0.32 R	0.32 R	0.53	0.25 R	0.4
SODIUM	MG/KG	290	96	310	260	290	290	340	540	280	340	310
VANADIUM	MG/KG	22	26	22	23	36	33	13	18	31	14	21
ZINC	MG/KG	18	8.4	20	20	36	25	12	16	30	11	16

Notes:

GS - Gulf States Creosoting
SB - subsurface soil sample
MG/KG - milligrams per kilogram
U - value is below the reporting limit
J - estimated value
R - data is unusable
shading - elevated concentrations of constituents

TABLE 8
SUMMARY OF ORGANIC ANALYTICAL RESULTS
SUBSURFACE SOIL SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Background	On-site Samples									
COMPOUNDS	UNITS	GS01SB	GS02SB	GS03SB	GS04SB	GS05SB	GS06SB	GS07SB	GS08SB	GS09SB	GS10SB	GS11SB
VOLATILES												
ACETONE	UG/KG	39 UJ	12 J	35 J	--	--	21 J	--	89 J	--	78 J	24 J
BENZENE	UG/KG	11 U	--	--	--	--	--	--	--	--	2 J	--
METHYL ETHYL KETONE	UG/KG	11 UJ	--	--	--	--	--	--	11 J	--	--	--
MISCELLANEOUS VOLATILE ORGANICS												
UNKNOWN COMPOUNDS/NO.	UG/KG						8 J/1		8 J/1		25 J/2	
EXTRACTABLES												
ANTHRACENE	UG/KG	400 U	--	--	--	--	--	--	74 J	--	12000	49 J
ACENAPHTHENE		400 U	--	--	--	--	--	--	--	--	210 J	--
ACENAPHTHYLENE		400 U	--	--	--	--	--	--	--	--	6100	--
BENZO(A)ANTHRACENE	UG/KG	400 U	--	--	--	--	--	--	120 J	--	23000	--
BENZO(B)FLUORANTHENE	UG/KG	400 U	--	--	--	--	--	47 J	1000 J	--	37000	--
BENZO(G,H,I)PERYLENE		400 U	--	--	--	--	--	--	320 J	--	5200	--
BENZO(K)FLUORANTHENE	UG/KG	400 U	--	--	--	--	--	45 J	980 J	--	26000	46 J
BENZO-A-PYRENE	UG/KG	400 U	--	--	--	--	--	--	240 J	--	25000	--
BIS(2-ETHYLHEXYL)PHTHALATE		400 U	--	--	--	450 J	--	--	--	--	--	--
CARBAZOLE		400 U	--	--	--	--	--	--	--	--	1800	--
CHRYSENE	UG/KG	400 U	--	--	--	--	--	--	220 J	--	35000	--
DIBENZO(A,H)ANTHRACENE		400 U	--	--	--	--	--	--	150 J	--	3300	--
DIBENZOFURAN		400 U	--	--	--	--	--	--	--	--	340 J	--
FLUORANTHENE	UG/KG	400 U	--	--	--	--	--	--	200 J	--	28000	--
INDENO (1,2,3-CD) PYRENE	UG/KG	400 U	--	--	--	--	--	--	420	--	20000	--
PHENANTHRENE	UG/KG	400 U	--	--	--	--	--	--	--	--	2700	--
PENTACHLOROPHENOL		1000 U	--	--	--	--	--	--	--	--	680 J	--
PYRENE	UG/KG	400 U	--	--	--	--	--	--	230 J	--	37000	--
MISCELLANEOUS EXTRACTABLES												
1-PHENANTHRENECARBOXYLIC ACID		92 NJ										
UNKNOWN CARBOXYLIC ACID												86 J
UNKNOWN COMPOUNDS/NO.		840 J/5	220 J/2	250 J/2				190 J/1	1500 J/7	370 J/3	17000 J/4	530 J/3
UNKNOWN AMIDE									110 J			
UNKNOWN PAHS/NO.									560 J/3		65000 J/13	
UNKNOWN PHTHALATES												
PERYLENE									490 NJ		16000 NJ	
PYRENE, 1-METHYL											9200 NJ	
PYRENE, 5-METHYL											6000 NJ	
9,10-ANTHRACENEDIONE												
BENZ[A]ANTHRACENE, 8-METHYL											2800 NJ	
7H-BENZ[DE]ANTHRACENEDIONE											4600 NJ	
7H-BENZ[DE]ANTHRACEN-7-ONE												
11 H-BENZO[B]FLUORENE											9900 NJ	
BENZO[B]NAPHTHO[2,3-D] THIOPHENE											4600 NJ	
BENZO[B]NAPHTHO[1,2-D] THIOPHENE												
BENZO[B]TRIPHENYLENE												
BENZO[E]PYRENE											6200 NJ	
1,2-BENZENEDICARBOXYLIC ACID												
2,2'-BINAPHTHALENE											3100 NJ	
CYCLOPENTA (DEF) PHENANTHRENONE											4700 NJ	
1,2:3,4-DIBENZPYRENE									190 NJ			
1,2:7,8-DIBENZPHENANTHRENE											7400 NJ	
3,4-DIHYDROCYCLOPENTA (CD) PYRENE											2800 NJ	
ELLIPTICINE												
NAPTHO [1,2,3,4-DEF] CHRYSENE									120 NJ			
5,12-NAPHTACENEDIONE											4600 NJ	
VALENCENE												
PESTICIDES/PCB												
4,4-DDT	UG/KG	4 U	--	--	--	--	--	--	--	--	110 N	--
4,4-DDE	UG/KG	4 U	--	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	UG/KG	4 U	--	--	--	--	--	--	--	--	180 N	--
GAMMA-BHC (LINDANE)	UG/KG	2.1 U	--	--	--	--	--	--	--	--	--	--
PCB-1254 (AROCLOR 1254)	UG/KG	40 U	--	--	--	--	--	--	--	--	--	--
PCB-1260 (AROCLOR 1260)	UG/KG	40 U	--	--	--	--	--	--	--	--	--	--

Notes:

GS - Gulf States Creosoting
SB - subsurface soil sample
UG/KG - micrograms per kilogram
U - value is below the reporting limit
J - estimated value
shading - elevated concentrations of constituents

TABLE 8 (CONTINUED)
SUMMARY OF ORGANIC ANALYTICAL RESULTS
SUBSURFACE SOIL SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Background	On-site Samples									
COMPOUNDS	UNITS	GS01SB	GS12SB	GS13SB	GS14SB	GS15SB	GS16SB	GS17SB	GS18SB	GS19SB	GS20SB	GS21SB
VOLATILES												
ACETONE	UG/KG	39 UJ	--	--	55 J	67 J	--	--	--	--	--	--
BENZENE	UG/KG	11 U	--	--	--	--	--	--	--	--	--	--
METHYL ETHYL KETONE	UG/KG	11 UJ	--	--	--	--	--	--	--	--	--	--
MISCELLANEOUS VOLATILE ORGANICS												
UNKNOWN COMPOUNDS/NO.	UG/KG				8 J/1	20 J/2						
EXTRACTABLES												
ANTHRACENE	UG/KG	400 U	--	--	690	--	--	--	--	--	--	--
ACENAPHTHENE	UG/KG	400 U	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	UG/KG	400 U	--	--	330 J	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	UG/KG	400 U	--	56 J	1400	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	UG/KG	400 U	--	160 J	2400	--	--	41 J	--	--	--	--
BENZO(G,H,I)PERYLENE	UG/KG	400 U	--	--	540	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	UG/KG	400 U	--	170 J	2000	--	--	43 J	--	--	--	--
BENZO-A-PYRENE	UG/KG	400 U	--	--	1400	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	400 U	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	UG/KG	400 U	--	--	210 J	--	--	--	--	--	--	--
CHRYSENE	UG/KG	400 U	--	91 J	2100	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	UG/KG	400 U	--	--	390	--	--	--	--	--	--	--
DIBENZOFURAN	UG/KG	400 U	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	UG/KG	400 U	--	130 J	2200	--	--	--	--	--	--	--
INDENO (1,2,3-CD) PYRENE	UG/KG	400 U	--	51 J	1100	--	--	--	--	--	--	--
PHENANTHRENE	UG/KG	400 U	--	--	610	--	--	--	--	--	--	--
PENTACHLOROPHENOL	UG/KG	1000 U	--	--	--	--	--	--	--	--	--	--
PYRENE	UG/KG	400 U	--	89 J	2400	--	--	--	--	--	--	--
MISCELLANEOUS EXTRACTABLES												
1-PHENANTHRENECARBOXYLIC ACID	UG/KG											
UNKNOWN CARBOXYLIC ACID	UG/KG											
UNKNOWN COMPOUNDS/NO.	UG/KG			1000 J/2	3900 J/10	310 J	220 J/2		450 J/2	95 J/1	130 J/1	84 J/1
UNKNOWN AMIDE	UG/KG											
UNKNOWN PAHS/NO.	UG/KG				3200 J/7							
UNKNOWN PHTHALATES	UG/KG								230 J/2			
PERYLENE	UG/KG				420 NJ							
PYRENE, 1-METHYL	UG/KG				340 NJ							
PYRENE, 5-METHYL	UG/KG											
9,10-ANTHRACENEDIONE	UG/KG				320 NJ							
BENZ[A]ANTHRACENE, 8-METHYL	UG/KG											
7H-BENZ[DE]ANTHRACENEDIONE	UG/KG											
7H-BENZ[DE]ANTHRACEN-7-ONE	UG/KG				500 NJ							
11 H-BENZO[B]FLUORENE	UG/KG											
BENZO[B]NAPHTHO[2,3-D] THIOPHENE	UG/KG											
BENZO[B]NAPHTHO[1,2-D] THIOPHENE	UG/KG				270 NJ							
BENZO[B]TRIPHENYLENE	UG/KG				340 NJ							
BENZO(E)PYRENE	UG/KG				1900 NJ							
1,2-BENZENEDICARBOXYLIC ACID	UG/KG								120 NJ			
2,2'-BINAPHTHALENE	UG/KG											
CYCLOPENTA (DEF) PHENANTHRENONE	UG/KG				320 NJ							
1,2:3,4-DIBENZPYRENE	UG/KG											
1,2:7,8-DIBENZPHENANTHRENE	UG/KG											
3,4-DIHYDROCYCLOPENTA (CD) PYRENE	UG/KG				290 NJ							
ELLIPTICINE	UG/KG				270 NJ							
NAPTHO [1,2,3,4-DEF] CHRYSENE	UG/KG											
5,12-NAPHTACENEDIONE	UG/KG				290 NJ							
VALENCENE	UG/KG										120 NJ	
PESTICIDES/PCB												
4,4-DDT	UG/KG	4 U	--	--	16 J	--	--	--	--	--	--	--
4,4-DDE		4 U	--	6.9	--	--	--	--	--	--	--	--
ENDRIN KETONE	UG/KG	4 U	--	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	UG/KG	2.1 U	--	--	--	--	1.3 J	--	1.7 J	--	--	--
PCB-1254 (AROCLOR 1254)	UG/KG	40 U	--	--	--	--	--	--	--	--	--	--
PCB-1260 (AROCLOR 1260)	UG/KG	40 U	--	--	--	--	--	--	42 J	39 J	--	--

Notes:
GS - Gulf States Creosoting
SB - subsurface soil sample
UG/KG - micrograms per kilogram
U - value is below the reporting limit
J - estimated value
shading - elevated concentrations of constituents

TABLE 9
SUMMARY OF FIELD PARAMETERS FOR GROUNDWATER SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

Sample Number	pH	Conductivity (µS/cm)	Turbidity (NTU)	Temperature °C
GS01GW	5.41	218	5.97	18.5
GS02GW	4.95	724	3.7	18.4
GS03GW	5.93	180	9.84	17.5
GS04GW	5.81	59	11	18.9
GS05GW	5.32	608	6.23	17.6

Notes:

GS - Gulf States Creosoting

GW - Groundwater sample

(µS/cm) - microsiemens per centimeter

NTU - Nephelometric turbidity units

°C - degrees Celsius

TABLE 10
SUMMARY OF INORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Background	On-site Samples			
COMPOUND	UNITS	GS01GW	GS02GW	GS03GW	GS04GW	GS05GW
METALS						
ALUMINUM	UG/L	320 UJ	450 J	850 J	1700 J	370 J
BARIUM	UG/L	20	120	29	26	32
BERYLLIUM	UG/L	0.11	0.14	0.11	--	0.9
CALCIUM	UG/L	4600	16000	3600	3500	15000
CHROMIUM	UG/L	1.8 R	0.92	1.8	1.6	--
COBALT	UG/L	1.2	1.2 R	--	--	10
IRON	UG/L	1500	1400	2100	1900	12000
MAGNESIUM	UG/L	1500	5500	940	930	8200
MANGANESE	UG/L	23	160	110	30	320
POTASSIUM	UG/L	520	1500	870	1800	1900
SODIUM	UG/L	40000	120000	29000	5000	86000
VANADIUM	UG/L	0.6 U	0.82 R	2	1.9	--
ZINC	UG/L	11 U	13	18	--	42

Notes:

GS - Gulf States Creosoting
GW - groundwater sample
UG/L - micrograms per liter
U - value is below the reporting limit
J - estimated value
R - data is unusable
shading - elevated concentrations of constituents

TABLE 11
SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Background	On-site Samples			
COMPOUND	**UNITS**	**GS01GW**	**GS02GW**	**GS03GW**	**GS04GW**	**GS05GW**
VOLATILE ORGANICS						
METHYL ETHYL KETONE	UG/L	6.1 UJ	--	--	7.2 J	--
MISCELLANEOUS VOLATILE ORGANICS						
INDANE	UG/L			1.3 NJ		
EXTRACTABLES						
None						
MISCELLANEOUS EXTRACTABLES						
D-LIMONENE	UG/L	2.2 NJ				
LIMONENE	UG/L		2.2 NJ	2.1 NJ		
UNKNOWN COMPOUNDS/NO.	UG/L					4.7 J/2
PESTICIDES/PCBS						
None						

Notes:

GS - Gulf States Creosoting
GW - groundwater sample
UG/L - micrograms per liter
U - value is below the reporting limit
J - estimated value
N - presumed presence of constituent
shading - elevated concentrations of constituents

TABLE 12
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SEDIMENT SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

		Marsh Samples					Pearl River		Prairie Branch
		Background	Downstream Samples				Control	Downstream	Control
COMPOUND	UNITS	GS01SD	GS02SD	GS03SD	GS04SD	GS05SD	GS06SD	GS07SD	GS08SD
METALS									
ALUMINUM	MG/KG	8200 J	4700 J	16000 J	9100 J	4900 J	450 J	140 J	510 J
ANTIMONY	MG/KG	12 UJ	--	--	--	2.1 R	0.7 R	--	--
ARSENIC	MG/KG	5.7	1.8 R	7.9 R	5.5	2.9 R	--	--	--
BARIUM	MG/KG	89	77	300	120	71	6.8	3.2	15
BERYLLIUM	MG/KG	0.39	0.56	1.3	1.2	0.51	--	--	0.1
CALCIUM	MG/KG	1500	880	2000	2000	1200	250	--	180
CHROMIUM	MG/KG	13	7.8	24	15	8.4	--	--	1.4
COBALT	MG/KG	4.4	4.7	12	11	5.5	0.61 R	0.47	1
IRON	MG/KG	15000	6400	24000	13000	8400	950	340	2200 J
LEAD	MG/KG	12 J	20 J	41 J	21	12	1.8	1.2 J	3.6
MAGNESIUM	MG/KG	1000 J	410 J	1200 J	1000 J	660 J	64 J	--	81
MANGANESE	MG/KG	340	500	720	280	320	52	53	44
POTASSIUM	MG/KG	700 J	410 J	1100 J	811 J	480 J	90 J	52 J	56
SELENIUM	MG/KG	1.9 R	--	4.2	--	--	--	--	--
SILVER	MG/KG	0.68 R	0.45 R	1.1 R	1.1 R	0.71 R	0.24 R	--	--
SODIUM	MG/KG	690	580	1500	1200	600	330	330	68
VANADIUM	MG/KG	24	13	41	23	13	1.6 R	0.57 R	2.4
ZINC	MG/KG	36	33	130	84	39	3.6	--	4.6
T.O.C.	%	2	2.1	9.5	NR	1.8	--	NR	--

Notes:

SP - Sonford Products
SS - surface soil sample
MG/KG - milligrams per kilogram
U - value is below the reporting limit
J - estimated value
R - data is unusable
NR - no reading
shading - elevated concentrations of constituents
T.O.C. - Total Organic Carbon (%)

TABLE 13
SUMMARY OF ORGANIC ANALYTICAL RESULTS
SEDIMENT SAMPLES
GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

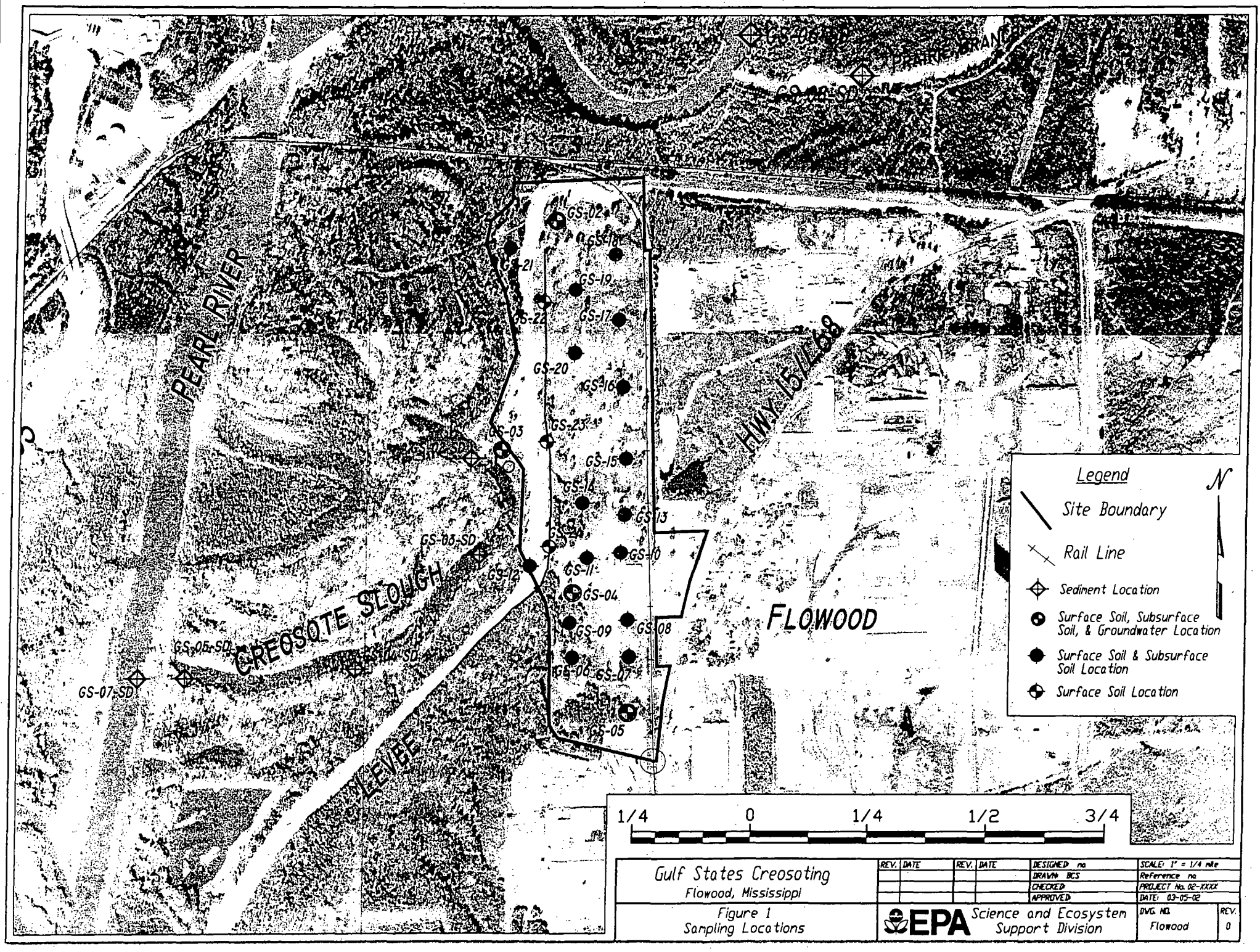
		Marsh Samples					Pearl River		Prairie Branch
		Background	Downstream Samples				Control	Downstream	Control
COMPOUNDS	UNITS	GS01SD	GS02SD	GS03SD	GS04SD	GS05SD	GS06SD	GS07SD	GS08SD
VOLATILES									
ACETONE	UG/KG	94 J	130 J	350 J	520 J	51 J	22 J	49 J	29 J
CARBON DISULFIDE	UG/KG	5 J	–	51 J	–	–	13 U	–	14 U
METHYL ETHYL KETONE	UG/KG	37 UJ	–	–	88 J	–	13 UJ	–	14 UJ
MISCELLANEOUS VOLATILE ORGANICS									
UNKNOWN COMOUNDS/NO.	UG/KG				180 J/1	33 J			8 J/1
ACETALDEHYDE	UG/KG				71 NJ				
EXTRACTABLES									
ACENAPHTHENE	UG/KG	0.5 J	1 J	100	5	0.9 J	0.8 U	–	0.8 U
ACENAPHTYLYENE	UG/KG	3	2	44 J	6	–	0.8 U	–	0.8 U
ANTHRACENE	UG/KG	3	7	140	34	7	2 U	–	0.8 U
BENZALDEHYDE	UG/KG	89 J	–	110 J	130 J	–	330 U	–	330 U
BENZO(A)ANTHRACENE	UG/KG	1 J	7	110	19	12	5 U	–	1 U
BENZO(B)FLUORANTHENE	UG/KG	440 U	–	540 J	–	–	330 U	–	330 U
BENZO(GHI)PERYLENE	UG/KG	92 J	–	–	–	–	330 U	–	330 U
BENZO(K)FLUORANTHENE	UG/KG	440 U	–	560 J	–	–	330 U	–	330 U
BENZO-A-PYRENE	UG/KG	2	4	120	17	16	4 U	–	0.8 U
CHRYSENE	UG/KG	1 J	10	200	36	26	7 U	–	2 U
DIBENZO(A,H)ANTHRACENE	UG/KG	1 U	1 J	40	6	4	1	–	0.8 U
FLUORANTHENE	UG/KG	2	21	190	50	34	12 U	–	2 U
FLUORENE	UG/KG	0.5 J	2	82	6	1 J	0.3 J	–	0.8 U
INDENO (1,2,3-CD) PYRENE	UG/KG	440 U	–	180 J	–	–	330 U	–	330 U
2-METHYLNAPHTHALENE	UG/KG	0.6 J	0.9 J	33	2 J	0.8 J	0.4 J	0.4 J	0.8 U
NAPHTHALENE	UG/KG	0.6 J	0.6 J	51	3 J	0.9 J	0.5 J	0.4 J	0.4 J
PENTACHLOROPHENOL	UG/KG	24 U	–	–	–	–	13 U	–	13 U
PHENANTHRENE	UG/KG	2 J	12	72	11	–	4	–	0 U
PYRENE	UG/KG	2	15	140	33	27	10 U	–	2 U
MISCELLANEOUS EXTRACTABLES									
HEXADECANOIC ACID	UG/KG	420 NJ							
1-HEXADECENE	UG/KG	540 NJ		1000 NJ					
ERGOST -5-N-3-OL	UG/KG	1500 NJ			1700 NJ				
.GAMMA.-SITOSTEROL	UG/KG	1400 NJ	1400 NJ						
STIGMASTEROL	UG/KG	1100 NJ							
STIGMAST-4-EN-3-ONE	UG/KG	730 NJ		1400 NJ	2200 NJ	800 NJ			
UNKNOWN COMPOUNDS/NO.	UG/KG	23000 J/23		54000 J	54000 J/24	140000 J/25	61 J/1	69 J/1	170 J/3
UNIDENTIFIED COMPOUNDS/NO.	UG/KG	92000 J/28	92000 J						
BENZO[E]PYRENE	UG/KG			590 NJ					
CHOLESTANOL	UG/KG				1600 NJ				
UNKNOWN ALCOHOL	UG/KG				9200 J				
UNKNOWN KETONE	UG/KG				1800 J				
BENZENE, 1-METHYL-2-ISOPROPYL	UG/KG					1200 NJ			
UNKNOWN CARBOXYLIC ACID	UG/KG					500 J			
PHENANTHRENONE DERIVATIVE	UG/KG					2500 NJ			
PESTICIDES/PCB									
4,4'-DDE	UG/KG	7.3 U	7.9	–	–	–	4.1 U	–	4.1 U
BETA-BHC	UG/KG	3.8 U	–	12	–	–	2.1 U	–	2.1 U
ENDOSULFAN II (BETA)	UG/KG	7.3 U	6.5 J	–	–	–	4.1 U	–	4.1 U
ENDOSULFAN SULFATE	UG/KG	7.3 U	10 N	14 NJ	–	–	4.1 U	–	4.1 U

Notes:
GS - Gulf States Creosoting
SD - sediment sample
UG/KG - micrograms per kilogram
U - value is below the reporting limit
J - estimated value
shading - elevated concentrations of constituents

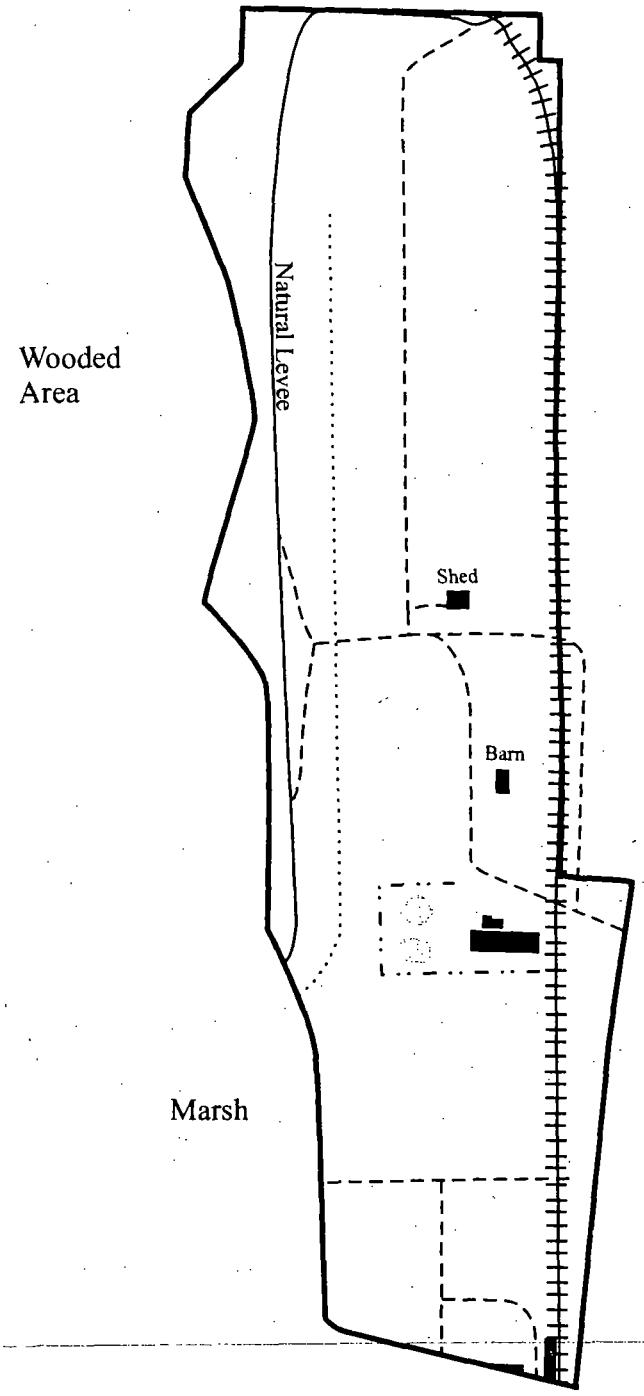
APPENDIX B

FIGURES

2 Pages



Gulf States Creosoting Flowood, Mississippi	REV.	DATE	REV.	DATE	DESIGNED na DRAWN BCS CHECKED APPROVED	SCALE: 1" = 1/4 mile Reference na PROJECT No. 02-XXXX DATE: 03-05-02
Figure 1 Sampling Locations	EPA Science and Ecosystem Support Division				DWG. NO. Flowood	REV. 0



Legend

- Site Boundary
- Dirt Roads
- Railroad Tracks
- Building
- Ditch
- Fence
- Barren Area

Note:
Modified from EPA SESD site drawings dated 03/05/02 as well as GlobXplorer 2002 aerial photo.

Scale:
1" = ¼ Mile

GULF STATES CREOSOTING
1625 FLOWOOD DRIVE
FLOWOOD, RANKIN COUNTY, MISSISSIPPI

SITE LAYOUT MAP
FIGURE 2

DRAWN:	DATE:	W.O. NO.:
KNS	07/12/02	12587-001-001-0133-00
EPA ID No.		TDD No.:
MSN000407423		4W-02-03-A-003

U.S. EPA REGION IV

SDMS

Unscannable Material Target Sheet

DocID: 10642417 Site ID: MSN000407423

Site Name: Gulf States Creosoting Company

Nature of Material:

Map:	☑	Computer Disks:	☐
Photos:	☐	CD-ROM:	☐
Blueprints:	☐	Oversized Report:	☐
Slides:	☐	Log Book:	☐

Other (describe): Parcels map

Amount of material: _____

* Please contact the appropriate Records Center to view the material *

Reference 3
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

topozone

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Aerial Photos

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- ☐ Color Infrared

Map Size

- ○ Small
- ○ Medium
- ◉ Large

View Scale

1 : 50,000

Coordinate Format

D/M/S

Map Datum

NAD83/WGS84

☑ Show target

USGS Jackson (MS) Topo Map

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32° 18' 36"N, 90° 08' 33"W (NAD83/WGS84)
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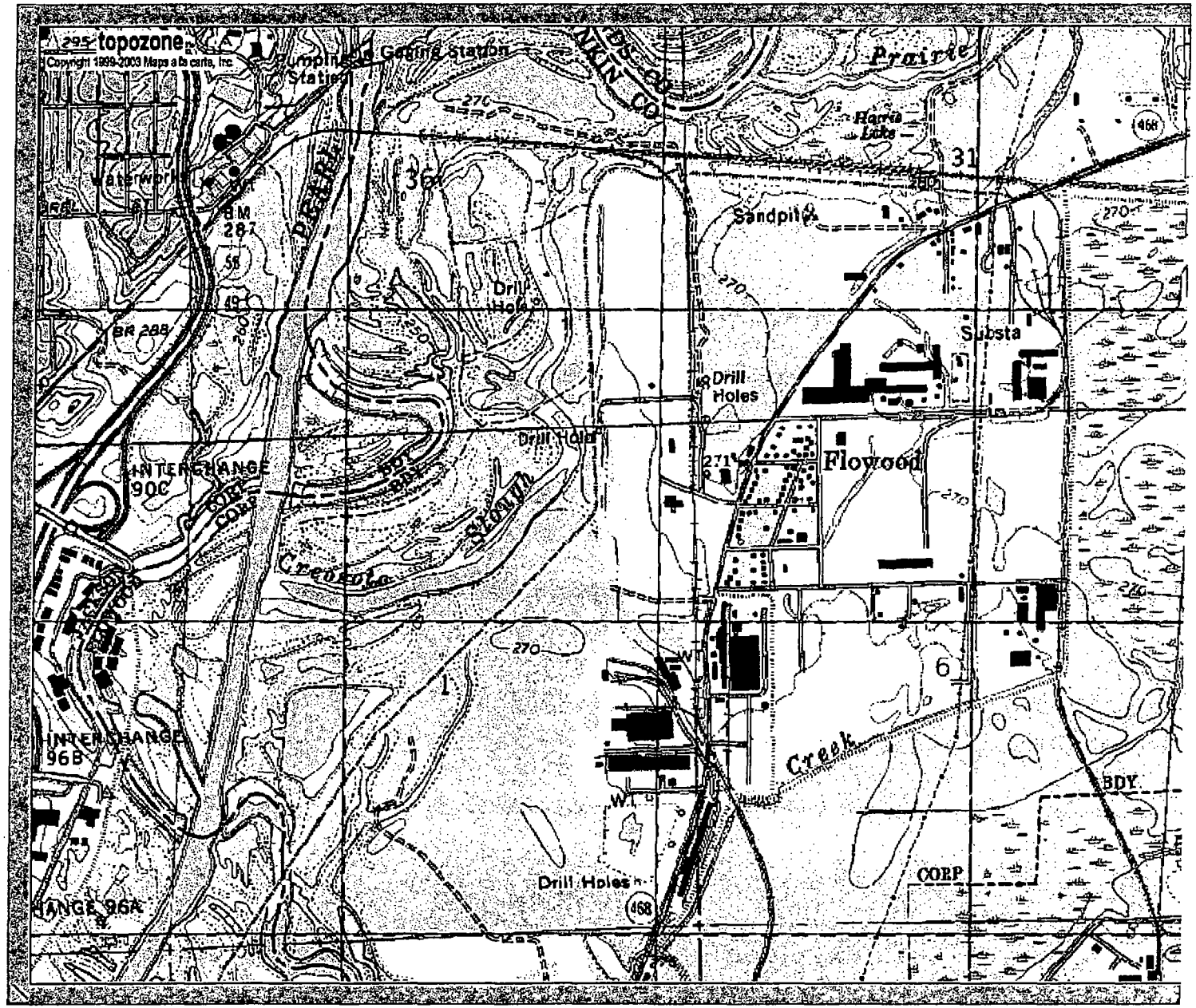

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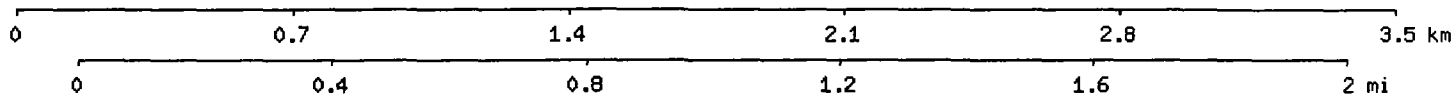


Reference 4
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

Project Note	
Date: June 2, 2008	Gulf State Creosoting Company Flowood, Rankin County, Mississippi TDD Number: TNA-05-003-0045
Organization: T N & Associates, Inc., Reg. 4 EPA START Contract Name: Stacy Kowalski Signature: SKowalski	
Subject: Rankin County Tax Assessor Information for Gulf States Creosoting Company	
The enclosed information contains information obtained from the Rankin County Tax Assessor's Office. The subject property is the former Gulf States Creosoting Company parcel. The information was accessed online at: http://www.rankincounty.org.	
RESPONSE REQUIRED (x) None ( ) Phone call ( ) Memo ( ) Letter ( ) Report	
cc: (x) File ( ) Project Manager ( ) Principal Investigator ( ) Other (specify)	

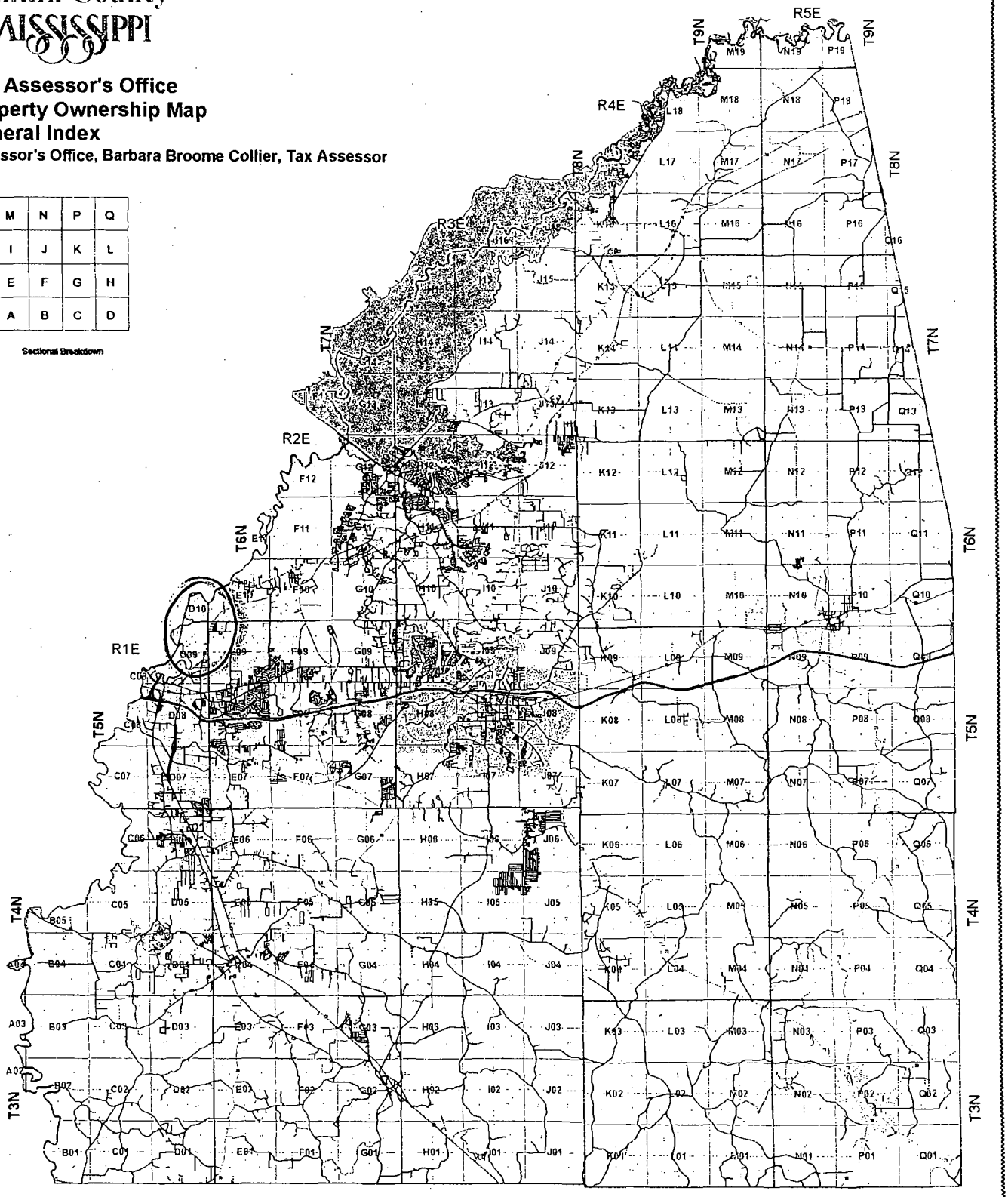
Rankin County
MISSISSIPPI

Tax Assessor's Office
Property Ownership Map
General Index

Assessor's Office, Barbara Broome Collier, Tax Assessor

M	N	P	Q
I	J	K	L
E	F	G	H
A	B	C	D

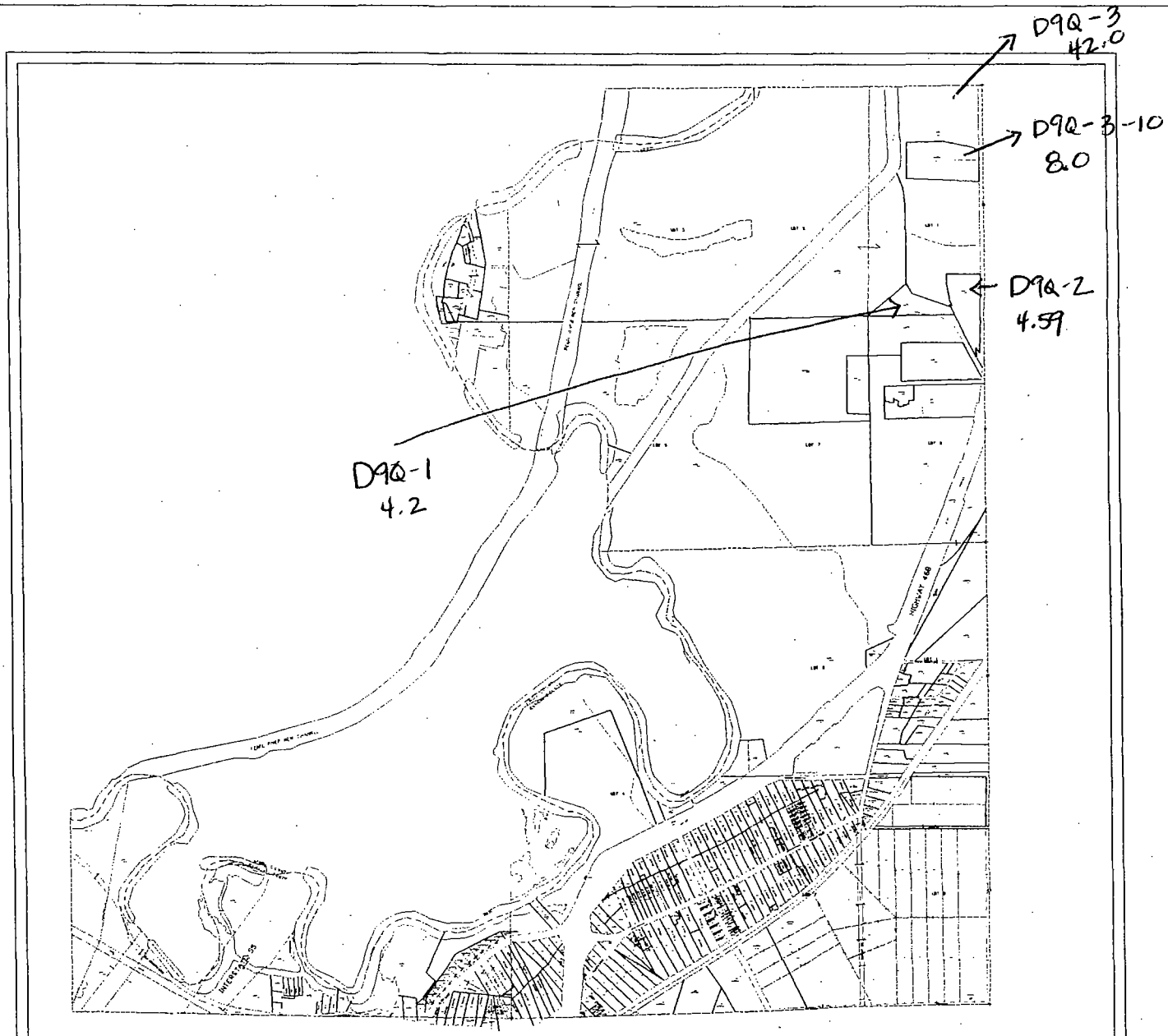
Sectional Breakdown



Base data (roads, cities, and counties) are from the Mississippi Spatial Database and Rankin County 911 Addressing GIS data. Street names, stream names and place names are from the Mississippi Department of Transportation County Map Series and Rankin County 911 Addressing GIS data. Although the information contained on this map is believed to be accurate, the Rankin County Board of Supervisors, Rankin County Tax Assessor, and State Institutions of Higher Learning/MARIS Technical Center makes no warranties as to the completeness, accuracy, reliability or suitability of this data for any use, or for any conclusions derived from this map.
Map created by the Rankin County Board of Supervisors GIS Lab
Lance M. Cooper

0 1 2 3 4 5 Miles

N W E S



TAX ASSESSOR

BARBARA BROOME COLLIER

RANKIN COUNTY , MISS
OWNERSHIP MAP
RANKIN COUNTY BOARD OF SUPERVISORS

2006

1 INCH = 400 FEET

LEGEND
PROPERTY LINES
COUNTY ROAD
STATE HIGHWAY
SECTION LINE
TOWNSHIP LINE
RAILROAD
POWER LINE
GAS LINE
CEMETERY
CHURCH
SCHOOL

THIS PROPERTY OWNERSHIP MAP IS FOR TAX ASSESSMENT PURPOSE ONLY. IT IS NOT INTENDED FOR CONVEYANCE OR TO ESTABLISH BOUNDARY DELINEATION. UPDATED BY THE TAX ASSESSOR'S OFFICE, BARBARA BROOME COLLIER, TAX ASSESSOR.

D9

N

RANKIN COUNTY LANDROLL DETAIL

PPIN	Parcel Number	Section	Township	Range
049712	D09Q000003 00010 (D9Q-3-10)	01	05	01

Assessed Owner
CONSTEEL CO INC
P O BOX 6175 JACKSON MS39288
Location
1625 FLOWOOD DR
Legal Description
LOT 50 X 844.37 X 416.64 X 432.86 X 350.04 X 70.72 IN NE4 NE4(PART OF LOT 1) DB 708 PG 0084 0080294

TAXES	Due	Paid
County	0.00	0.00
City	0.00	0.00
School	0.00	0.00
Total	0.00	0.00
Paid By		
Paid - Receipt #		
Date Paid	0/0/0	
# of Payments	0	
Penalty Paid	0	

Appraised Values	
Land Value	200,000.00
Improvement Value	427,260.00
Total	627,260.00
Assessed Values	
Land Value	30,000.00
Improvement Value	64,089.00
Total	94,089.00
Building Info.	
Year Built	1995
Base Area	20698
Adjusted Area	20760
Structure Code	039
Deed Info	
Book	
Page	
Date	0/0/0
Miscellaneous	

Close

RANKIN COUNTY LANDROLL DETAIL

PPIN	Parcel Number	Section	Township	Range
005816	D09Q000003 00000 (D9Q-3)	01	05	01

Assessed Owner
AVERY LEAD TRACK LLC
1 SPRING LAKE POINTE PEARL MS39208
Location
0 FLOWOOD DR
Legal Description
APPROX 34 AC IN LOT 1 (E2 NE4) & PT OF 100 X 500 STRIP IN NE COR NE4 SE4 DB 166 PG 400 0060559

TAXES	Due	Paid
County	115.54	115.54
City	55.50	55.50
School	141.14	141.14
Total	312.18	312.18
Paid By	AVERY LEAD TRACK LLC	
Paid - Receipt #	Y	
Date Paid	1/17/2008	
# of Payments	1	
Penalty Paid	0	

Appraised Values	
Land Value	12,900.00
Improvement Value	5,590.00
Total	18,490.00
Assessed Values	
Land Value	1,936.00
Improvement Value	839.00
Total	2,775.00
Building Info.	
Year Built	1950
Base Area	3740
Adjusted Area	3754
Structure Code	B42
Deed Info	
Book	731
Page	621
Date	5/15/1995
Miscellaneous	

Close

RANKIN COUNTY LANDROLL DETAIL

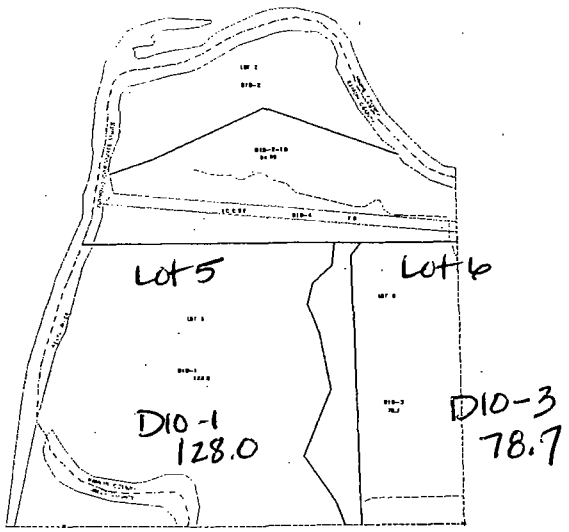
PPIN	Parcel Number	Section	Township	Range
005815	D09Q000002 00000 (D9Q-2)	01	05	01

Assessed Owner
CRC PROPERTIES LLC
1365 FLOWOOD DR FLOWOOD MS39232
Location
1353 FLOWOOD DR
Legal Description
APPROX 4.59 AC IN SE COR LOT 1 (SE NE) & IN NE COR LOT 8 (NE SE) W/S OF R/R DB 397 PG 125 0112679

TAXES	Due	Paid
County	4,070.41	4,070.41
City	1,971.62	1,971.62
School	5,013.83	5,013.83
Total	11,055.86	11,055.86
Paid By	CRC PROPERTIES LLC	
Paid - Receipt #	Y	
Date Paid	1/29/2008	
# of Payments	1	
Penalty Paid	0	

Appraised Values	
Land Value	114,750.00
Improvement Value	542,450.00
Total	657,200.00
Assessed Values	
Land Value	17,213.00
Improvement Value	81,368.00
Total	98,581.00
Building Info.	
Year Built	1979
Base Area	18000
Adjusted Area	18144
Structure Code	039
Deed Info	
Book	
Page	
Date	0/0/0
Miscellaneous	

Close



TAX ASSESSOR

BARBARA BROOME COLLIER

RANKIN COUNTY , MISS
OWNERSHIP MAP
RANKIN COUNTY BOARD OF SUPERVISORS

2006

1 INCH = 400 FEET

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D10

N

RANKIN COUNTY LANDROLL DETAIL

PPIN	Parcel Number	Section	Township	Range
005820	D10 000003 00000 (D10-3)	36	06	01

Assessed Owner
AVERY LEAD TRACK LLC
1 SPRING LAKE POINTE PEARL MS39208
Location
1649 FLOWOOD DR
Legal Description
THAT PT OF LOTS 5&6 SEC 36-5-1 E OF LEVEE DB 166 PG 400 0061259 DB 617 PG 0064 0022291

TAXES	Due	Paid
County	850.95	850.95
City	412.18	412.18
School	1,048.17	1,048.17
Total	2,311.30	2,311.30
Paid By	AVERY LEAD TRACK LLC	
Paid - Receipt #	Y	
Date Paid	1/17/2008	
# of Payments	1	
Penalty Paid	0	

Appraised Values	
Land Value	39,550.00
Improvement Value	97,840.00
Total	137,390.00
Assessed Values	
Land Value	5,933.00
Improvement Value	14,676.00
Total	20,609.00
Building Info.	
Year Built	1993
Base Area	6075
Adjusted Area	6075
Structure Code	039
Deed Info	
Book	731
Page	621
Date	5/15/1995
Miscellaneous	

Close

Reference 5
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

CREOSOTE SLOUGH
Water, Sediment and Fish Sampling
Associated with Gulf State Creosoting Co., Inc.
Flowood, Mississippi

U.S. EPA, Region 4
Science and Ecosystem Support Division
Ecological Assessment Branch
Athens, Georgia
November 2006

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

1.0 INTRODUCTION

1.1 BACKGROUND

The United States Environmental Protection Agency (EPA), Region 4, at the request of the Mississippi Department of Environmental Quality (MDEQ), asked the Science and Ecosystem Support Division (SESD) to assess fish in the area of the former Gulf States Creosoting Company. Since many people consume fish from Creosote Slough, the potential presence of polycyclic aromatic hydrocarbons (PAHs) in fish tissue had become a concern of the MDEQ.

The 141-acre tract, formerly called the Gulf States Creosoting Company, is located at 1625 Flowood Drive (Mississippi Hwy 468), Flowood, Rankin County, Mississippi. The facility lies within an area comprised of mixed industrial, commercial and residential applications (US EPA 2003). The property is currently being used as a horse farm and as a site for ConSteel Co., Inc. Currently, the southernmost building on the property is owned by ConSteel Co., Inc. (Figure 1), which is a steel fabricator and erector that constructs concrete forms, and concrete reinforcement accessories, as well as steel processing and fabrication equipment. The northernmost structures (i.e., metal barn and shed) are used to house tractors and helicopters for a local news station and are part of the horse farm (Figure 2). The horse farm has been operating on the property for approximately 9 years. The facility is bounded by railroad tracks to the north and east, with adjacent businesses to the south, and marshland/tributaries and the Pearl River to the west. The Creosote Slough side of the facility is bounded by a large levee which is fenced and locked (Figure 3). Creosote Slough can be accessed without going through the fenced area by way of the Pearl River.

Gulf States Creosoting Company owned the property as early as 1929 and operated it as a wood treating facility until the mid 1950s. During Gulf States operations, railroad cross ties were treated at the facility with coal-tar creosote and transported on and off-site by means of railroad box cars (US EPA 2003).

Prior to sampling, a site reconnaissance was completed in April, 2006, with assistance from Richard Ball of MDEQ during which time projected sampling stations were chosen. During the reconnaissance, a seep was observed and photographed on the eastern side of the slough near Station CS-04 (Map 1, and Figure 7).

1.2 OBJECTIVE

The primary objective of this survey was to collect a representative set of fish, sediment and water samples within Creosote Slough, which is adjacent to the former Gulf States Creosoting Company, and analyze them for polycyclic aromatic hydrocarbons (PAHs).

2.0 MATERIALS AND METHODS

2.1 SAMPLING LOCATONS

The study area was comprised of a reference station (CS-01) and three other stations (CS-02, CS-03, and CS-04) that covered the area from the railroad tracks on the north end of the property to the terminus of the slough at the Pearl River (Map 1).

2.2 SAMPLING LOGISTICS

The study was initiated and completed during the week of May 29, 2006. To collect the required information, the sampling was conducted when the water-level conditions were low and when there had been no major releases from the Ross Barnett Reservoir to the north of the site.

Personnel from the MDEQ assisted EPA with the collection of water, sediment and fish samples in accordance with the *Ecological Assessment Standard Operating Procedures and Quality Assurance Manual* (EASOPQAM, EPA 2002). Sample handling and chain-of-custody followed guidelines described in Section 2 of the EASOPQAM.

2.3 SAMPLE COLLECTION

Before sampling began at each water station, *in-situ* measurements of temperature, pH, conductivity, and dissolved oxygen readings were taken at mid-depth using a YSI 6920 multi-probe sonde and recorded in a bound field book (Table 1). Global Positioning System readings were recorded at each sediment sampling location using a Garmin 76S (Garmin 2002).

A surface water sample for PAH analyses was obtained as a single grab from the middle of each fished reach before the sediment or fish samples were collected. Sediment samples consisted of a composite of three surface samples collected with a scoop and bracket from a depth of 0-5 inches. Each sediment composite consisted of: one portion taken at the beginning of each fished reach, a second from the middle of the reach and a third from the end of the reach. No sediment or fish samples were collected from Station CS-04 due to inaccessibility. GPS locations for surface water and sediment sampling are in Table 2.

Fish were collected using an electro-fishing equipped boat. The size and species of the fish obtained depended upon their availability in each reach of the slough (Table 3). An attempt was made to collect the same species at each station. After collection, fish were measured, weighed, scaled or skinned, filleted, frozen, and processed for chemical analyses in accordance with the EASOPQAM. The tissue processing was completed in the Ecological Assessment Branch (EAB) Tissue Processing Lab. After preparation the tissue samples were sent to the SESD Analytical Support Branch (ASB) for analyses according to the *Analytical Support Branch Laboratory Operations and Quality Assurance Manual* (ASBLOQAM 2005) (Table 3).

3.0 RESULTS/DISCUSSION

3.1 SURFACE WATER

The PAH concentrations were compared to the Ambient Water Quality Criteria for Human Health (AWQC-HH) by personal communication with Kevin Koporek, a Region 4, Toxicologist. The results of surface water samples from the background station (CS-01), and stations CS-02 and CS-03, were not detected at or below the minimum reporting limit (MRL) requested for PAHs. At station CS-03, there was an oil sheen present on the water surface. The surface water sample from CS-04 contained four PAHs and a strong creosote odor was noted as the sampler walked out into the slough to collect the sample. CS-04 is located in close proximity to the seep that was observed during the reconnaissance.

Detected PAHs from CS-04 are shown in Table 4. Detected PAHs were reviewed by the toxicologist whose report stated that the reported levels of acenaphthene and fluorene were well below the federal AWQC-HH. The two AWQC-HH values are based on 1) eating aquatic organisms; 2) drinking the water and ingesting aquatic organisms. There are no AWQC-HH for 2-methylnaphthalene or phenanthrene. The reported levels for these two compounds, however, were well below the AWQC-HH for other noncarcinogenic PAH compounds (EPA 2006a,b).

3.2 SEDIMENTS

The PAH concentrations were compared to the Soil Preliminary Remediation Goals (PRG)/ranges. PRGs are tools for evaluating and cleaning up soils at contaminated sites (US EPA 2004). They are risk-based concentrations that are intended to assist risk assessors and others in initial screening-level evaluations of environmental measurements. The PRGs contained in the Region 9 PRG Table are generic; they are calculated without site specific information. PRGs should be viewed as Agency guidelines, not legally enforceable standards. They are used for site "screening" and as initial cleanup goals if applicable (EPA 2004).

No PAHs were detected at or below the MRL in sediment samples CS-01 and CS-02. Seven PAHs were detected in the sediment at CS-03 (See Table 4). Two tentatively identified compounds (TIC) were identified as well at CS-03. No sediment sample was collected from CS-04 because the presence of extremely soft sediments caused unsafe conditions and there was no boat access. Based on the Region 9 PRGs, the concentrations of the contaminants present in the sediment samples were below or within the EPA risk range based on human contact with soils. This is a conservative assessment for human health as the exposure to sediments should be much less than for residential soils.

3.3 FISH

In all fish tissue samples, PAHs were not detected and the reporting limits were satisfactory. An EPA reference on considering fish tissue data, *Guidance for Assessing Chemical Contaminant Data for use in Fish Advisories, Vol. 1 (*US EPA. 2000*),* states that fish have the ability to metabolize PAHs and this may explain why they are frequently not detected or found at very low concentrations even from areas that may be heavily contaminated with PAHs.

4.0 CONCLUSION

Overall, levels of PAHs detected in surface water, sediment, and fish tissues during the May, 2006, sampling event are not of concern for human exposure at this time. However, EPA recommends additional sampling in the seep area, identified during the reconnaissance, to further delineate any potential problems that may be associated with the seep.

5.0 REFERENCES

GARMIN 2002. GARMIN GPSMAP *76S Chartplotting Receiver Manual and Reference Guide. GARMIN International, Inc.* Olathe, Kansas.

US EPA 2006a. *National Recommended Water Quality Criteria: 2006.* Office of Water/Office of Science and Technology. [http://www.epa.gov/waterscience/criteria/wqcriteria.html]

US EPA 2006b. EPA Region III Risk Based Concentration Table for Human Health Risk Assessment, October 2006 update. [http://www.epa.gov/reg3hwmd/risk/human/index.htm]

US EPA 2005. *Analytical Support Branch Laboratory Operations and Quality Assurance Manual.* US Environmental Protection Agency, Region 4, Science and Ecosystem Support Division, Analytical Support Branch, Athens, GA.

US EPA 2004. Preliminary Remediation Goal (PRGs), EPA Region 9, updated October 2004. [http://www.epa.gov/region09/waste/sfund/prg/index.html]

US EPA 2003. *Draft Preliminary Assessment/Site Inspection Report, Gulf States Creosoting Company* prepared by Weston Solutions, Inc, expressly for EPA.

US EPA 2002. *Ecological Assessment Standard Operating Procedures and Quality Assurance Manual.* US Environmental Protection Agency, Region 4, Science and Ecosystem Support Division, Ecological Assessment Branch, Athens, GA.

US EPA 2000b. *Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories,* Third Edition, EPA 823-B-00-007, November 2000. http://www.epa.gov/waterscience/fish/guidance.html]

Table 1: ***In-situ*** **Measurements at Creosote Slough, May, 2006.**

Station (Total Depth)	Date/Time 05/31/06	Sample Depth	Temperature °C	Specific Conductance µs/cm	Dissolved Oxygen mg/L	pH
CS-01 (3.0 ft.)	0745	1.7 ft.	25.99	35	1.33	4.46
CS-02 (6.5 ft.)	0940	3.5 ft.	23.95	101	0.45	5.16
CS-03 (4.5 ft.)	1350	2.0 ft.	27.90	80	8.84	6.01
CS-04 (2.5 ft.)	1310	0.5 ft.	25.63	117	0.54	5.25

Table 2: Latitude and Longitude of Creosote Slough Sampling Stations, May, 2006

Station ID	GPS Coordinates*	
CS-01-A (Surface Water & Sediment)	32° 19.069' N	90° 08.963' W
CS-01(Sediment)	32° 19.077' N	90° 08.941' W
CS-01-B (Sediment) **	32° 19.082' N	90° 08.961' W
CS-02-A (Surface Water & Sediment)	32° 18.795' N	90° 08.844' W
CS-02 (Sediment)	32° 18.780' N	90° 08.890' W
CS-02-B (Sediment)	32° 18.780' N	90° 08.820' W
CS-03-A (Sediment)	32° 18.495' N	90° 08.952' W
CS-03 (Surface Water & Sediment)	32° 18.464' N	90° 09.086' W
CS-03-B(Sediment)	32° 18.442' N	90° 09.231' W
CS-04 (Surface Water)	32° 18.631' N	90° 08.779' W

* North American Datum (NAD) 1983.

** Fish were collected along the entire A to B reach for each station.

Table 3. Physical parameters of fish samplescollected from Creosote Slough, May, 2006							-6-	
STATION-FISH ID	DATE COLLECTED	DATE FILLETED	TOTAL WT (g)	TOTAL LENGTH (mm)	TOTAL FILET WT. (g)	L. FILET WT. (g)	R. FILET WT. (g)	COMMENTS ANALYSIS ID
CS01-BLC1	5/31/2006	6/2/2006	243	245	112	55	57	Composite of 2
CS01-BLC2	5/31/2006	6/2/2006	186	245	81	41	40	CS01-BLC
CS01-RSF1	5/31/2006	6/2/2006	84	160	27	15	12	Composite of 3
CS01-RSF2	5/31/2006	6/2/2006	109	165	40	21	19	CS01-RSF
CS01-RSF3	5/31/2006	6/2/2006	115	175	41	21	20	
CS01-LMB1	5/31/2006	6/2/2006	1248	425	403	210	193	Composite of 2
CS01-LMB2	5/31/2006	6/2/2006	1011	410	381	194	216	CS01-LMB
CS01-LCS1	5/31/2006	6/2/2006	385	290	134	68	66	Single
CS01-SPG1	5/31/2006	6/2/2006	877	650	223	104	119	Single
CS01-BRB1	5/31/2006	6/2/2006	990	405	282	152	130	Composite of 2
CS01-BRB2	5/31/2006	6/2/2006	890	390	264	124	141	CS01-BRB
CS02-BLC1 (L)	5/31/2006	6/2/2006	208	235	93	48	45	Composite of 3
CS02-BLC2 (L)	5/31/2006	6/2/2006	193	230	84	43	41	Large
CS02-BLC3 (L)	5/31/2006	6/2/2006	193	225	87	46	41	CS02-LBCL
CS02-LMB1	5/31/2006	6/2/2006	830	380	321	171	150	Composite of 2
CS02-LMB2	5/31/2006	6/2/2006	644	360	247	129	118	CS02-LMB
CS02-SPG1	5/31/2006	6/2/2006	292	460	79	39	40	Single
CS02-LCS1	5/31/2006	6/2/2006	261	255	108	58	50	Single
CS02-BLG1	5/31/2006	6/2/2006	120	174	43	22	21	Composite of 5
CS02-BLG2	5/31/2006	6/2/2006	74	152	30	15	15	CS02-BLG
CS02-BLG3	5/31/2006	6/2/2006	92	158	37	19	18	
CS02-BLG4	5/31/2006	6/2/2006	68	152	28	14	14	
CS02-BLG5	5/31/2006	6/2/2006	68	149	26	15	11	
CS02-BLC1 (S)	5/31/2006	6/2/2006	62	162	26	14	12	Composite of 3
CS02-BLC2 (S)	5/31/2006	6/2/2006	62	162	26	14	12	Small
CS02-BLC3 (S)	5/31/2006	6/2/2006	51	163	22	12	10	CS02-BLCS
CS03-BLC1	5/31/2006	6/2/2006	106	190	93	48	45	Composite of 2
CS03-BLC2	5/31/2006	6/2/2006	202	230	44	23	21	CS03-BLC
CS03-BLG1	5/31/2006	6/2/2006	64	145	26	14	12	Composite of 3
CS03-BLG2	5/31/2006	6/2/2006	58	140	21	11	10	CS03-BLG
CS03-BLG3	5/31/2006	6/2/2006	51	135	18	10	8	
CSO3-SPS1	5/31/2006	6/2/2006	964	410	383	199	184	Single
CS03-BRB1	5/31/2006	6/2/2006	759	355	231	121	110	Single

Table 3. Continued								-7-
STATION-FISH ID	DATE COLLECTED	DATE FILLETED	TOTAL WT (g)	TOTAL LENGTH (mm)	TOTAL FILET WT. (g)	L. FILET WT. (g)	R. FILET WT. (g)	COMMENTS
CS03-RDS1	5/31/2006	6/2/2006	142	190	50	26	24	Composite of 5
CS03-RDS2	5/31/2006	6/2/2006	146	189	52	27	25	CS03-RDS
CS03-RDS3	5/31/2006	6/2/2006	137	189	45	24	21	
CS03-RDS4	5/31/2006	6/2/2006	143	190		26	25	
CS03-RDS5	5/31/2006	6/2/2006	85	160	31	17	14	
CS03-LMB1	5/31/2006	6/2/2006	496	325	189	99	90	Composite of 4
CS03-LMB2	5/31/2006	6/2/2006	278	274	107	55	52	CS03-LMB
CS03-LMB3	5/31/2006	6/2/2006	432	314	178	92	86	
CS03-LMB4	5/31/2006	6/2/2006	430	314	178	90	88	

BLC = BLACK CRAPPIE - *Pomoxis nigromaculatus*
BLG = BLUEGILL - *Lepomis macrochirus*
BRB = BROWN BULLHEAD - *Ameiurus nebulosus*
LCS = LAKE CHUB SUCKER - *Erimyzon sucetta*
LMB = LARGEMOUTH BASS - *Micropterus salmoides*
RDS = REDBREAST SUNFISH - *Lepomis auritus*
RSF = REDEAR SUNFISH - *Lepomis microlophus*
SPG = SPOTTED GAR - *Lepisosteus oculatus*
SPS = SPOTTED SUCKER - Minytrema melanops

Table 4: Detected PAHs in surface water and sediment in Creosote Slough, May, 2006.

Surface Water (CS-04) Grab	**µg/L**	**AWQC* µg/L**
2-Methylnaphthalene	1.8	NA
Acenaphthene	12.0	670/990
Fluorene	9.3	1100/5300
Phenanthrene	2.8	NA
Sediments (CS-03) Composite	**mg/kg**	**Soil PRG/range mg/kg**
Fluoranthene	0.2	2300
Pyrene	0.13	2300
Benzo(a)anthracene	0.078	0.62-62
Chrysene	0.13	62-6200
Benzo(b)fluoranthene	0.12	0.62-62
Benzo(k)fluoranthene	0.12	6.2-620
Benzo(a)pyrene	0.066	0.062-6.2

AWQC = Ambient Water Quality Criteria
* Chronic/Acute water quality criteria
PRG = Preliminary Remediation Goal

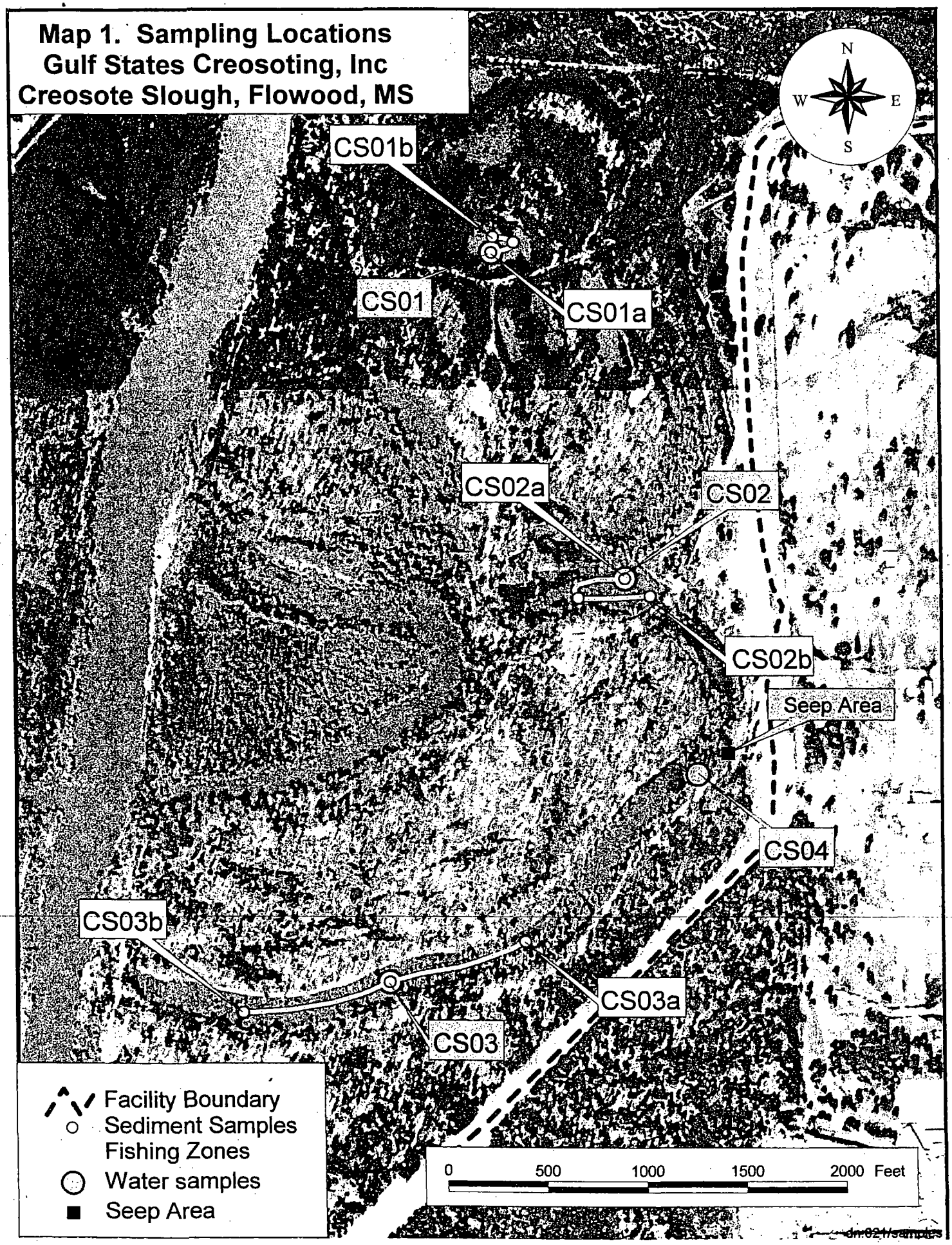
Map 1. Sampling Locations
Gulf States Creosoting, Inc
Creosote Slough, Flowood, MS
N
W
E
S
CS01b
CS01
CS01a
CS02a
CS02
CS02b
Seep Area
CS04
CS03b
CS03a
CS03
Facility Boundary
Sediment Samples
Fishing Zones
Water samples
Seep Area
0
500
1000
1500
2000 Feet

Figure 1. ConSteel Co., Inc

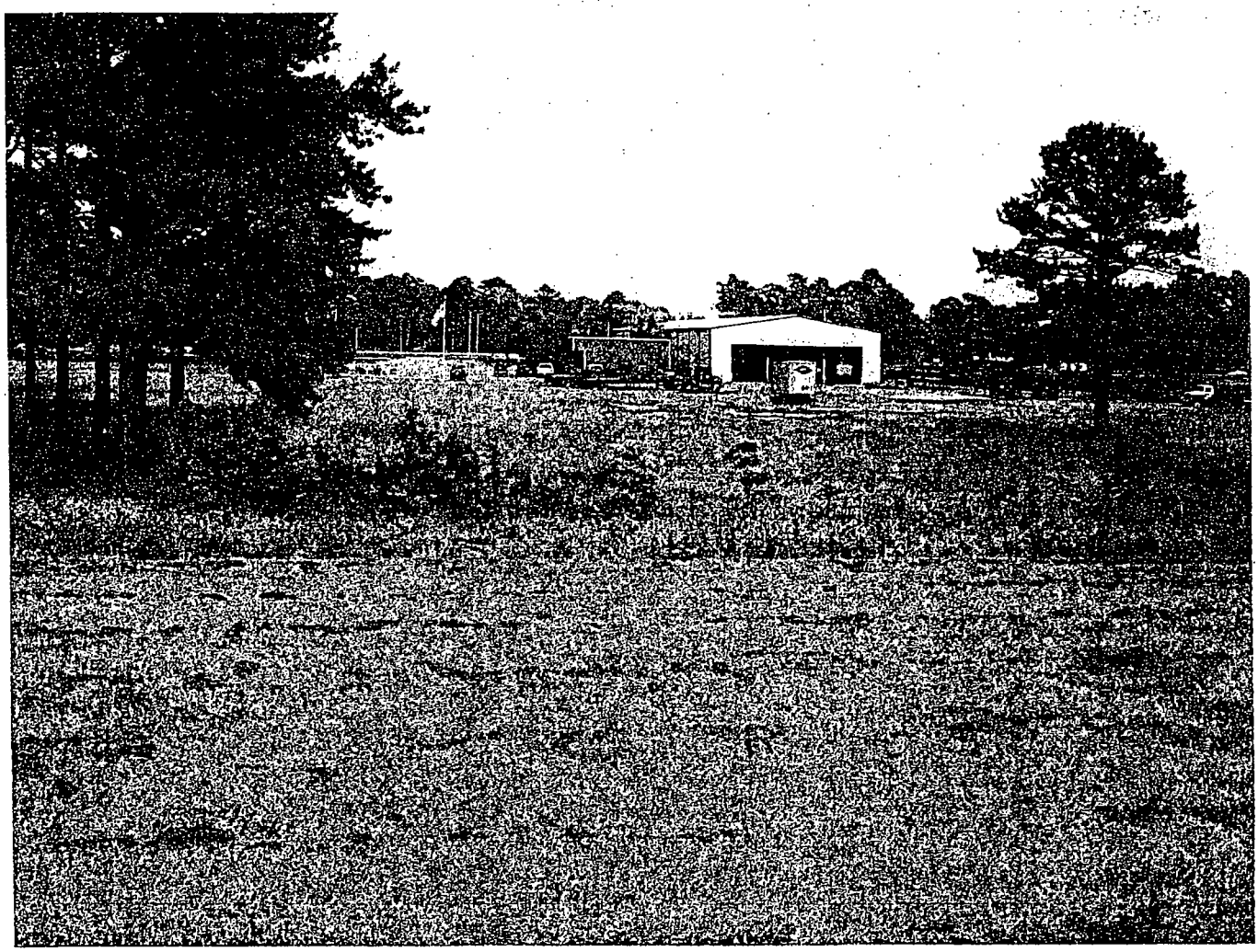

Figure 2. Horse barn and associated news helicopter

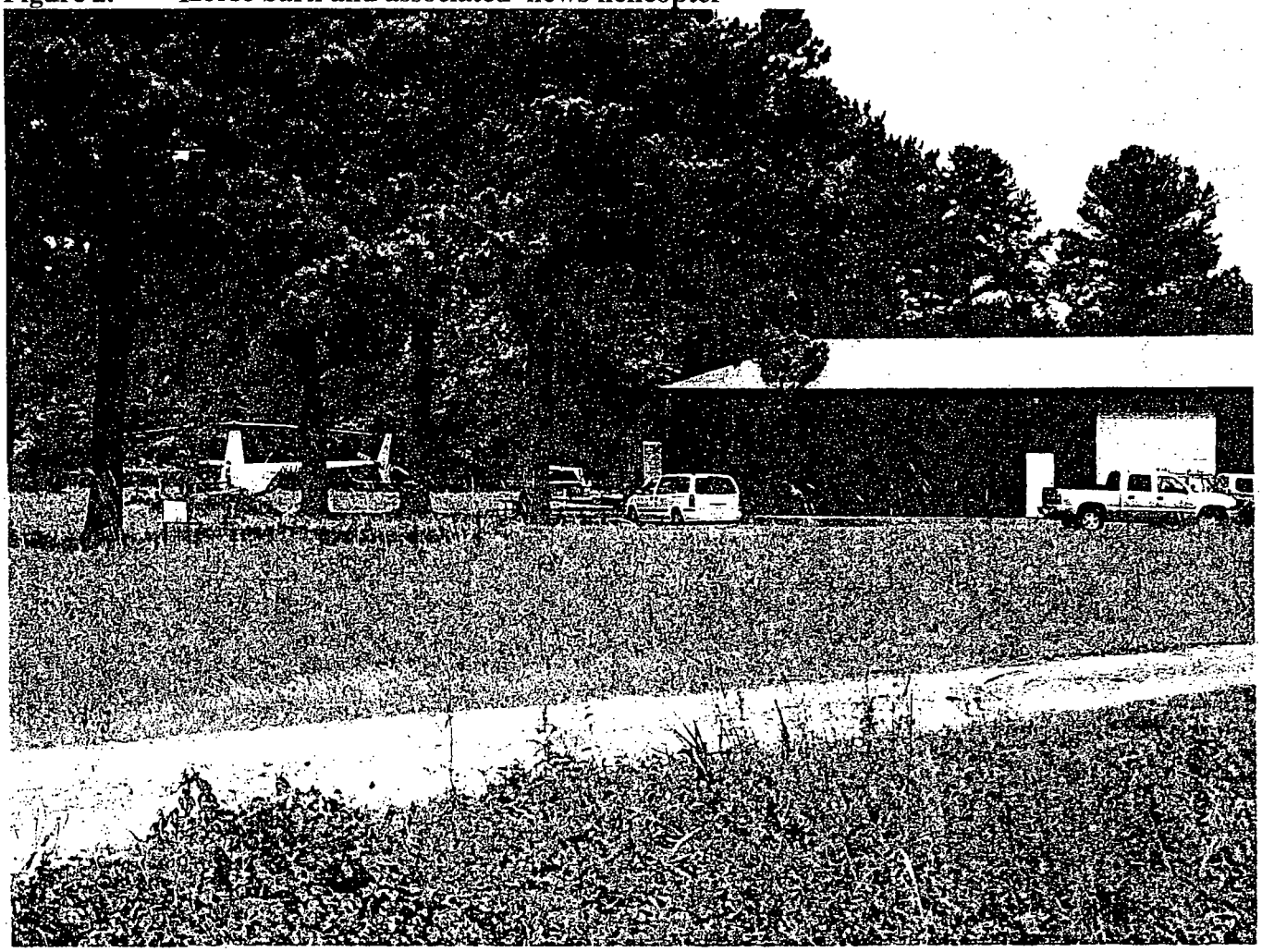

Figure 3. Levee separating former Gulf States Creosoting from Creosote Slough

Figure 4. CS-01 Reference Station

Figure 5. Station CS-02

Figure 6. Stations CS-03 and CS-04

Figure 7. Seep Area

APPENDIX I

Water, Sediment and Tissue Data

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/16/2006 14:39**

Sample **5727** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: CS-01-SW /

Media: SURFACE WATER

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006 07:45
Ending:

RESULTS	UNITS	ANALYTE
1.2 U	UG/L	2-Methylnaphthalene
1.4 U	UG/L	Naphthalene
1.3 U	UG/L	Acenaphthylene
1.2 U	UG/L	Acenaphthene
1.5 U	UG/L	Fluorene
1.5 U	UG/L	Phenanthrene
1.6 U	UG/L	Anthracene
1.6 U	UG/L	Fluoranthene
1.5 U	UG/L	Pyrene
1.3 U	UG/L	Benzo(a)Anthracene
1.5 U	UG/L	Chrysene
1.0 U	UG/L	Benzo(b)Fluoranthene
1.5 U	UG/L	Benzo(k)Fluoranthene
1.0 U	UG/L	Benzo-a-Pyrene
1.2 U	UG/L	Indeno (1,2,3-cd) Pyrene
1.3 U	UG/L	Dibenzo(a,h)Anthracene
1.0 U	UG/L	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/16/2006 14:39**

Sample **5728** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS-01-SD /
Media: SEDIMENT

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006 08:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
39 UJ	UG/KG	2-Methylnaphthalene
39 U	UG/KG	Naphthalene
39 U	UG/KG	Acenaphthylene
39 U	UG/KG	Acenaphthene
39 U	UG/KG	Fluorene
39 U	UG/KG	Phenanthrene
39 U	UG/KG	Anthracene
39 U	UG/KG	Fluoranthene
39 U	UG/KG	Pyrene
39 U	UG/KG	Benzo(a)Anthracene
39 U	UG/KG	Chrysene
39 U	UG/KG	Benzo(b)Fluoranthene
39 U	UG/KG	Benzo(k)Fluoranthene
39 U	UG/KG	Benzo-a-Pyrene
39 U	UG/KG	Indeno (1,2,3-cd) Pyrene
39 U	UG/KG	Dibenzo(a,h)Anthracene
58	%	% Moisture
39 U	UG/KG	Benzo(ghi)Perylene

J-qualified: 2-Methylnaphthalene recovery outside QC Limits

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/16/2006 14:39**

Sample **5729** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: CS-02-SW /

Media: SURFACE WATER

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006 09:40
Ending:

RESULTS	UNITS	ANALYTE
1.1 U	UG/L	2-Methylnaphthalene
1.3 U	UG/L	Naphthalene
1.2 U	UG/L	Acenaphthylene
1.1 U	UG/L	Acenaphthene
1.4 U	UG/L	Fluorene
1.4 U	UG/L	Phenanthrene
1.5 U	UG/L	Anthracene
1.5 U	UG/L	Fluoranthene
1.4 U	UG/L	Pyrene
1.2 U	UG/L	Benzo(a)Anthracene
1.4 U	UG/L	Chrysene
1.0 U	UG/L	Benzo(b)Fluoranthene
1.4 U	UG/L	Benzo(k)Fluoranthene
1.0 U	UG/L	Benzo-a-Pyrene
1.1 U	UG/L	Indeno (1,2,3-cd) Pyrene
1.2 U	UG/L	Dibenzo(a,h)Anthracene
1.0 U	UG/L	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 08/16/2006 14:39

Sample **5730** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: CS-02-SD /

Media: SEDIMENT

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006 09:55
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
72 UJ	UG/KG	2-Methylnaphthalene
72 U	UG/KG	Naphthalene
72 U	UG/KG	Acenaphthylene
72 U	UG/KG	Acenaphthene
72 U	UG/KG	Fluorene
72 U	UG/KG	Phenanthrene
72 U	UG/KG	Anthracene
72 U	UG/KG	Fluoranthene
72 U	UG/KG	Pyrene
72 U	UG/KG	Benzo(a)Anthracene
72 U	UG/KG	Chrysene
72 U	UG/KG	Benzo(b)Fluoranthene
72 U	UG/KG	Benzo(k)Fluoranthene
72 U	UG/KG	Benzo-a-Pyrene
72 U	UG/KG	Indeno (1,2,3-cd) Pyrene
72 U	UG/KG	Dibenzo(a,h)Anthracene
77	%	% Moisture
72 U	UG/KG	Benzo(ghi)Perylene

J-qualified: 2-Methylnaphthalene recovery outside QC Limits

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 08/16/2006 14:39

Sample **5732** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: CS-03-SW /

Media: SURFACE WATER

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006 13:50
Ending:

RESULTS	UNITS	ANALYTE
1.2 U	UG/L	2-Methylnaphthalene
1.2 U	UG/L	Naphthalene
1.1 U	UG/L	Acenaphthylene
1.0 U	UG/L	Acenaphthene
1.3 U	UG/L	Fluorene
1.3 U	UG/L	Phenanthrene
1.4 U	UG/L	Anthracene
1.4 U	UG/L	Fluoranthene
1.3 U	UG/L	Pyrene
1.1 U	UG/L	Benzo(a)Anthracene
1.3 U	UG/L	Chrysene
0.95 U	UG/L	Benzo(b)Fluoranthene
1.3 U	UG/L	Benzo(k)Fluoranthene
0.95 U	UG/L	Benzo-a-Pyrene
1.0 U	UG/L	Indeno (1,2,3-cd) Pyrene
1.1 U	UG/L	Dibenzo(a,h)Anthracene
0.95 U	UG/L	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

XTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/16/2006 14:39**

Sample **5733** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS-03-SD /
Media: SEDIMENT

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006 14:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
61 UJ	UG/KG	2-Methylnaphthalene
61 U	UG/KG	Naphthalene
61 U	UG/KG	Acenaphthylene
61 U	UG/KG	Acenaphthene
61 U	UG/KG	Fluorene
61 U	UG/KG	Phenanthrene
61 U	UG/KG	Anthracene
200	UG/KG	Fluoranthene
130	UG/KG	Pyrene
78	UG/KG	Benzo(a)Anthracene
130	UG/KG	Chrysene
120	UG/KG	Benzo(b)Fluoranthene
120	UG/KG	Benzo(k)Fluoranthene
66	UG/KG	Benzo-a-Pyrene
61 U	UG/KG	Indeno (1,2,3-cd) Pyrene
61 U	UG/KG	Dibenzo(a,h)Anthracene
73	%	% Moisture
61 U	UG/KG	Benzo(ghi)Perylene

J-qualified: 2-Methylnaphthalene recovery outside QC Limits

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

XTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/16/2006 14:39**

Sample **5731** FY **2006** Project: **06-0436**
PAH Scan
Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS-04-SW /
Media: SURFACE WATER

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006 13:10
Ending:

RESULTS	UNITS	ANALYTE
1.8	UG/L	2-Methylnaphthalene
1.3 U	UG/L	Naphthalene
1.2 U	UG/L	Acenaphthylene
12	UG/L	Acenaphthene
9.3	UG/L	Fluorene
2.8	UG/L	Phenanthrene
1.5 U	UG/L	Anthracene
1.5 U	UG/L	Fluoranthene
1.4 U	UG/L	Pyrene
1.2 U	UG/L	Benzo(a)Anthracene
1.4 U	UG/L	Chrysene
1.0 U	UG/L	Benzo(b)Fluoranthene
1.4 U	UG/L	Benzo(k)Fluoranthene
1.0 U	UG/L	Benzo-a-Pyrene
1.1 U	UG/L	Indeno (1,2,3-cd) Pyrene
1.2 U	UG/L	Dibenzo(a,h)Anthracene
1.0 U	UG/L	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 08/28/2006 10:39

Sample **6082** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS01-BLC /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/28/2006 10:39**

Sample **6086** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS01-RSF /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.017 U	MG/KG	2-Methylnaphthalene
0.017 U	MG/KG	Naphthalene
0.017 U	MG/KG	Acenaphthylene
0.017 U	MG/KG	Acenaphthene
0.017 U	MG/KG	Fluorene
0.017 U	MG/KG	Phenanthrene
0.017 U	MG/KG	Anthracene
0.017 U	MG/KG	Fluoranthene
0.017 U	MG/KG	Pyrene
0.017 U	MG/KG	Benzo(a)Anthracene
0.017 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.017 U	MG/KG	Benzo(k)Fluoranthene
0.017 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.017 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/28/2006 10:39**

Sample **6085** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS01-LMB /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.017 U	MG/KG	2-Methylnaphthalene
0.017 U	MG/KG	Naphthalene
0.017 U	MG/KG	Acenaphthylene
0.017 U	MG/KG	Acenaphthene
0.017 U	MG/KG	Fluorene
0.017 U	MG/KG	Phenanthrene
0.017 U	MG/KG	Anthracene
0.017 U	MG/KG	Fluoranthene
0.017 U	MG/KG	Pyrene
0.017 U	MG/KG	Benzo(a)Anthracene
0.017 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.017 U	MG/KG	Benzo(k)Fluoranthene
0.017 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.017 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 08/28/2006 10:39

Sample **6084** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: CS01-LCS1 /

Media: FISH

Produced by: Revell, Dennis

Requestor: Donna Webster

Project Leader: PMEYER

Beginning: 05/31/2006

Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.017 U	MG/KG	2-Methylnaphthalene
0.017 U	MG/KG	Naphthalene
0.017 U	MG/KG	Acenaphthylene
0.017 U	MG/KG	Acenaphthene
0.017 U	MG/KG	Fluorene
0.017 U	MG/KG	Phenanthrene
0.017 U	MG/KG	Anthracene
0.017 U	MG/KG	Fluoranthene
0.017 U	MG/KG	Pyrene
0.017 U	MG/KG	Benzo(a)Anthracene
0.017 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.017 U	MG/KG	Benzo(k)Fluoranthene
0.017 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.017 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/28/2006 10:39**

Sample **6087** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS01-SPG1 /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

RACTABLES SAMPLE ANALYSIS — EPA - REGION IV SESD, ATHENS, GA — Production Date: 11/15/2006 14:10

Sample 6090 FY 2006 Project: 06-0436

PAH Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: CS02-BLG /

Media: FISH

Produced by: Revell, Dennis

Requestor: Donna Webster

Project Leader: PMEYER

Beginning: 05/31/2006

Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
dentification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
\-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/16/2006 14:39**

Sample **5729** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS-02-SW /
Media: SURFACE WATER

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006 09:40
Ending:

RESULTS	UNITS	ANALYTE
1.1 U	UG/L	2-Methylnaphthalene
1.3 U	UG/L	Naphthalene
1.2 U	UG/L	Acenaphthylene
1.1 U	UG/L	Acenaphthene
1.4 U	UG/L	Fluorene
1.4 U	UG/L	Phenanthrene
1.5 U	UG/L	Anthracene
1.5 U	UG/L	Fluoranthene
1.4 U	UG/L	Pyrene
1.2 U	UG/L	Benzo(a)Anthracene
1.4 U	UG/L	Chrysene
1.0 U	UG/L	Benzo(b)Fluoranthene
1.4 U	UG/L	Benzo(k)Fluoranthene
1.0 U	UG/L	Benzo-a-Pyrene
1.1 U	UG/L	Indeno (1,2,3-cd) Pyrene
1.2 U	UG/L	Dibenzo(a,h)Anthracene
1.0 U	UG/L	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/16/2006 14:39**

Sample **5730** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS-02-SD /
Media: SEDIMENT

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006 09:55
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
72 UJ	UG/KG	2-Methylnaphthalene
72 U	UG/KG	Naphthalene
72 U	UG/KG	Acenaphthylene
72 U	UG/KG	Acenaphthene
72 U	UG/KG	Fluorene
72 U	UG/KG	Phenanthrene
72 U	UG/KG	Anthracene
72 U	UG/KG	Fluoranthene
72 U	UG/KG	Pyrene
72 U	UG/KG	Benzo(a)Anthracene
72 U	UG/KG	Chrysene
72 U	UG/KG	Benzo(b)Fluoranthene
72 U	UG/KG	Benzo(k)Fluoranthene
72 U	UG/KG	Benzo-a-Pyrene
72 U	UG/KG	Indeno (1,2,3-cd) Pyrene
72 U	UG/KG	Dibenzo(a,h)Anthracene
77	%	% Moisture
72 U	UG/KG	Benzo(ghi)Perylene

J-qualified: 2-Methylnaphthalene recovery outside QC Limits

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/16/2006 14:39**

Sample **5732** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: CS-03-SW /

Media: SURFACE WATER

Produced by: Revell, Dennis

Requestor: Donna Webster

Project Leader: PMEYER

Beginning: 05/31/2006 13:50

Ending:

RESULTS	UNITS	ANALYTE
1.2 U	UG/L	2-Methylnaphthalene
1.2 U	UG/L	Naphthalene
1.1 U	UG/L	Acenaphthylene
1.0 U	UG/L	Acenaphthene
1.3 U	UG/L	Fluorene
1.3 U	UG/L	Phenanthrene
1.4 U	UG/L	Anthracene
1.4 U	UG/L	Fluoranthene
1.3 U	UG/L	Pyrene
1.1 U	UG/L	Benzo(a)Anthracene
1.3 U	UG/L	Chrysene
0.95 U	UG/L	Benzo(b)Fluoranthene
1.3 U	UG/L	Benzo(k)Fluoranthene
0.95 U	UG/L	Benzo-a-Pyrene
1.0 U	UG/L	Indeno (1,2,3-cd) Pyrene
1.1 U	UG/L	Dibenzo(a,h)Anthracene
0.95 U	UG/L	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

XTRACTABLES SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 08/16/2006 14:39

Sample **5733** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS-03-SD /
Media: SEDIMENT

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006 14:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
61 UJ	UG/KG	2-Methylnaphthalene
61 U	UG/KG	Naphthalene
61 U	UG/KG	Acenaphthylene
61 U	UG/KG	Acenaphthene
61 U	UG/KG	Fluorene
61 U	UG/KG	Phenanthrene
61 U	UG/KG	Anthracene
200	UG/KG	Fluoranthene
130	UG/KG	Pyrene
78	UG/KG	Benzo(a)Anthracene
130	UG/KG	Chrysene
120	UG/KG	Benzo(b)Fluoranthene
120	UG/KG	Benzo(k)Fluoranthene
66	UG/KG	Benzo-a-Pyrene
61 U	UG/KG	Indeno (1,2,3-cd) Pyrene
61 U	UG/KG	Dibenzo(a,h)Anthracene
73	%	% Moisture
61 U	UG/KG	Benzo(ghi)Perylene

I-qualified: 2-Methylnaphthalene recovery outside QC Limits

J-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

KTRACTABLES SAMPLE ANALYSIS — EPA - REGION IV SESD, ATHENS, GA — **Production Date: 08/16/2006 14:39**

Sample **5731** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: CS-04-SW /

Media: SURFACE WATER

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006 13:10
Ending:

RESULTS	UNITS	ANALYTE
1.8	UG/L	2-Methylnaphthalene
1.3 U	UG/L	Naphthalene
1.2 U	UG/L	Acenaphthylene
12	UG/L	Acenaphthene
9.3	UG/L	Fluorene
2.8	UG/L	Phenanthrene
1.5 U	UG/L	Anthracene
1.5 U	UG/L	Fluoranthene
1.4 U	UG/L	Pyrene
1.2 U	UG/L	Benzo(a)Anthracene
1.4 U	UG/L	Chrysene
1.0 U	UG/L	Benzo(b)Fluoranthene
1.4 U	UG/L	Benzo(k)Fluoranthene
1.0 U	UG/L	Benzo-a-Pyrene
1.1 U	UG/L	Indeno (1,2,3-cd) Pyrene
1.2 U	UG/L	Dibenzo(a,h)Anthracene
1.0 U	UG/L	Benzo(ghi)Perylene

J-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 08/28/2006 10:39

Sample **6082** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS01-BLC /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | EPA - REGION IV SESD, ATHENS, GA | Production Date: 08/28/2006 10:39

Sample 6086 FY 2006 Project: 06-0436

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS01-RSF /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.017 U	MG/KG	2-Methylnaphthalene
0.017 U	MG/KG	Naphthalene
0.017 U	MG/KG	Acenaphthylene
0.017 U	MG/KG	Acenaphthene
0.017 U	MG/KG	Fluorene
0.017 U	MG/KG	Phenanthrene
0.017 U	MG/KG	Anthracene
0.017 U	MG/KG	Fluoranthene
0.017 U	MG/KG	Pyrene
0.017 U	MG/KG	Benzo(a)Anthracene
0.017 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.017 U	MG/KG	Benzo(k)Fluoranthene
0.017 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.017 U	MG/KG	Benzo(ghi)Perylene

J-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/28/2006 10:39**

Sample **6085** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS01-LMB /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.017 U	MG/KG	2-Methylnaphthalene
0.017 U	MG/KG	Naphthalene
0.017 U	MG/KG	Acenaphthylene
0.017 U	MG/KG	Acenaphthene
0.017 U	MG/KG	Fluorene
0.017 U	MG/KG	Phenanthrene
0.017 U	MG/KG	Anthracene
0.017 U	MG/KG	Fluoranthene
0.017 U	MG/KG	Pyrene
0.017 U	MG/KG	Benzo(a)Anthracene
0.017 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.017 U	MG/KG	Benzo(k)Fluoranthene
0.017 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.017 U	MG/KG	Benzo(ghi)Perylene

J-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/28/2006 10:39**

Sample **6084** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS01-LCS1 /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.017 U	MG/KG	2-Methylnaphthalene
0.017 U	MG/KG	Naphthalene
0.017 U	MG/KG	Acenaphthylene
0.017 U	MG/KG	Acenaphthene
0.017 U	MG/KG	Fluorene
0.017 U	MG/KG	Phenanthrene
0.017 U	MG/KG	Anthracene
0.017 U	MG/KG	Fluoranthene
0.017 U	MG/KG	Pyrene
0.017 U	MG/KG	Benzo(a)Anthracene
0.017 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.017 U	MG/KG	Benzo(k)Fluoranthene
0.017 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.017 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 08/28/2006 10:39

Sample **6083** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS01-BRB /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/28/2006 10:39**

Sample **6088** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS02-BLCL /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.017 U	MG/KG	2-Methylnaphthalene
0.017 U	MG/KG	Naphthalene
0.017 U	MG/KG	Acenaphthylene
0.017 U	MG/KG	Acenaphthene
0.017 U	MG/KG	Fluorene
0.017 U	MG/KG	Phenanthrene
0.017 U	MG/KG	Anthracene
0.017 U	MG/KG	Fluoranthene
0.017 U	MG/KG	Pyrene
0.017 U	MG/KG	Benzo(a)Anthracene
0.017 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.017 U	MG/KG	Benzo(k)Fluoranthene
0.017 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.017 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/28/2006 10:39**

Sample **6092** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS02-LMB /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.019 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/28/2006 10:39**

Sample **6093** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: CS02SPG1 /

Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.017 U	MG/KG	2-Methylnaphthalene
0.017 U	MG/KG	Naphthalene
0.017 U	MG/KG	Acenaphthylene
0.017 U	MG/KG	Acenaphthene
0.017 U	MG/KG	Fluorene
0.017 U	MG/KG	Phenanthrene
0.017 U	MG/KG	Anthracene
0.017 U	MG/KG	Fluoranthene
0.017 U	MG/KG	Pyrene
0.017 U	MG/KG	Benzo(a)Anthracene
0.017 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.017 U	MG/KG	Benzo(k)Fluoranthene
0.017 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.017 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample 6091 FY 2006 Project: 06-0436

PAH Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: CS02-LCS1 /

Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

ıalyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
esumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
ɜntification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
ıntification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
esence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6089** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS02-BLCS /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.017 U	MG/KG	2-Methylnaphthalene
0.017 U	MG/KG	Naphthalene
0.017 U	MG/KG	Acenaphthylene
0.017 U	MG/KG	Acenaphthene
0.017 U	MG/KG	Fluorene
0.017 U	MG/KG	Phenanthrene
0.017 U	MG/KG	Anthracene
0.017 U	MG/KG	Fluoranthene
0.017 U	MG/KG	Pyrene
0.017 U	MG/KG	Benzo(a)Anthracene
0.017 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.017 U	MG/KG	Benzo(k)Fluoranthene
0.017 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.017 U	MG/KG	Benzo(ghi)Perylene

nalyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
resumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
entification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
entification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
resence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

XTRACTABLES SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 08/28/2006 10:39

Sample **6094** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS03-BLC /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

J-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
C-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
B-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/28/2006 10:39**

Sample **6095** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS03-BLG /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/28/2006 10:39**

Sample **6099** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS03-SPS /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/28/2006 10:39**

Sample **6096** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS03-BRB /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 08/28/2006 10:39

Sample **6098** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS03-RDS /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 08/28/2006 10:39

Sample **6097** FY **2006** Project: **06-0436**

PAH Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: CS03-LMB /
Media: FISH

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 05/31/2006
Ending:

DATA REPORTED ON WET WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.016 U	MG/KG	2-Methylnaphthalene
0.016 U	MG/KG	Naphthalene
0.016 U	MG/KG	Acenaphthylene
0.016 U	MG/KG	Acenaphthene
0.016 U	MG/KG	Fluorene
0.016 U	MG/KG	Phenanthrene
0.016 U	MG/KG	Anthracene
0.016 U	MG/KG	Fluoranthene
0.016 U	MG/KG	Pyrene
0.016 U	MG/KG	Benzo(a)Anthracene
0.016 U	MG/KG	Chrysene
0.020 U	MG/KG	Benzo(b)Fluoranthene
0.016 U	MG/KG	Benzo(k)Fluoranthene
0.016 U	MG/KG	Benzo-a-Pyrene
0.018 U	MG/KG	Indeno (1,2,3-cd) Pyrene
0.018 U	MG/KG	Dibenzo(a,h)Anthracene
0.016 U	MG/KG	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/16/2006 14:39**

Sample **6101** FY **2006** Project: **06-0436**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: QA-DIB1 /
Media: DRY ICE BLANK

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 06/08/2006
Ending:

RESULTS	UNITS	ANALYTE
10 U	UG	bis(2-Chloroethyl) Ether
10 U	UG	Benzaldehyde
10 U	UG	Hexachloroethane
10 U	UG	bis(2-Chloroisopropyl) Ether
10 U	UG	n-Nitroso di-n-Propylamine
10 U	UG	Acetophenone
10 U	UG	Nitrobenzene
10 U	UG	Hexachlorobutadiene
10 U	UG	Caprolactam
10 U	UG	2-Methylnaphthalene
10 U	UG	1,2,4-Trichlorobenzene
10 U	UG	Naphthalene
10 U	UG	4-Chloroaniline
10 U	UG	bis(2-Chloroethoxy)Methane
10 U	UG	Isophorone
10 U	UG	Hexachlorocyclopentadiene (HCCP)
10 U	UG	1,1-Biphenyl
10 U	UG	2-Chloronaphthalene
10 U	UG	2-Nitroaniline
10 U	UG	Acenaphthylene
10 U	UG	Acenaphthene
10 U	UG	Dimethyl Phthalate
10 U	UG	Dibenzofuran
10 U	UG	2,4-Dinitrotoluene
10 U	UG	2,6-Dinitrotoluene
10 U	UG	3-Nitroaniline
10 U	UG	4-Chlorophenyl Phenyl Ether
10 U	UG	4-Nitroaniline
10 U	UG	Fluorene
10 U	UG	Diethyl Phthalate
10 U	UG	n-Nitrosodiphenylamine/Diphenylamine
10 U	UG	Hexachlorobenzene (HCB)
10 U	UG	Atrazine
10 U	UG	4-Bromophenyl Phenyl Ether
10 U	UG	Phenanthrene

RESULTS	UNITS	ANALYTE
10 U	UG	Anthracene
10 U	UG	Carbazole
10 U	UG	Di-n-Butylphthalate
10 U	UG	Fluoranthene
10 U	UG	Pyrene
10 U	UG	Benzyl Butyl Phthalate
10 U	UG	bis(2-Ethylhexyl) Phthalate
10 U	UG	Benzo(a)Anthracene
10 U	UG	Chrysene
10 U	UG	3,3'-Dichlorobenzidine
10 U	UG	Di-n-Octylphthalate
10 U	UG	Benzo(b)Fluoranthene
10 U	UG	Benzo(k)Fluoranthene
10 U	UG	Benzo-a-Pyrene
10 U	UG	Indeno (1,2,3-cd) Pyrene
10 U	UG	Dibenzo(a,h)Anthracene
10 U	UG	Benzo(ghi)Perylene
10 U	UG	2-Chlorophenol
10 U	UG	2-Methylphenol
10 U	UG	(3-and/or 4-)Methylphenol
10 U	UG	2-Nitrophenol
10 U	UG	Phenol
10 U	UG	2,4-Dimethylphenol
10 U	UG	2,4-Dichlorophenol
10 U	UG	2,4,6-Trichlorophenol
10 U	UG	2,4,5-Trichlorophenol
10 U	UG	4-Chloro-3-Methylphenol
20 U	UG	2,4-Dinitrophenol
20 U	UG	2-Methyl-4,6-Dinitrophenol
20 U	UG	Pentachlorophenol
20 U	UG	4-Nitrophenol
10 U	UG	2,3,4,6-Tetrachlorophenol

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/16/2006 14:39**

Sample **6102** FY **2006** Project: **06-0436**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: QA-DIB2 /
Media: DRY ICE BLANK

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 06/08/2006
Ending:

RESULTS	UNITS	ANALYTE
10 U	UG	bis(2-Chloroethyl) Ether
10 U	UG	Benzaldehyde
10 U	UG	Hexachloroethane
10 U	UG	bis(2-Chloroisopropyl) Ether
10 U	UG	n-Nitroso di-n-Propylamine
10 U	UG	Acetophenone
10 U	UG	Nitrobenzene
10 U	UG	Hexachlorobutadiene
10 U	UG	Caprolactam
10 U	UG	2-Methylnaphthalene
10 U	UG	1,2,4-Trichlorobenzene
10 U	UG	Naphthalene
10 U	UG	4-Chloroaniline
10 U	UG	bis(2-Chloroethoxy)Methane
10 U	UG	Isophorone
10 U	UG	Hexachlorocyclopentadiene (HCCP)
10 U	UG	1,1-Biphenyl
10 U	UG	2-Chloronaphthalene
10 U	UG	2-Nitroaniline
10 U	UG	Acenaphthylene
10 U	UG	Acenaphthene
10 U	UG	Dimethyl Phthalate
10 U	UG	Dibenzofuran
10 U	UG	2,4-Dinitrotoluene
10 U	UG	2,6-Dinitrotoluene
10 U	UG	3-Nitroaniline
10 U	UG	4-Chlorophenyl Phenyl Ether
10 U	UG	4-Nitroaniline
10 U	UG	Fluorene
10 U	UG	Diethyl Phthalate
10 U	UG	n-Nitrosodiphenylamine/Diphenylamine
10 U	UG	Hexachlorobenzene (HCB)
10 U	UG	Atrazine
10 U	UG	4-Bromophenyl Phenyl Ether
10 U	UG	Phenanthrene
10 U	UG	Anthracene
10 U	UG	Carbazole
10 U	UG	Di-n-Butylphthalate
10 U	UG	Fluoranthene
10 U	UG	Pyrene
10 U	UG	Benzyl Butyl Phthalate
10 U	UG	bis(2-Ethylhexyl) Phthalate
10 U	UG	Benzo(a)Anthracene
10 U	UG	Chrysene
10 U	UG	3,3'-Dichlorobenzidine
10 U	UG	Di-n-Octylphthalate
10 U	UG	Benzo(b)Fluoranthene
10 U	UG	Benzo(k)Fluoranthene
10 U	UG	Benzo-a-Pyrene
10 U	UG	Indeno (1,2,3-cd) Pyrene
10 U	UG	Dibenzo(a,h)Anthracene
10 U	UG	Benzo(ghi)Perylene
10 U	UG	2-Chlorophenol
10 U	UG	2-Methylphenol
10 U	UG	(3-and/or 4-)Methylphenol
10 U	UG	2-Nitrophenol
10 U	UG	Phenol
10 U	UG	2,4-Dimethylphenol
10 U	UG	2,4-Dichlorophenol
10 U	UG	2,4,6-Trichlorophenol
10 U	UG	2,4,5-Trichlorophenol
10 U	UG	4-Chloro-3-Methylphenol
20 U	UG	2,4-Dinitrophenol
20 U	UG	2-Methyl-4,6-Dinitrophenol
20 U	UG	Pentachlorophenol
20 U	UG	4-Nitrophenol
10 U	UG	2,3,4,6-Tetrachlorophenol

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 08/16/2006 14:39**

Sample **6100** FY **2006** Project: **06-0436**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: QA-BB5 /
Media: DRY ICE BLANK

Produced by: Revell, Dennis
Requestor: Donna Webster
Project Leader: PMEYER
Beginning: 06/08/2006 08:45
Ending:

RESULTS	UNITS	ANALYTE
10 U	UG	bis(2-Chloroethyl) Ether
10 U	UG	Benzaldehyde
10 U	UG	Hexachloroethane
10 U	UG	bis(2-Chloroisopropyl) Ether
10 U	UG	n-Nitroso di-n-Propylamine
10 U	UG	Acetophenone
10 U	UG	Nitrobenzene
10 U	UG	Hexachlorobutadiene
10 U	UG	Caprolactam
10 U	UG	2-Methylnaphthalene
10 U	UG	1,2,4-Trichlorobenzene
10 U	UG	Naphthalene
10 U	UG	4-Chloroaniline
10 U	UG	bis(2-Chloroethoxy)Methane
10 U	UG	Isophorone
10 U	UG	Hexachlorocyclopentadiene (HCCP)
10 U	UG	1,1-Biphenyl
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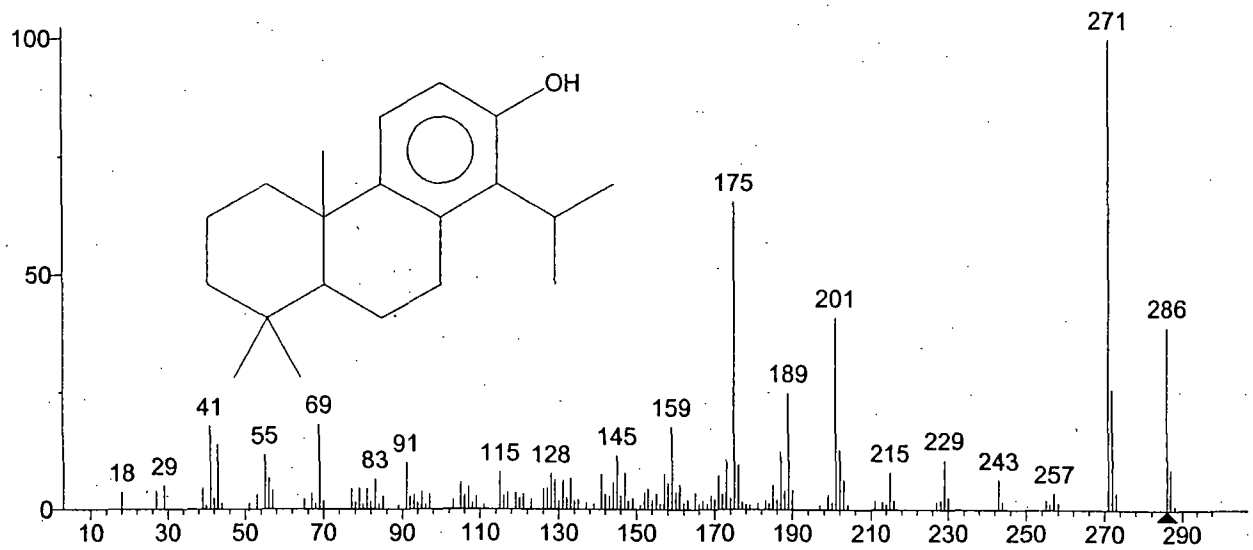
10 U	UG	Acenaphthylene
10 U	UG	Acenaphthene
10 U	UG	Dimethyl Phthalate
10 U	UG	Dibenzofuran
10 U	UG	2,4-Dinitrotoluene
10 U	UG	2,6-Dinitrotoluene
10 U	UG	3-Nitroaniline
10 U	UG	4-Chlorophenyl Phenyl Ether
10 U	UG	4-Nitroaniline
10 U	UG	Fluorene
10 U	UG	Diethyl Phthalate
10 U	UG	n-Nitrosodiphenylamine/Diphenylamine
10 U	UG	Hexachlorobenzene (HCB)
10 U	UG	Atrazine
10 U	UG	4-Bromophenyl Phenyl Ether
10 U	UG	Phenanthrene

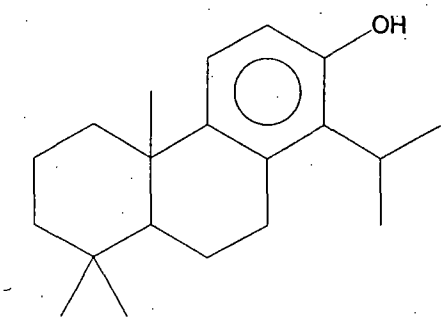
RESULTS	UNITS	ANALYTE
10 U	UG	Anthracene
10 U	UG	Carbazole
10 U	UG	Di-n-Butylphthalate
10 U	UG	Fluoranthene
10 U	UG	Pyrene
10 U	UG	Benzyl Butyl Phthalate
10 U	UG	bis(2-Ethylhexyl) Phthalate
10 U	UG	Benzo(a)Anthracene
10 U	UG	Chrysene
10 U	UG	3,3'-Dichlorobenzidine
10 U	UG	Di-n-Octylphthalate
10 U	UG	Benzo(b)Fluoranthene
10 U	UG	Benzo(k)Fluoranthene
10 U	UG	Benzo-a-Pyrene
10 U	UG	Indeno (1,2,3-cd) Pyrene
10 U	UG	Dibenzo(a,h)Anthracene
10 U	UG	Benzo(ghi)Perylene
10 U	UG	2-Chlorophenol
10 U	UG	2-Methylphenol
10 U	UG	(3-and/or 4-)Methylphenol
10 U	UG	2-Nitrophenol
10 U	UG	Phenol
10 U	UG	2,4-Dimethylphenol
10 U	UG	2,4-Dichlorophenol
10 U	UG	2,4,6-Trichlorophenol
10 U	UG	2,4,5-Trichlorophenol
10 U	UG	4-Chloro-3-Methylphenol
20 U	UG	2,4-Dinitrophenol
20 U	UG	2-Methyl-4,6-Dinitrophenol
20 U	UG	Pentachlorophenol
20 U	UG	4-Nitrophenol
10 U	UG	2,3,4,6-Tetrachlorophenol

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

5733. CS-03-3D

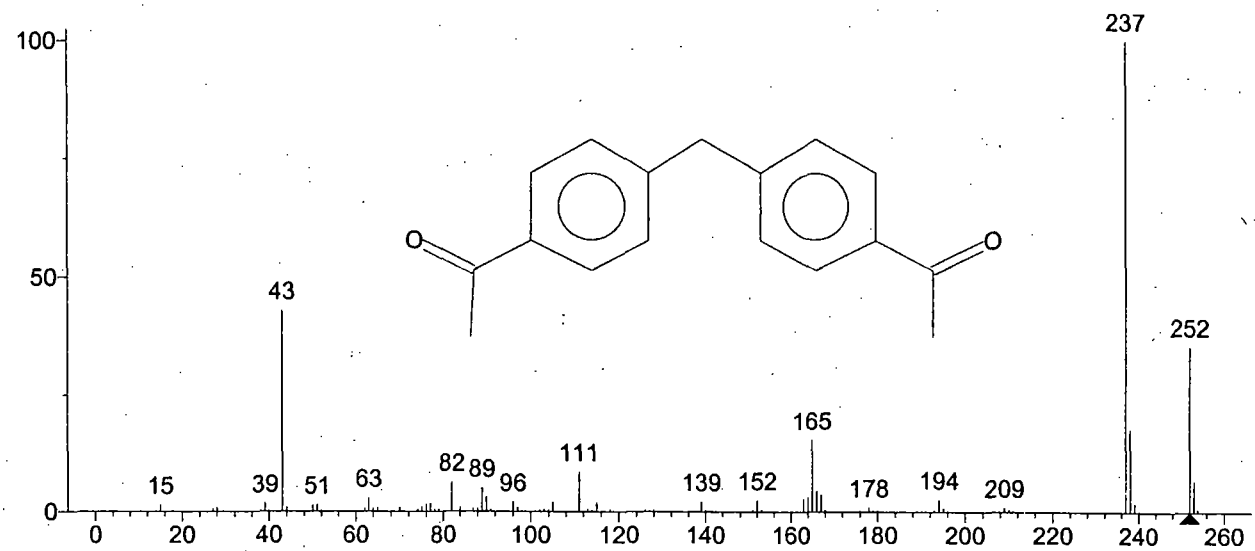


(mainlib) 2-Phenanthrenol, 4b,5,6,7,8,8a,9,10-octahydro-4b,8,8-trimethyl-1-(1-methylethyl)-, (4bS-trans)-

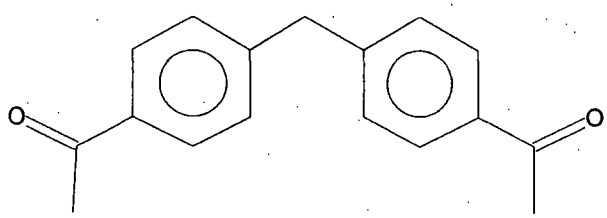


Name: 2-Phenanthrenol, 4b,5,6,7,8,8a,9,10-octahydro-4b,8,8-trimethyl-1-(1-methylethyl)-, (4bS-trans)-
Formula: $C_{20}H_{30}O$
MW: 286 CAS#: 511-15-9 NIST#: 42592 ID#: 96141 DB: mainlib
Other DBs: NIH
Contributor: R RYHAGE MS-LAB KAROLINSKA INSTITUTET STOCKHOLM SWEDEN
10 largest peaks:
271 999 | 175 653 | 201 409 | 286 391 | 272 258 | 189 249 | 69 182 | 41 178 | 159 177 | 43 140 |
Synonyms:
1.Podocarpa-8,11,13-trien-13-ol, 14-isopropyl-
2.Totarol
3.Totarol (b637832k176)
4.(+)-Totarol

5733 C5-03-SD



(mainlib) 4,4'-Diacetyldiphenylmethane



Name: 4,4'-Diacetyldiphenylmethane
Formula: $C_{17}H_{16}O_2$
MW: 252 CAS#: 790-82-9 NIST#: 135072 ID#: 90773 DB: mainlib
Other DBs: None
Contributor: NIST Mass Spectrometry Data Center, 1994
10 largest peaks:
237 999 | 43 428 | 252 353 | 238 177 | 165 154 | 111 85 | 253 66 | 82 63 | 89 51 | 166 45 |
Synonyms:
no synonyms.

APPENDIX II

Field Sampling Plan
Quality Assurance Plan
Data Quality Objectives

Field Sampling Plan/
Quality Assurance Project Plan

Gulf States Creosoting Company, Inc.
Flowood, Rankin County, Mississippi

Prepared By

Phyllis Meyer
U.S. EPA Region 4
Science and Ecosystems Support Division
Athens, GA

May 25, 2006

TABLE OF CONTENTS

APPENDICES

To collect the required information, the sampling must be done when the water level conditions are low and there have been no major releases from the Ross Barnett Reservoir to the north of the site. The study will be conducted during the week of May 29, 2006. The sampling date is subject to change based on weather and field conditions. Personnel from the Mississippi Department of Environmental Quality (MDEQ) will assist EPA and the Integrated Laboratory Systems (ILS) with the collection and processing of samples.

QUALITY OBJECTIVES/CRITERIA FOR MEASUREMENT DATA

The data quality objectives for this study were developed using the Guidance for the Data Quality Objectives Process (US EPA 2002) are provided in Appendix A.

SPECIAL TRAINING REQUIREMENTS/CERTIFICATION

Proficiency with the use of electro-fishing equipment, both backpack shocker and boat shocking units, will be necessary for this field study. Personnel participating in this study will receive an on-site safety briefing prior to initiation of sampling activities. Pertinent safety information is available in Appendix B of this document.

DOCUMENTATION AND RECORDS

A bound field logbook will be used for recording information pertinent to this study. All field notes will include information outlined in Section 2.5 of the Ecological Assessment Standard Operating Procedures and Quality Assurance Manual, January 2002 (EASOPQAM). Upon completion of sampling activities, all documents/records obtained during the field investigation will be organized, labeled, and maintained by the project leader during preparation of the report. Upon completion of the report, project records will be submitted to the SESD records room.

The final data report will include data for each media sampled. Tables and maps will also be included in the final report. The text of the report will describe the study collection effort and findings for each station and will include any problems encountered or other noteworthy information. Field data logs will not be included in the final report.

QUALITY ASSURANCE AND QUALITY CONTROL

Quality control (QC) procedures will be used in the field and laboratory to ensure that reliable data are obtained. During sampling, precautions will be taken to prevent cross-contamination of sampling equipment that could compromise sample integrity. Field and laboratory methods utilized on this project will adhere to USEPA approved guidance and methodology (US EPA, 2005) and the EASOPQAM (US EPA, 2002) and manufacturers instructions. All samples will be handled and custody maintained in accordance with Section 2 of the EASOPQAM. A sonde will be calibrated prior to deployment each day

REFERENCES

US EPA. 2005. *Analytical Support Branch Laboratory Operations and Quality Assurance Manual.* US Environmental Protection Agency, Region 4, Science and Ecosystem Support Division, Analytical Support Branch, Athens, GA.

US EPA. 2003. *Draft Preliminary Assessment/Site Inspection Report, Gulf States Creosoting Company* prepared by Weston Solutions, Inc, expressly for EPA.

US EPA. 2002. *Ecological Assessment Standard Operating Procedures and Quality Assurance Manual.* US Environmental Protection Agency, Region 4, Science and Ecosystem Support Division, Ecological Assessment Branch, Athens, GA

US EPA. 1994. *Guidance for the Data Quality Objectives Process.* EPA QA/G-4. US Environmental Protection Agency, Office of Research and Development, Washington, D.C. EPA/600/R-96/055.

Figure 1.
Proposed Electro-fishing Zones, Creosote Slough
Gulf States Creosoting Co., Flowood, MS

DQO FOR FISH, SEDIMENT AND WATER SAMPLING
GULF STATES CREOSOTING, FLOWOOD, MS

DQO	STEPS	FISH/SEDIMENT/SURFACE WATER SAMPLING
1	State the Problem: * Identify the members of the planning team. *Identify the primary decision maker of the planning team. *Define problem. *Specify the available resources and relevant deadlines for the study	Mississippi Department of Environmental Quality (MDEQ) regulators are concerned that individuals fishing in an area adjacent to the former Gulf States Creosoting Company located at 1625 Flowood Drive (Mississippi Hwy 468), Flowood, Rankin County, Mississippi, may be exposed to elevated levels of PAHs by consuming fish from Creosote Slough. Members of the planning team were Donna Webster, U.S. Environmental Protection Agency (EPA), Remedial Project Manager (RPM), Atlanta, GA, Kevin Koporec, EPA Toxicologist, Atlanta, GA, Phyllis Meyer (EPA biologist), field project leader, Athens, GA, Phillip Weathersby, MDEQ, Jackson, MS, Richard Ball, MDEQ. The primary decision maker will be Ralph Howard, EPA (RPM). Phyllis Meyer will be responsible for planning and conducting the field investigation; coordinating analytical requirements and compiling the raw data. The field work must be conducted in a one week time frame and is scheduled for May 30 through June 2, 2006, with a reconnaissance April 10-12, 2006. If this study proceeds as projected and the appropriate data are acquired, analytical results should be available by late August. All project deliverable and task dates are estimates based on analytical laboratory schedules. New information, additional tasks, and changes in scope may result in revisions to these dates. The Science and Ecosystem Support Division (SESD) will provide a minimum of two people, a back-pack fish shocking unit, and a boat with electro-fishing capabilities if needed, and other necessary supplies. MDEQ will provide at least one person to assist with the study, lab space to fillet the fish samples and an electro-fishing boat if one is available for the study.

2	Identify the Decision *Identify the principal study question. *Define the action that could result from resolution of the principal study question.	Are the body burdens in fish tissue in selected segments of Creosote Slough, adjacent to the former Gulf States Creosoting Company, above the 1E-5 screening value for PAHs (polycyclic aromatic hydrocarbons)? If the data shows that the tissue numbers are above the screening value, then more calculations of the actual risk will be done. If the data shows no exceedance of PAHs, then there is a possibility that no further remedial action will be planned.
3	Identify the Inputs to the Decision *Identify the information that will be required to resolve the decision statement. *Determine the sources for each item of information identified. *Identify the information that is needed to establish the action level. *Confirm that analytical methods exist to provide the data.	No previous fish data exists for this site. Fish, sediment and water samples will be collected from approximately 3 stations in Creosote Slough which is located adjacent to the former Gulf States Creosoting facility and one background site located on the northern end of the property, south of the railroad tracks. An attempt will be made to collect edible size fish that are top predators, such as bass or sunfish and fish that are bottom feeders, such as catfish. Depending upon the availability and size of the fish, they will be analyzed either as a composite or as individuals. Composite sediment samples will be collected from each tissue sampling location. The sediment sample will consist of a one-six inch core taken from the beginning, middle and end of each reach that is fished and then composited. One water sample will also be collected from the middle of each fished reach. Analytical scans for extractable organic compounds (PAHs) will be completed for all samples. In addition, % lipids and % moisture will be analyzed for all tissue samples. Percent moisture for all sediments. Lower detection limits (.005 ppm) for all samples will be utilized (this has been negotiated with the chemists and will depend on amounts of tissue available).

4	Define Study Boundaries *Specify the characteristics that define the population of interest. *Define the spacial boundary. *Define the temporal boundary. *Define the scale of decision making. *Identify practical constraints on the data collection	1. Determine the concentration of listed contaminants (PAHs) in fish, sediments and water samples. 2. Spacial boundary – Creosote Slough adjacent to the former Gulf States Creosoting, Inc. 3. Temporal boundary – Samples will be collected during the week of May 29th, 2006. Samples will be collected under similar conditions of flow and stage. 4. Scale of Decision -- Results from this study will be used to begin making decisions regarding the fishery in Creosote Slough. 5. Practical Constraints – The study may be delayed if intense rainfall occurs that causes dramatic changes in the flow pattern of the slough due to releases from the Ross Barnett Reservoir.
5	Develop a Decision Rule * Action Levels of the study *Develop a decision rule.	Concentrations of PAHs will be used in comparison to background levels. If PAHs are detected above background levels, further study may be required to fully characterize the level and specific types of PAHs in the fish tissue.
6	Specify Decision Error Limits *Determine the possible range of the parameters of interest. *Identify the decision errors.	An attempt will be made to collect edible size fish from four different stations. The proposal is to collect a composite of 4-5 top predators and 4-5 bottom feeders from each station. The composites will consist of the same species and will be similarly sized fish. The type and extent of the fishery is not known and deviation from this regime may be altered as the samples are actually collected. All tissues and sediments will be analyzed for PAHs and % moisture. Tissues will also be analyzed for % lipids. Surface water samples will be analyzed for PAHs.

7	Optimize the Study Design	The data collected will be used by EPA in an effort to determine if fish consumption will have a detrimental effect on human health due to PAHs or if the risk factors need to be further evaluated in relation to the types of PAHs detected. There is also the possibility that more sampling may have to be done. Collection techniques will include backpack shocking and boat electro-fishing. Sediments will be collected using a stainless steel corer to a six inch depth and the water samples will be collected at the surface. Sampling sites were selected to cover the navigable reachs of Creosote Slough (Figure 1)

APPENDIX III

Safety Plan

FIELD SAFETY PLAN

SAFETY PLAN	
Site Name: Gulf States Creosoting	Contact: Phillip Weathersby, MDEQ, 601-961-5302
Address: Motel: Comfort Inn, 235 Pearson Rd, Pearl, MS	
Phone Number: Motel: 601-932-6009 Cell #4: 706-338-2867	Confirmation #s 198465 and 198466 $60.00 Amanda
Purpose of Visit: Sediment, surface water and fisheries work on Creosote Slough, Flowood, MS	
Directions to Site: I-20 West to Hwy 475N or Hwy 40N or 468N. 475 North will take you to Hwy 25, turn West to Treetops Blvd. for hotel or take Hwy 468 to site or to hotel on Treetops.	

SITE INVESTIGATION TEAM:

PERSONNEL *	SAFETY CATEGORY	RESPONSIBILITIES
Phyllis Meyer	B	Project leader
Jerry Ackerman	B	ESAT/sampler
Ralph Howard		Regional Project Manager
Richard Ball		MDEQ
Phillip Weathersby		MDEQ
Jerry Banks		MDEQ
* All employees have been trained/medically monitored in accordance with OSHA 29 CFR 1910.12 requirements and US-EPA Region IV Field Health and Safety Manual, 1990 edition.		

PLAN PREPARATION:

Site Safety Officer	Phyllis Meyer	Date: 5/26/06
Branch Safety Officer	Phyllis Meyer	Date: 5/26/06
Section Chief:	Bobbie L Carter	Date 5/26/06

SITE HAZARDS:

Electro-fishing, Insects, snakes

FLOAT PLAN

01/18/06

Complete this plan, before going boating and leave it with a reliable person who can be depended upon to notify the Coast Guard, or other rescue organization, should you not return as scheduled. Do not file this plan with the Coast Guard.

PROJECT DATES - 05/30/06 - 06/02/06 (if overnight, date returning) -

1. NAME OF PERSON REPORTING: Phyllis Meyer
   TELEPHONE NUMBER: 706-338-2867

BOAT MAKE	COLOR	LENGTH	ENGINES	OCCUPANTS
Pontoon	Silver	28	OB	
Parker	White	25	2 OB	
Privateer	White	24	2 OB	
Parker	White	23	2 OB	
Parker	White	21	OB	
Mako	White	20	OB	
Privateer	White	18	OB	
Shocker-Schaffer	Tan	18	OB	
Boston Whaler	White	17	OB	
Shocker-Fisher	Green	16	OB	
Canoe Old Town X 2	Green	16		
Canoe	Aluminum	16		
Shocker-Scandy/White	Aluminum	15	OB	Phyllis Meyer, Jerry Ackerman, Richard Ball (MDEQ)
Jon	Gray	14	OB	
Jon X 2	Gray	12	OB	
RiverHawk - Canoe	Green	12		

4. TRIP EXPECTATIONS: LEAVE AT - 0800 (TIME)
   FROM - Creosote Slough

   GOING TO -Sites 1,2,4,3 in that order

   EXPECTED TO RETURN BY: 2100 (TIME)

   AND IN NO EVENT LATER THAN: 2200 (TIME)
5. IF NOT RETURNED BY (TIME), CALL THE COAST GUARD, OR (LOCAL AUTHORITY)
   NAME:
   TELEPHONE NUMBERS:
6. SURVIVAL EQUIPMENT: (CHECK AS APPROPRIATE)

___x_PFDs	_____FLARES	_____MIRROR	_____SMOKE SIGNALS
_____CLOTHING	_____FLASHLIGHT	_____FOOD	___x__PADDLES
_____WATER	_____OTHERS	___x__ANCHOR	_____RAFT OR DINGHY
_____EPIRB			

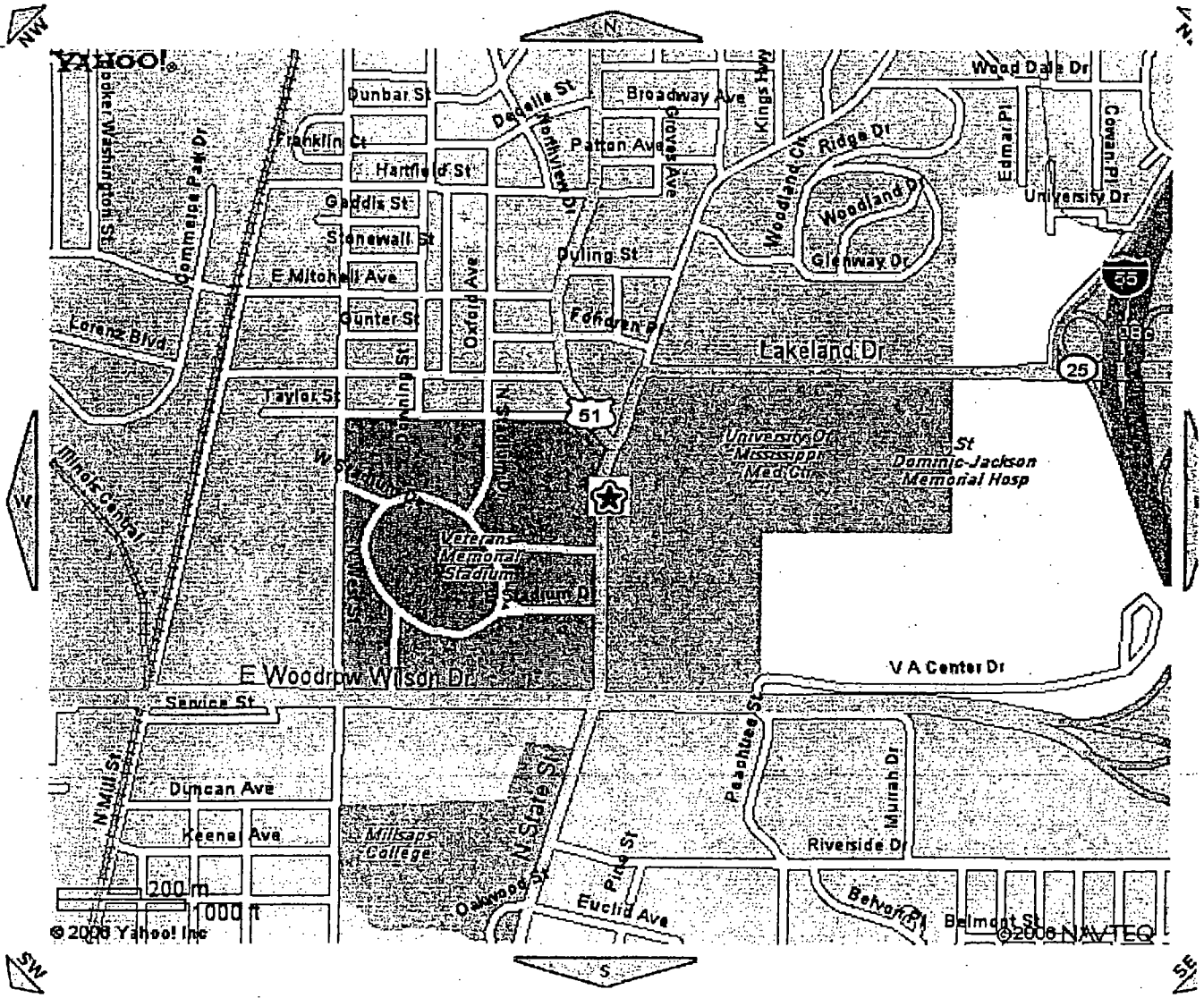
7. RADIO:_____YES __x___NO
   TYPE: FREQS
8. ANY OTHER PERTINENT INFO:

9. FOR SINGLE BOAT OPERATION: AUTOMOBILE LICENSE: TYPE
   TRAILER LICENSE: COLOR/MAKE OF AUTO: WHERE PARKED: ConSteel

★ Map for: 2500 N State St Jackson, MS 39216-4500 Sav

Driving Directions: To Here - From Here Printable Version | Email Map | Link to this Map MY Y!

Zoom In - 1st.3city567state910-
oom
ut
small map



See these business locations on this map

Zoom in & Re-Center ○ Re-Center only View Map Legend

SPONSORED LINKS

EarthCon

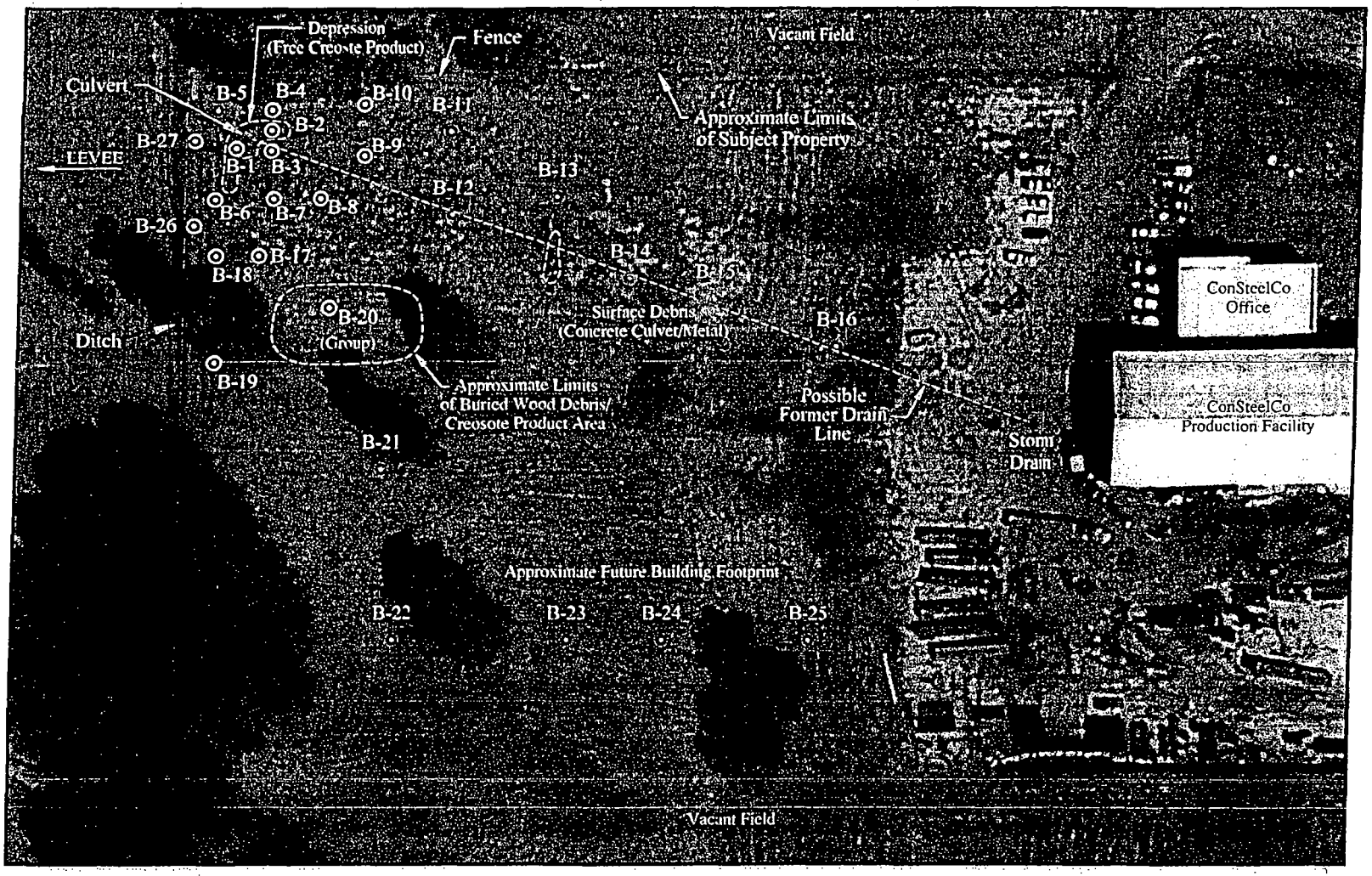
LIMITED SOIL ASSESSMENT
CONSTEELCO, INC.
1625 FLOWOOD DRIVE
FLOWOOD, MISSISSIPPI

PREPARED FOR

MS. KELLY BLACKWOOD
PHELPS DUNBAR
111 EAST CAPITOL STREET, #600
JACKSON, MISSISSIPPI 39201

EarthCon Project Number C193.001

Submitted
October 9, 2006



193.001 2.DWG

LEGEND:

Soil Boring Location

Soil Boring Location With Creosote Odor

Area of Concern

EarthCon

Earth Consulting Group, Inc.

P.O. Box 1246 Madison, Ms 39130 Tel: (601) 853-2134 Fax: (601) 856-3978

DRAWN BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:
Glen Ivey	Jay Ferris	NTS	09/22/06	C193.001

PROJECT: ConSteelCo, Inc. - 1625 Flowood Drive - Flowood, Mississippi

TITLE: SOIL BORING LOCATION PLAN

FIGURE 2

EXECUTIVE SUMMARY

Earth Consulting Group, Inc. (EarthCon) was authorized by Ms. Kelly Blackwood of Phelps Dunbar to perform a limited soil assessment of the western portion of the ConSteelCo property located at 1625 Flowood Drive, Flowood, Rankin County, Mississippi. The limited soil assessment included installation of soil borings and selected soil sampling and analysis to assess the area for the presence of creosote compounds related to former Gulf State Creosoting, Inc. site operations that occurred prior to purchase of the property by ConSteelCo.

Twenty-seven (27) soil borings were installed to a depth of approximately 8.0 feet below surface grade in the western portion of the subject property. The borings were visually described and soil conditions were recorded on boring logs. Borings with obvious visual or olfactory indications of creosote contamination were noted, and an approximate delineation of the lateral extent of the residual creosote impacts was achieved. Approximately 15,000 square feet of the northwest corner of the property appeared to be impacted with creosote odors and/or soil staining in the shallow subsurface.

Free creosote product was observed in soil borings at two (2) locations on the site. These areas included a depression near the northwest corner of the subject property, and an area containing buried wood debris in the west-central portion of the subject property. Borings installed within the footprint of a proposed building addition on the property, and along the route of a possible drain line on site, did not contain evidence of creosote impacts in the shallow soil.

Laboratory analytical results of soil samples collected from each of the two (2) identified creosote locations on site contained concentrations of semi-volatile organic compounds in excess of the Mississippi Department of Environmental Quality (MDEQ) Target Remediation Goals (TRGs) for "Restricted Use" scenarios. Several other semi-volatile organic compounds were detected at concentrations within allowable TRG limits.

The soil conditions identified in this study appear directly related to past site operations by Gulf States Creosoting, Inc. This site has been the focus of preliminary environmental investigations by the U.S. Environmental Protection Agency and the MDEQ. EarthCon recommends consulting with legal counsel and the appropriate environmental regulatory agencies to determine an appropriate course of action for the property.

Certification:

Limited Soil Assessment
ConSteelCo, Inc.
1625 Flowood Drive
Flowood, Mississippi

Prepared for

Mr. Randy Kenner
ConSteelCo, Inc.
1625 Flowood Drive
Flowood, Mississippi

Earth Consulting Group, Inc. hereby certifies the aforementioned report constitutes an accurate presentation of the investigation, research, and findings developed during the completion of the Limited Soil Assessment prepared for, and submitted to, the client as their approved Engineer of Record.

Signed:

Everett J. "Jay" Ferris, P.G.
Senior Project Manager
Mississippi Registered Professional Geologist #0045

Date: 10/9/06

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Senior Engineer
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Date: 9 October 2006

TABLE OF CONTENTS

1.0 INTRODUCTION

Earth Consulting Group, Inc. (EarthCon) was authorized by Ms. Kelly Blackwood of Phelps Dunbar to perform a limited soil assessment of the western portion of the ConSteelCo, Inc. (ConSteelCo) property located at 1625 Flowood Drive in Flowood, Rankin County, Mississippi (see Figure 1 - Site Location Map). The subject property exists within the boundary of the former Gulf States Creosoting, Inc. (Gulf States Creosoting) facility. The Gulf States Creosoting facility has been the object of preliminary environmental investigation by the U.S. Environmental Protection Agency (EPA) and the Mississippi Department of Environmental Quality (MDEQ), including investigation to evaluate inclusion of the property on the National Priorities List for environmental remediation (a.k.a. Superfund). The limited soil assessment in this study was performed to evaluate site conditions prior to a pending commercial transaction for the subject property.

The limited soil assessment included installation of soil borings in the western portion of the property to determine if residual creosote impacts were present, and to laterally delineate any detected impacts to the subsurface. Specifically, the scope of work included:

- Reviewing selected documents outlining the general nature of the property with regard to potential contaminants;
- Locating and marking of underground utilities in the area through the Mississippi One Call service and local utility providers;
- Installing soil borings within the vicinity of a depression near the northwest corner of the subject property;
- Installing soil borings along the route of a potential drain line extending from the northwest corner of the property to a storm grate on the west side of the existing production facility;
- Installing soil borings within the footprint of a proposed building addition on the southwest portion of the subject property;
- Collecting three (3) soil samples from creosote-impacted areas on site to characterize the degree of contamination in areas deemed to have the greatest evidence of creosote;
- Preparing a report documenting the findings of the soil assessment.

2.0 SOIL BORING AND MONITORING WELL INSTALLATION

A limited program of soil boring installation was performed to determine whether creosote had been released to the subsurface during past Gulf States Creosoting operations on the subject property. The boring locations selected and sampling methodology are described in the following sections and boring locations are shown in Figure 2 – 2003 Aerial Photograph - Soil Boring Location Plan.

2.1 Sampling Location Rationale

The western portion of the subject property was observed as a vacant field and appeared regularly maintained (mowed) at the time of the limited soil assessment. This portion of the property has reportedly not been used in site operations since its purchase by ConSteelCo in 1994. The approximately 8-acre subject property was formerly part of the approximately 125-acre Gulf States Creosoting facility which operated several years prior to the purchase by ConSteelCo. Environmental investigations have been conducted in the past on the subject property and adjacent properties by the EPA, MDEQ, and other environmental consulting firms. A recent site investigation related to a pending commercial transaction for the ConSteelCo site discovered a small depression in the northwest corner of the property that contained remnants of a concrete culvert. Soil borings performed by others reportedly detected free creosote product in the shallow subsurface in this area. Soil borings were initially installed by EarthCon in this area to confirm the presence of creosote in the subsurface. Borings B-1 through B-12, B-17 through B-20, B-26, and B-27 were installed in a general radial pattern away from this area to attempt to delineate the lateral extent of the creosote impacts associated with this feature.

Other areas of potential concern on the property included a possible buried drain line leading from the west side of the existing ConSteelCo production building to the concrete culvert remnant in the northwest corner of the property. Soil borings B-13 through B-16 were installed along the suspected route of this potential drain line including areas of stressed vegetation observed along the route.

Soil borings B-21 through B-25 were installed within the footprint of a planned new ConSteelCo production and office facility on the southwest portion of the property. These borings were

installed to assess possible residual creosote impacts to the subsurface beneath the area where workers would be present during planned future operations.

2.2 Sampling Methodology

The assessment objective was to attempt to laterally delineate creosote compounds previously reported in the shallow soil on site. Soil borings were installed to a depth of approximately 8.0 feet below surface grade at 27 locations on the western portion of the property. Due to the inherently distinct odor and dark brown to black color of creosote, odors (olfactory evidence) and visual indications of creosote were utilized to determine whether the soil samples retrieved from a boring location contained creosote compounds. Upon completion of the sampling and visual classification of the 27 soil borings, EarthCon returned to three (3) boring locations (B-2, B-7, and B-20), and installed a boring adjacent to each original boring location to collect a representative sample of the creosote impacted material in these areas. These locations were selected to enable comparison of chemical concentrations of samples deemed as the most impacted soils in the assessment to the MDEQ Tier 1 Target Remediation Goals (TRGs) for "Restricted Use" (industrial) property.

A truck-mounted Model 540 UD Geoprobe® direct-push drilling rig (Geoprobe) was used to collect the soil samples in this assessment. The Geoprobe was equipped with a 48-inch long by 2-inch diameter Macro-core sampling device which utilizes acetate inner sleeves to retrieve continuous soil samples as the sampler is pushed through the soil. This process was repeated to yield a continuous soil core to the depth of boring termination. Upon retrieval from the Macro-core sampler, the soil-filled acetate sleeve was cut open and the soil was described and classified on soil boring logs. Noticeable creosote odors and/or staining (if present) were recorded for each soil sampling interval. The boring logs prepared in this limited soil assessment are presented in Appendix A.

Groundwater was not encountered in the soil borings installed in this assessment. No groundwater monitoring wells were installed as part of this limited soil assessment. The soil samples collected in this assessment were generally described as moist, with moisture content noted to increase slightly with depth. A wet sand stratum was encountered at a depth of

approximately 7.5-8.0 feet below surface grade in borings installed in the southeastern portion of the study area in the vicinity of boring B-25. Based on the visual evidence obtained in the soil borings installed in this assessment, EarthCon estimates that the groundwater table exists within 10-20 feet of the surface.

2.3 Laboratory Analysis

Based on the chemical nature of the suspected site contaminants, the three (3) soil samples collected for laboratory analysis in this assessment were analyzed for semi-volatile organic compounds by EPA Method 8270C. Environmental Science Corporation in Mt. Juliet, Tennessee performed the laboratory analysis. The laboratory analysis results were compared to the MDEQ Tier 1 Target Remediation Goals for soil in the "Restricted Use" category as the subject property is an industrial site and is planned for continued industrial use in the future. The Limited Soil Assessment Results are discussed in the following section.

3.0 LIMITED SOIL ASSESSMENT RESULTS

The following sections describe the results obtained in the limited soil assessment for the subject property.

3.1 Soil Stratigraphy

The shallow soil in the western portion of the subject property can be generally described as consisting of a soft to firm, low-plasticity clay from the surface to a depth of approximately 4.0 feet below surface grade. A dense, highly plastic clay layer was generally observed from approximately 4.0 - 6.5 feet below surface grade. A light brown, fine sand stratum was observed from approximately 6.5 - 8.0 feet below surface grade in some portions of the site.

3.2 Creosote Impacted Area

Based on visual and olfactory evidence, creosote impacted soils appear to exist within an area measuring approximately 100 feet (east to west) by approximately 150 feet (north to south) (approximately 15,000 square feet) in the northwest corner of the ConSteelCo property. Additional information concerning creosote-impacted areas on site is presented in the following sections.

3.2.1 Northwest Corner Depression

Free creosote product was observed in two (2) areas on the ConSteelCo property in this assessment. Borings installed in a shallow depression in the northwest corner of the subject property were observed to contain degraded, soft soils and liquid creosote product in the upper few feet, with heavy creosote odors and stained soil to the termination depth of the borings at approximately 8.0 feet below surface grade. This depression appears as an irregular U-shaped area measuring approximately 50 feet long by approximately 15 feet wide (approximately 750 square feet). Noticeable odors and/or creosote staining were observed in several borings surrounding this depression, generally encompassing the northwest corner of the property.

3.2.2 Buried Debris Area

Within the creosote impacted portion of the ConSteelCo property described above, an approximately 75 foot (east to west) by 50 foot (north to south) (3,750 square feet) area

surrounding boring location B-20 was observed to contain buried creosote-soaked wood debris. This debris was encountered in several boring locations at a depth of approximately 3.5 - 4.5 feet below surface grade. The debris was impenetrable using the soil sampling device, although small samples of creosote-soaked wood were collected on occasion from the drive shoe at the bottom of the soil sampler. The lateral extent of this location was assessed by attempting to penetrate the debris in several shallow borings after initially encountering the debris at the boring B-20 location. Once the Geoprobe moved laterally in each cardinal direction enough to avoid the debris area, the soils encountered were similar to native materials observed on site, with slight odors and/or soil staining. The thickness of the buried wood debris in this area was not defined.

3.3 Possible Drain Line Location

A storm drain grate was observed approximately 50 feet west of the western edge of the ConSteelCo production facility building. This drain was reportedly discovered after the purchase of the property by ConSteelCo. The route and extent of the stormwater drainage pipe from this location is unknown, but the general direction of the pipe exiting the drain appears toward the northwest corner of the subject property where a broken concrete culvert remnant was located in the previously mentioned shallow depression. Patches of barren ground indicating stressed vegetation were observed along a line from the drain to the remnant culvert. Borings B-12 through B-16 were installed along a line between the storm drain and the remnant culvert to evaluate the probable pipeline route, should it exist, and assess the areas of stressed vegetation for indications of creosote material.

Boring results from the locations tested in this area did not reveal evidence of the drain line existence or the presence of creosote in the soil samples collected. The route of the storm water drain and the cause of the stressed vegetation remain unknown at this time.

3.4 Future Building Footprint

The ConSteelCo facility reportedly intends to construct an additional T-shaped office and production facility building on the southwestern portion of the property (see Figure 2). Borings B-21 through B-25 were installed adjacent to, or within, the general footprint of the proposed

building location to assess the potential for creosote-impacted soils existing beneath the future building foundation. The soil borings within the proposed construction footprint did not contain visual or olfactory evidence of creosote to a depth of approximately 8.0 feet below surface grade. Soil materials generally consisted of low-plasticity silty clay grading to a highly plastic, dense clay with depth. A layer of fine sand was evident in the bottom few feet of borings B-24 and B-25, increasing in thickness to the east.

3.5 Laboratory Analysis Results

Laboratory analysis of soil samples submitted in this assessment detected creosote-related compounds in each of the areas tested. The chemical constituent naphthalene was detected in each of the samples at concentrations exceeding the MDEQ Target Remediation Goal for soil in Restricted Use settings, with the highest concentration of 4,600 mg/kg exhibited in the sample collected from the area of boring B-20. The soil analytical data is summarized in Table 1. A copy of the laboratory analytical data report is included as Appendix B.

4.0 CONCLUSIONS AND RECOMMENDATIONS

EarthCon has completed a limited soil assessment on the western portion of the ConSteelCo, Inc. property located at 1625 Flowood Drive, Flowood, Rankin County, Mississippi. The results of assessment revealed the northwest corner of the property to be impacted with creosote compounds in the shallow soil, with two (2) locations exhibiting free creosote product in the subsurface. The area of creosote impacts appears to encompass an area of approximately 15,000 square feet to a depth of at least 8.0 feet below ground surface in most areas. Faint residual creosote odors were noted in borings located along the north and western property boundaries; however, the extent of residual creosote impacts has not been fully defined off site.

Other areas of interest in the western portion of the subject property were assessed for indications of creosote impacted soil. These areas included the presumed route of a potential drain line and within the footprint of a proposed building addition on the subject property. Soil samples collected in these areas did not contain visual or olfactory evidence of creosote impacts. Proposed building plans do not appear to be detrimentally impacted by the results of this study with regard to creosote impacted soil. However, potential hazard communication per 29 CFR 1910.1200 will be required based on the results of this study.

The creosote impacted soil on the subject property appears directly related to the former Gulf States Creosoting, Inc. operations. The Gulf States Creosoting, Inc. facility has been the focus of preliminary studies by the EPA and MDEQ. Based on information contained in the supporting documents reviewed by EarthCon, the results of these studies indicated the Gulf States Creosoting, Inc. operations did not meet the minimum scoring criteria to be included on the National Priorities List (Superfund), and a status of "No Further Remedial Action Planned" has been proposed for the site by EPA. This recommendation has not been accepted as yet by the MDEQ until further testing and analysis is conducted on adjacent properties (Creosote Slough).

The results of this assessment indicate an area of buried creosote and related waste material exists in the northwest portion of the ConSteelCo, Inc. property. This waste material appears directly related to former Gulf State Creosoting operations on the property. Soil samples

collected in this assessment contained concentrations of chemical contaminants in excess of MDEQ Target Remediaton Goals for Restricted Use (industrial) property settings.

Based on the information contained in this study, EarthCon recommends ConSteelCo, Inc. consult with legal counsel and appropriate regulatory agencies to determine and document an appropriate future course of action for the facility.

Table 1
Soil Analytical Data Summary

Table 1
Soil Analytical Data Summary
Limited Soil Assessment
ConSteelCo, Inc.
1625 Flowood Drive
Flowood, Mississippi
EarthCon Project No. C193.001

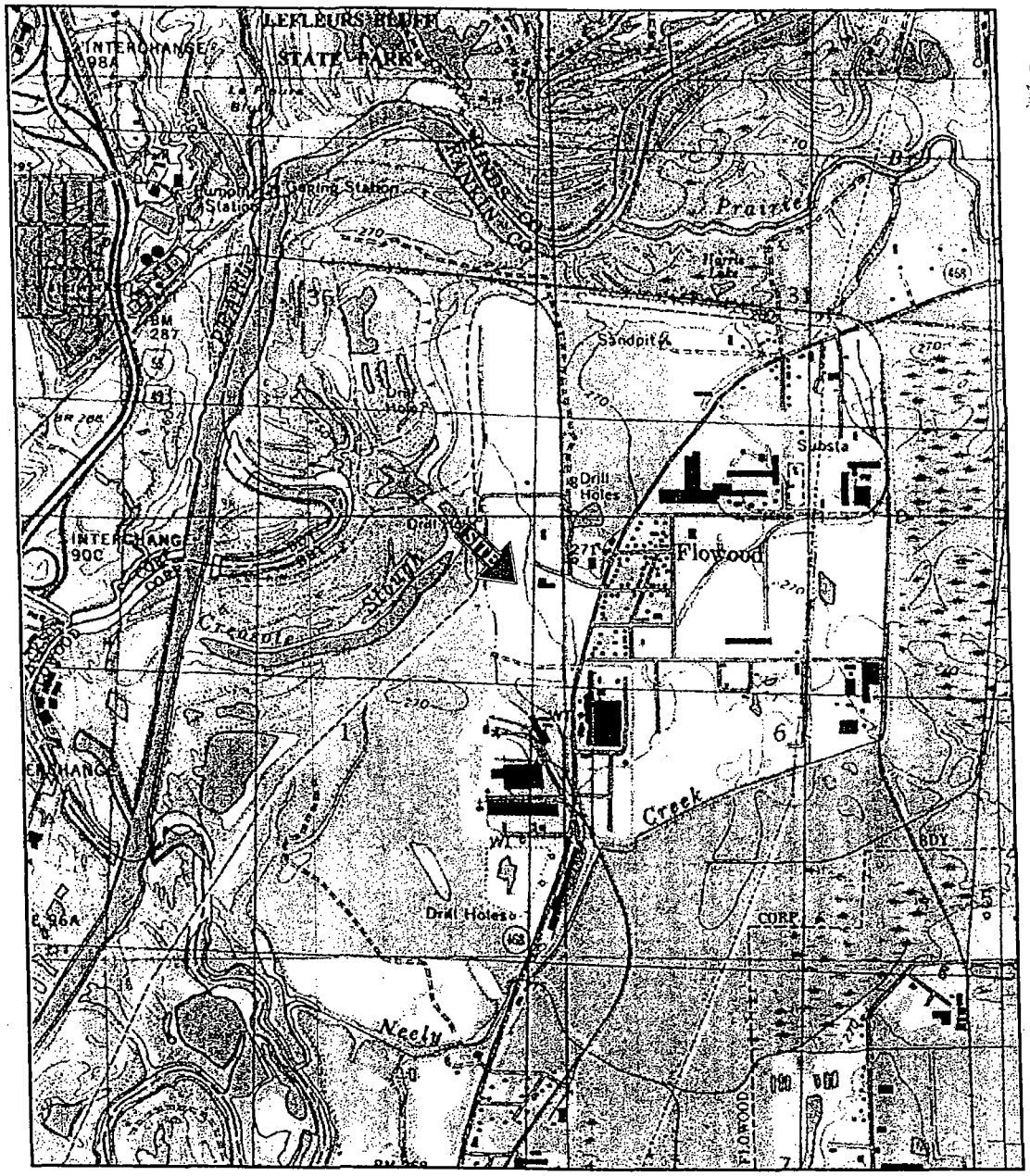
SOIL SAMPLES - September 20, 2006				
Sample No.	Location	Detected Compound	Concentration (mg/kg)	MDEQ TRG* (mg/kg)
B-2 (5.5 feet)	Northwest Corner	Acenaphthene	81	123,000
		Fluoranthene	120	81,700
		Fluorene	75	81,700
		Naphthalene	**770**	**247**
		Phenanthrene	200	61,300
		Pyrene	100	61,300
B-7 (8.0 feet)	Northwest Corner	Acenaphthene	390	123,000
		Anthracene	120	613,000
		Benzo (a) anthracene	**82**	**7.84**
		Fluoranthene	490	81,700
		Fluorene	370	81,700
		Naphthalene	**2,300**	**247**
		Phenanthrene	1,000	61,300
		Pyrene	330	61,300
B-20 (5.0 feet)	Buried Debris Area	Acenaphthene	2,400	123,000
		Anthracene	5,500	613,000
		Benzo (a) anthracene	**930**	**7.84**
		Chrysene	**850**	**784**
		Fluoranthene	5,400	81,700
		Fluorene	3,300	81,700
		Naphthalene	**4,600**	**247**
		Phenanthrene	7,400	61,300
		Pyrene	3,200	61,300

Notes:

MDEQ TRG* - Mississippi Department of Environmental Quality Target Remediation Goal for "Restricted Use" (industrial) Soil Setting

Compounds Highlighted in Yellow Exceed the Established MDEQ TRG

FIGURES



Rankin County

SOURCE: USGS 7.5' MAP - JACKSON QUADRANGLE - 1998

EarthCon

Earth Consulting Group, Inc.

P.O. Box 1246 Madison, MS 39130 Tel:(601)853-2134 Fax:(601)856-3978

DRAWN BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO.:
Glen Ivey	Jay Ferris	1" = 2000'	09/21/06	C193.001

PROJECT: ConSteelCo, Inc. - 1625 Flowood Drive - Flowood, Mississippi

TITLE: SITE LOCATION MAP

FIGURE: 1

Figure 2
2003 Aerial Photograph - Soil Boring Location Plan

EarthCon

LEGEND:

- Soil Boring Location
- Soil Boring Location With Creosote Odor
- Area of Concern
- B-20 (Group) - Area of Numerous Boring Attempts to Penetrate Buried Wood Debris

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DRAWN BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:
Glen Ivey	Jay Ferris	NTS	10/04/06	C193.001

PROJECT: ConSteelCo, Inc - 1625 Flowood Drive - Flowood, Mississippi

TITLE: 2003 AERIAL PHOTOGRAPH - SOIL BORING LOCATION MAP

FIGURE 2

APPENDICES

Appendix A
Soil Boring Logs

SOIL BORING LOG B-1

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	0900	Time Completed	0915
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		

Borehole Completion/Abandonment: Borehole allowed to collapse to surface grade

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CH	Greenish brown, soft, plastic CLAY (moist to wet) (heavy creosote odor) (creosote staining)	NR				
2.0									
3.0									
4.0									
5.0					NR				
6.0			CM	Greenish brown, firm, silty CLAY (moist) (heavy creosote odor)					
7.0			SP	Dark brown, fine SAND (moist) (heavy creosote odor) (heavy creosote staining)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type
- Continuous Core
- Split Spoon
- Hand Auger

Groundwater
- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments
- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-2

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	0915	Time Completed	0925
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CL	Greenish brown, silty, plastic CLAY (moist) (creosote odor)	NR				
2.0									
3.0			Debris	Debris, wooden (railroad tie?) (creosote product and odor)					
4.0			SC	Dark brown, slightly clayey, fine SAND (moist) (slight to moderate creosote odor)					
5.0			CH	Dark gray, stiff, highly plastic CLAY (moist) (creosote odor)	NR				
6.0							*B-2	8270C	10:30 (9/20/06)
7.0			CL	Reddish brown, slightly sandy, friable, low-plasticity CLAY (dry) (heavy creosote odor)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type
- Continuous Core
- Split Spoon
- Hand Auger

Groundwater
- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments
- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-3

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	0945	Time Completed	1000
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
					NR				
1.0			CL	Dark brown, slightly sandy, friable, low-plasticity CLAY (moist) (no odor)					
2.0			Debris	Black, slightly cemented sand (debris) (light creosote odor) (dry)					
3.0			CL	Gray to reddish brown, mottled, stiff, friable, low-plasticity CLAY (dry) (slight odor)					
4.0									
5.0									
6.0									
7.0									
8.0			CH	Reddish brown to gray, mottled, stiff, plastic CLAY (moist) (heavy creosote odor)					
				End of Boring 8.0 feet below surface grade					

Sample Type
- Continuous Core
- Split Spoon
- Hand Auger

Groundwater
- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments
- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-4

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1000	Time Completed	1010
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
			CH	Gray, dense, plastic CLAY (dry to moist) (no odor)					
1.0									
2.0									
3.0									
4.0									
5.0									
6.0									
7.0									
			CH	Light gray, firm, plastic CLAY (moist) (light to moderate creosote odor)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-5

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1015	Time Completed	1025
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CL	Light gray to reddish brown, mottled, dry, slightly plastic CLAY (dry) (no odor)					
2.0									
3.0									
4.0			CH	Gray to reddish brown, mottled, dense, plastic CLAY (dry) (no odor)					
5.0									
6.0									
7.0									
8.0			SM/SP	Light gray, slightly clayey fine SAND to fine SAND (moist) (no odor)					
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-6

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1030	Time Completed	1040
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			SM	Dark brown, organic, silty SAND (dry) (no odor)					
2.0			CH	Dark brown to reddish brown, mottled, dense, plastic CLAY (dry) (no odor)					
3.0									
4.0			CH/SC	Brown to reddish brown, mottled, sandy, plastic CLAY (dry) (no odor)					
5.0									
6.0									
7.0			SP	Light gray fine SAND (moist) (moderate to heavy creosote odor)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-7

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1045	Time Completed	1055
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0					NR				
2.0			SM	Dark brown to black, silty fine SAND with wood (railroad tie?) debris (moist to wet) (heavy creosote odor)					
3.0									
4.0									
5.0			CH	Light gray to brown, firm, plastic CLAY (moist) (heavy creosote odor)					
6.0									
7.0			SP	Dark gray to dark brown, mottled, fine SAND (moist) (heavy odor)					
8.0							*B-7	8270C	10:50 (9/20/06)
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-8

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1055	Time Completed	1105
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
					NR				
1.0									
2.0			CL	Dark brown, sandy, non-plastic CLAY (moist) (slight creosote odor)					
3.0									
4.0			CL/SP	Black, creosote-stained, soft, sandy CLAY (moist) (heavy creosote odor)					
5.0									
			CH	Greenish gray, dense, plastic CLAY (moist) (heavy creososte odor)					
6.0									
7.0									
			SP	Black to green, creosote-soaked/stained, fine SAND (moist) (heavy creosote odor)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-9

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1205	Time Completed	1215
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CH	Dark brown, slightly silty, firm, plastic CLAY (dry to moist) (slight to moderate creosote odor)	NR				
2.0									
3.0									
4.0			CM	Dark brown to black, silty, soft, plastic CLAY (moist to wet) (heavy creosote odor)					
5.0			CH	Greenish gray, firm, plastic CLAY (dry to moist) (heavy creosote odor)					
6.0									
7.0									
			CL/CM	Reddish brown, friable, slightly silty CLAY (heavy creosote odor)					
8.0			CH	Greenish gray, firm, plastic CLAY (dry to moist) (heavy creosote odor)					
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-10

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1215	Time Completed	1225
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CL	Dark gray to brown to dark brown, mottled, dry, friable, non-plastic CLAY (dry) (no odor)					
2.0									
3.0									
4.0			CH	Gray, dense, plastic CLAY (dry to moist) (no odor)					
5.0									
6.0									
7.0			CL	Light gray to black to reddish brown, mottled, dry, slightly plastic CLAY (dry) (moderate to heavy creosote odor)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- * : selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-11

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1230	Time Completed	1240
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CL/CM	Brown, slightly silty to silty, slightly sandy, low-plasticity CLAY (dry) (no odor)					
2.0			SC	Dark brown to black, silty, slightly clayey SAND with wood debris (dry to moist) (no odor)					
3.0			CL	Dark gray to dark reddish brown, mottled, friable, low-plasticity CLAY (dry) (no odor)					
4.0									
5.0									
6.0									
7.0			SP	Light gray fine SAND (moist) (no odor)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-12

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1245	Time Completed	1255
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CL/CG	Dark brown to black, silty, friable, low-plasticity Clay with black gravel fill in upper 0.5 feet					
2.0			CL	Brown to reddish brown mottled, friable, low-plasticity CLAY (dry) (no odor)					
3.0									
4.0									
5.0			CH	Dark gray to reddish brown, mottled, dense, plastic CLAY (moist) (no odor)					
6.0									
7.0									
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-13

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1315	Time Completed	1325
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			SM/SC	Dark brown to black slightly silty to silty, slightly clayey, fine SAND with wood debris (moist) (no odor)					
2.0			CL	Light brown to reddish brown, mottled, friable, low-plasticity CLAY (dry) (no odor)					
3.0									
4.0									
5.0									
6.0			SM	Black to reddish brown, silty, fine SAND (moist) (slight creosote odor)					
7.0			SP	Light brown fine SAND (moist) (no odor)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-14

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1330	Time Completed	1340
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
0.0			CH/SC	Brown, firm, plastic, slightly silty, slightly sandy CLAY (moist) (no odor)					
1.0									
2.0									
3.0									
4.0			CH	Light gray to reddish brown, mottled, dense, highly plastic, CLAY (dry to moist) (no odor)					
5.0									
6.0									
7.0			SP	Light brown, fine SAND (moist) (no odor)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type
- Continuous Core
- Split Spoon
- Hand Auger

Groundwater
- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments
- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-15

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1340	Time Completed	1350
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CL	Dark gray to brown, slightly silty to silty, friable, low-plasticity CLAY with gravel debris					
2.0			CH	Gray to reddish brown, mottled, dense, plastic CLAY (dry) (no odor)					
3.0									
4.0									
5.0									
6.0									
7.0			SP	Light brown, fine SAND (moist) (no odor)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-16

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1430	Time Completed	1440
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CH	Dark brown to black, firm, silty CLAY (moist) (no odor)					
2.0			CH	Light gray to reddish brown, mottled, dense, plastic CLAY (dry) (no odor)					
3.0									
4.0									
5.0									
6.0									
7.0			SP	Light brown, fine SAND (moist) (no odor)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-17

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1445	Time Completed	1455
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CH	Gray to reddish brown, dense, mottled, plastic Clay (dry) (no odor)					
2.0									
3.0									
4.0									
5.0									
6.0			SP	Gray to brown with black striations, fine SAND (moist) (heavy creosote odor)					
7.0									
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-18

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1500	Time Completed	1510
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CH	Gray to reddish brown, mottled, dense, plastic CLAY (moist) (light to moderate creosote odor)					
2.0									
3.0									
4.0			SP	Dark gray to light gray, mottled, slightly silty, fine SAND (dry to moist with depth) (moderate to strong creosote odor)					
5.0									
6.0									
7.0									
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-19

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1530	Time Completed	1540
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
			CH	Gray to reddish brown, mottled, dense, plastic CLAY (dry) (slight creosote odor)					
1.0									
2.0									
3.0									
4.0									
5.0			SP	Light gray, fine SAND (dry) (faint creosote odor)					
6.0									
7.0									
8.0	▼		SP	Light brown, fine SAND (moist to wet) (no odor)					
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-20 (group)

Group of shallow borings attempting to penetrate buried debris area

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/19/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	1600	Time Completed	1630
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CH	Gray to reddish brown, mottled, dense, plastic CLAY (dry) (no odor)					
2.0									
3.0									
4.0			Debris	OBSTRUCTION WITHIN 3.0-4.5 FEET BELOW GRADE (plywood, railroad ties) (debris typically wet with creosote product or containing heavy creosote odor)	NR				
5.0			CH	Light gray to reddish brown, mottled, dense, plastic CLAY (moist) (creosote odor) (edge of debris area)			*B-20	8270C	11:20
6.0									
7.0									
8.0			SP	Light gray fine SAND (moist) (no odor) (edge of debris area)					
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-21

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/20/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	0810	Time Completed	0820
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
			SM	Dark brown, slightly sandy SILT (topsoil) (moist) (no odor)					
1.0			CL	Light brown to reddish brown, mottled, friable, low-plasticity CLAY (dry) (no odor)					
2.0									
3.0									
4.0									
5.0			CH	Light greenish gray to reddish brown, mottled, dense, highly plastic CLAY (moist) (no odor)					
6.0									
7.0									
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-22

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/20/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	0830	Time Completed	0840
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
			SM	Brown, silty SAND with roots (topsoil) (dry) (no odor)					
1.0									
2.0									
			ML	Light brown to reddish brown, mottled, friable, slightly sandy SILT (dry) (no odor)					
3.0									
4.0									
5.0									
6.0			CH	Light gray to reddish brown, mottled, highly plastic CLAY (dry to moist) (no odor)					
7.0									
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-23

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/20/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	0840	Time Completed	0850
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
			ML	Dark brown slightly sandy SILT with organics (topsoil)					
1.0			CL	Light brown to reddish brown, mottled, stiff, friable slightly plastic CLAY (dry) (no odor)					
2.0									
3.0									
4.0			CH	Light gray to reddish brown, mottled, stiff, highly plastic CLAY (moist) (no odor)					
5.0									
6.0									
7.0			SC	Light gray to reddish brown, mottled, slightly clayey, fine SAND (moist) (no odor)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-24

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/20/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	0855	Time Completed	0910
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
			ML	Dark brown, slightly sandy Silt with organics (topsoil)					
1.0			CL	Light brown to reddish brown, mottled, friable, low-plasticity CLAY (dry) (no odor)					
2.0									
3.0									
4.0									
5.0			CH	Light greenish gray to reddish brown, mottled, dense, highly plastic CLAY (moist) (no odor)					
6.0									
7.0									
8.0	▼		SP	Light gray, fine SAND (wet) (no odor)					
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- * : selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-25

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/20/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	0910	Time Completed	0920
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
			ML	Dark brown, slightly sandy SILT with organics and glass debris (topsoil)					
1.0									
2.0									
3.0			CL	Brown to reddish brown, mottled, friable, low-plasticity CLAY (dry to moist) (no odor)					
4.0									
5.0									
6.0									
			SP	Brown to light brown fine SAND (moist to wet) (no odor)					
7.0									
8.0	▼								
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-26

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/20/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	0945	Time Completed	0955
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
			CH	Light gray to reddish brown, mottled, dense, highly plastic CLAY (dry) (no odor)					
1.0									
2.0									
3.0									
4.0			SP	Light gray to reddish brown, mottled, fine SAND (dry) (no odor)					
5.0									
6.0									
7.0									
				faint creosote odor (7.0-8.0 feet below grade)					
8.0									
				End of Boring 8.0 feet below surface grade					

Sample Type

- Continuous Core
- Split Spoon
- Hand Auger

Groundwater

- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments

- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

SOIL BORING LOG B-27

Project No.	C193.001	Facility ID	ConSteelCo	Date Drilled	9/20/06	Total Depth	8.0 ft.
Site	1625 Flowood Drive, Flowood, Mississippi			Start Time	0950	Time Completed	1005
Project Name	Limited Soil Investigation			Drill Rig	Geoprobe 540 UD		
Geologist	Jay Ferris	Driller	D. Riley	Auger Type	MacroCore 48-inch Direct Push		
Borehole Completion/Abandonment	Borehole allowed to collapse to surface grade						

Depth (feet)	Groundwater	Sample Type	USCS Symbol	Material Description	Recovery	PID Reading (ppm)	Sample Collected	Analytical Method	Sampling Time
1.0			CH	Gray to reddish brown, dense, highly plastic CLAY (moist) (faint odor)					
2.0									
3.0									
4.0			CH/SP	Gray to reddish brown, dense, slightly sandy, highly plastic CLAY (moist) (faint odor)					
5.0									
6.0			SP	Light gray to reddish brown, mottled, fine SAND (moist) (faint odor)					
7.0			CH/SP	Light brown, slightly sandy, plastic CLAY (moist) (faint odor)					
8.0			SP	Light gray, fine SAND (moist) (faint odor)					
				End of Boring 8.0 feet below surface grade					

Sample Type
- Continuous Core
- Split Spoon
- Hand Auger

Groundwater
- First Detected Groundwater ▼
- Equilibrated Water Level ∇

Comments
- *: selected for laboratory analysis
- ppm: parts per million
- NR: no recovery

Appendix B
Laboratory Analytical Report

ENVIRONMENTAL
SCIENCE CORP.

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Madison, MS 39130

Report Summary

Friday September 29, 2006

Report Number: L262154
Samples Received: 09/22/06
Client Project: C193.001

Description: ConSteelCo Creosote Assessment

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Reviewed By:
Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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Est. 1970

REPORT OF ANALYSIS

Mr. Jay Ferris
Earth Consulting Group, Inc.
P.O. Box 1246
Madison, MS 39130

September 29, 2006

Date Received : September 22, 2006
Description : ConSteelCo Creosote Assessment

ESC Sample # : L262154-02

Sample ID : B-2 5.5 FT

Site ID :

Collected By : Jay Ferris
Collection Date : 09/20/06 10:30

Project # : C193.001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Base/Neutral Extractables						
Acenaphthene	81.	66.	mg/kg	8270C	09/26/06	200
Acenaphthylene	BDL	66.	mg/kg	8270C	09/26/06	200
Anthracene	BDL	66.	mg/kg	8270C	09/26/06	200
Benzidine	BDL	66.	mg/kg	8270C	09/26/06	200
Benzo(a)anthracene	BDL	66.	mg/kg	8270C	09/26/06	200
Benzo(b)fluoranthene	BDL	66.	mg/kg	8270C	09/26/06	200
Benzo(k)fluoranthene	BDL	66.	mg/kg	8270C	09/26/06	200
Benzo(g,h,i)perylene	BDL	66.	mg/kg	8270C	09/26/06	200
Benzo(a)pyrene	BDL	66.	mg/kg	8270C	09/26/06	200
Bis(2-chlorethoxy)methane	BDL	66.	mg/kg	8270C	09/26/06	200
Bis(2-chloroethyl)ether	BDL	66.	mg/kg	8270C	09/26/06	200
Bis(2-chloroisopropyl)ether	BDL	66.	mg/kg	8270C	09/26/06	200
4-Bromophenyl-phenylether	BDL	66.	mg/kg	8270C	09/26/06	200
2-Chloronaphthalene	BDL	66.	mg/kg	8270C	09/26/06	200
4-Chlorophenyl-phenylether	BDL	66.	mg/kg	8270C	09/26/06	200
Chrysene	BDL	66.	mg/kg	8270C	09/26/06	200
Dibenz(a,h)anthracene	BDL	66.	mg/kg	8270C	09/26/06	200
3,3-Dichlorobenzidine	BDL	66.	mg/kg	8270C	09/26/06	200
2,4-Dinitrotoluene	BDL	66.	mg/kg	8270C	09/26/06	200
2,6-Dinitrotoluene	BDL	66.	mg/kg	8270C	09/26/06	200
Fluoranthene	BDL	66.	mg/kg	8270C	09/26/06	200
Fluorene	120	66.	mg/kg	8270C	09/26/06	200
Hexachlorobenzene	75.	66.	mg/kg	8270C	09/26/06	200
Hexachloro-1,3-butadiene	BDL	66.	mg/kg	8270C	09/26/06	200
Hexachlorocyclopentadiene	BDL	66.	mg/kg	8270C	09/26/06	200
Hexachloroethane	BDL	66.	mg/kg	8270C	09/26/06	200
Indeno(1,2,3-cd)pyrene	BDL	66.	mg/kg	8270C	09/26/06	200
Isophorone	BDL	66.	mg/kg	8270C	09/26/06	200
Naphthalene	770	66.	mg/kg	8270C	09/26/06	200
Nitrobenzene	BDL	66.	mg/kg	8270C	09/26/06	200
n-Nitrosodimethylamine	BDL	10.	mg/kg	8270C	09/26/06	200
n-Nitrosodiphenylamine	BDL	66.	mg/kg	8270C	09/26/06	200
n-Nitrosodi-n-propylamine	BDL	66.	mg/kg	8270C	09/26/06	200
Phenanthrene	200	66.	mg/kg	8270C	09/26/06	200
Benzylbutyl phthalate	BDL	66.	mg/kg	8270C	09/26/06	200
Bis(2-ethylhexyl)phthalate	BDL	66.	mg/kg	8270C	09/26/06	200
Di-n-butyl phthalate	BDL	66.	mg/kg	8270C	09/26/06	200
Diethyl phthalate	BDL	66.	mg/kg	8270C	09/26/06	200
Dimethyl phthalate	BDL	66.	mg/kg	8270C	09/26/06	200
Di-n-octyl phthalate	BDL	66.	mg/kg	8270C	09/26/06	200
Pyrene	100	66.	mg/kg	8270C	09/26/06	200
1,2,4-Trichlorobenzene	BDL	66.	mg/kg	8270C	09/26/06	200
Acid Extractables						

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Mr. Jay Ferris
Earth Consulting Group, Inc.
P.O. Box 1246
Madison, MS 39130

September 29, 2006

Date Received : September 22, 2006
Description : ConSteelCo Creosote Assessment

Sample ID : B-2 5.5 FT

Collected By :
Collection Date : 09/20/06 10:30

ESC Sample # : L262154-02

Site ID :

Project # : C193.001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
4-Chloro-3-methylphenol	BDL	66.	mg/kg	8270C	09/26/06	200
2-Chlorophenol	BDL	66.	mg/kg	8270C	09/26/06	200
2,4-Dichlorophenol	BDL	66.	mg/kg	8270C	09/26/06	200
2,4-Dimethylphenol	BDL	66.	mg/kg	8270C	09/26/06	200
4,6-Dinitro-2-methylphenol	BDL	66.	mg/kg	8270C	09/26/06	200
2,4-Dinitrophenol	BDL	66.	mg/kg	8270C	09/26/06	200
2-Nitrophenol	BDL	66.	mg/kg	8270C	09/26/06	200
4-Nitrophenol	BDL	66.	mg/kg	8270C	09/26/06	200
Pentachlorophenol	BDL	66.	mg/kg	8270C	09/26/06	200
Phenol	BDL	66.	mg/kg	8270C	09/26/06	200
2,4,6-Trichlorophenol	BDL	66.	mg/kg	8270C	09/26/06	200
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C	09/26/06	200
2-Fluorobiphenyl	0.00		% Rec.	8270C	09/26/06	200
p-Terphenyl-d14	0.00		% Rec.	8270C	09/26/06	200
Phenol-d5	0.00		% Rec.	8270C	09/26/06	200
2-Fluorophenol	0.00		% Rec.	8270C	09/26/06	200
2,4,6-Tribromophenol	0.00		% Rec.	8270C	09/26/06	200

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 09/29/06 16:05 Printed: 09/29/06 17:50

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Earth Consulting Group, Inc.
P.O. Box 1246
Madison, MS 39130

September 29, 2006

Date Received : September 22, 2006
Description : ConSteelCo Creosote Assessment

ESC Sample # : L262154-01

Sample ID : B-7 8 FT

Site ID :

Collected By :
Collection Date : 09/20/06 10:50

Project # : C193.001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Base/Neutral Extractables						
Acenaphthene	390	66.	mg/kg	8270C	09/26/06	200
Acenaphthylene	BDL	66.	mg/kg	8270C	09/26/06	200
Anthracene	120	66.	mg/kg	8270C	09/26/06	200
Benzidine	BDL	66.	mg/kg	8270C	09/26/06	200
Benzo(a)anthracene	82.	66.	mg/kg	8270C	09/26/06	200
Benzo(b)fluoranthene	BDL	66.	mg/kg	8270C	09/26/06	200
Benzo(k)fluoranthene	BDL	66.	mg/kg	8270C	09/26/06	200
Benzo(g,h,i)perylene	BDL	66.	mg/kg	8270C	09/26/06	200
Benzo(a)pyrene	BDL	66.	mg/kg	8270C	09/26/06	200
Bis(2-chlorethoxy)methane	BDL	66.	mg/kg	8270C	09/26/06	200
Bis(2-chloroethyl)ether	BDL	66.	mg/kg	8270C	09/26/06	200
Bis(2-chloroisopropyl)ether	BDL	66.	mg/kg	8270C	09/26/06	200
4-Bromophenyl-phenylether	BDL	66.	mg/kg	8270C	09/26/06	200
2-Chloronaphthalene	BDL	66.	mg/kg	8270C	09/26/06	200
4-Chlorophenyl-phenylether	BDL	66.	mg/kg	8270C	09/26/06	200
Chrysene	BDL	66.	mg/kg	8270C	09/26/06	200
Dibenz(a,h)anthracene	BDL	66.	mg/kg	8270C	09/26/06	200
3,3-Dichlorobenzidine	BDL	66.	mg/kg	8270C	09/26/06	200
2,4-Dinitrotoluene	BDL	66.	mg/kg	8270C	09/26/06	200
2,6-Dinitrotoluene	BDL	66.	mg/kg	8270C	09/26/06	200
Fluoranthene	490	66.	mg/kg	8270C	09/26/06	200
Fluorene	370	66.	mg/kg	8270C	09/26/06	200
Hexachlorobenzene	BDL	66.	mg/kg	8270C	09/26/06	200
Hexachloro-1,3-butadiene	BDL	66.	mg/kg	8270C	09/26/06	200
Hexachlorocyclopentadiene	BDL	66.	mg/kg	8270C	09/26/06	200
Hexachloroethane	BDL	66.	mg/kg	8270C	09/26/06	200
Indeno(1,2,3-cd)pyrene	BDL	66.	mg/kg	8270C	09/26/06	200
Isophorone	BDL	66.	mg/kg	8270C	09/26/06	200
Naphthalene	2300	660	mg/kg	8270C	09/29/06	2000
Nitrobenzene	BDL	66.	mg/kg	8270C	09/26/06	200
n-Nitrosodimethylamine	BDL	10.	mg/kg	8270C	09/26/06	200
n-Nitrosodiphenylamine	BDL	66.	mg/kg	8270C	09/26/06	200
n-Nitrosodi-n-propylamine	BDL	66.	mg/kg	8270C	09/26/06	200
Phenanthrene	1000	330	mg/kg	8270C	09/28/06	1000
Benzylbutyl phthalate	BDL	66.	mg/kg	8270C	09/26/06	200
Bis(2-ethylhexyl)phthalate	BDL	66.	mg/kg	8270C	09/26/06	200
Di-n-butyl phthalate	BDL	66.	mg/kg	8270C	09/26/06	200
Diethyl phthalate	BDL	66.	mg/kg	8270C	09/26/06	200
Dimethyl phthalate	BDL	66.	mg/kg	8270C	09/26/06	200
Di-n-octyl phthalate	BDL	66.	mg/kg	8270C	09/26/06	200
Pyrene	330	66.	mg/kg	8270C	09/26/06	200
1,2,4-Trichlorobenzene	BDL	66.	mg/kg	8270C	09/26/06	200
Acid Extractables						

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit (PQL)

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Madison, MS 39130

September 29, 2006

Date Received : September 22, 2006
Description : ConSteelCo Creosote Assessment

Sample ID : B-7 8 FT

Collected By : Jay Ferris
Collection Date : 09/20/06 10:50

ESC Sample # : L262154-01

Site ID :

Project # : C193.001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
4-Chloro-3-methylphenol	BDL	66.	mg/kg	8270C	09/26/06	200
2-Chlorophenol	BDL	66.	mg/kg	8270C	09/26/06	200
2,4-Dichlorophenol	BDL	66.	mg/kg	8270C	09/26/06	200
2,4-Dimethylphenol	BDL	66.	mg/kg	8270C	09/26/06	200
4,6-Dinitro-2-methylphenol	BDL	66.	mg/kg	8270C	09/26/06	200
2,4-Dinitrophenol	BDL	66.	mg/kg	8270C	09/26/06	200
2-Nitrophenol	BDL	66.	mg/kg	8270C	09/26/06	200
4-Nitrophenol	BDL	66.	mg/kg	8270C	09/26/06	200
Pentachlorophenol	BDL	66.	mg/kg	8270C	09/26/06	200
Phenol	BDL	66.	mg/kg	8270C	09/26/06	200
2,4,6-Trichlorophenol	BDL	66.	mg/kg	8270C	09/26/06	200
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C	09/26/06	200
2-Fluorobiphenyl	0.00		% Rec.	8270C	09/26/06	200
p-Terphenyl-d14	0.00		% Rec.	8270C	09/26/06	200
Phenol-d5	0.00		% Rec.	8270C	09/26/06	200
2-Fluorophenol	0.00		% Rec.	8270C	09/26/06	200
2,4,6-Tribromophenol	0.00		% Rec.	8270C	09/26/06	200

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Mr. Jay Ferris
Earth Consulting Group, Inc.
P.O. Box 1246
Madison, MS 39130

September 29, 2006

Date Received : September 22, 2006
Description : ConSteelCo Creosote Assessment

ESC Sample # : L262154-03

Sample ID : B-20 5 FT

Site ID :

Collected By :
Collection Date : 09/20/06 11:20

Project # : C193.001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Base/Neutral Extractables						
Acenaphthene	2400	660	mg/kg	8270C	09/26/06	2000
Acenaphthylene	BDL	660	mg/kg	8270C	09/26/06	2000
Anthracene	5500	660	mg/kg	8270C	09/26/06	2000
Benzidine	BDL	660	mg/kg	8270C	09/26/06	2000
Benzo(a)anthracene	930	660	mg/kg	8270C	09/26/06	2000
Benzo(b)fluoranthene	BDL	660	mg/kg	8270C	09/26/06	2000
Benzo(k)fluoranthene	BDL	660	mg/kg	8270C	09/26/06	2000
Benzo(g,h,i)perylene	BDL	660	mg/kg	8270C	09/26/06	2000
Benzo(a)pyrene	BDL	660	mg/kg	8270C	09/26/06	2000
Bis(2-chlorethoxy)methane	BDL	660	mg/kg	8270C	09/26/06	2000
Bis(2-chloroethyl)ether	BDL	660	mg/kg	8270C	09/26/06	2000
Bis(2-chloroisopropyl)ether	BDL	660	mg/kg	8270C	09/26/06	2000
4-Bromophenyl-phenylether	BDL	660	mg/kg	8270C	09/26/06	2000
2-Chloronaphthalene	BDL	660	mg/kg	8270C	09/26/06	2000
4-Chlorophenyl-phenylether	BDL	660	mg/kg	8270C	09/26/06	2000
Chrysene	850	660	mg/kg	8270C	09/26/06	2000
Dibenz(a,h)anthracene	BDL	660	mg/kg	8270C	09/26/06	2000
3,3-Dichlorobenzidine	BDL	660	mg/kg	8270C	09/26/06	2000
2,4-Dinitrotoluene	BDL	660	mg/kg	8270C	09/26/06	2000
2,6-Dinitrotoluene	BDL	660	mg/kg	8270C	09/26/06	2000
Fluoranthene	5400	660	mg/kg	8270C	09/26/06	2000
Fluorene	3300	660	mg/kg	8270C	09/26/06	2000
Hexachlorobenzene	BDL	660	mg/kg	8270C	09/26/06	2000
Hexachloro-1,3-butadiene	BDL	660	mg/kg	8270C	09/26/06	2000
Hexachlorocyclopentadiene	BDL	660	mg/kg	8270C	09/26/06	2000
Hexachloroethane	BDL	660	mg/kg	8270C	09/26/06	2000
Indeno(1,2,3-cd)pyrene	BDL	660	mg/kg	8270C	09/26/06	2000
Isophorone	BDL	660	mg/kg	8270C	09/26/06	2000
Naphthalene	4600	660	mg/kg	8270C	09/26/06	2000
Nitrobenzene	BDL	660	mg/kg	8270C	09/26/06	2000
n-Nitrosodimethylamine	BDL	100	mg/kg	8270C	09/26/06	2000
n-Nitrosodiphenylamine	BDL	660	mg/kg	8270C	09/26/06	2000
n-Nitrosodi-n-propylamine	BDL	660	mg/kg	8270C	09/26/06	2000
Phenanthrene	7400	660	mg/kg	8270C	09/26/06	2000
Benzylbutyl phthalate	BDL	660	mg/kg	8270C	09/26/06	2000
Bis(2-ethylhexyl)phthalate	BDL	660	mg/kg	8270C	09/26/06	2000
Di-n-butyl phthalate	BDL	660	mg/kg	8270C	09/26/06	2000
Diethyl phthalate	BDL	660	mg/kg	8270C	09/26/06	2000
Dimethyl phthalate	BDL	660	mg/kg	8270C	09/26/06	2000
Di-n-octyl phthalate	BDL	660	mg/kg	8270C	09/26/06	2000
Pyrene	3200	660	mg/kg	8270C	09/26/06	2000
1,2,4-Trichlorobenzene	BDL	660	mg/kg	8270C	09/26/06	2000
Acid Extractables						

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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P.O. Box 1246
Madison, MS 39130

September 29, 2006

Date Received : September 22, 2006
Description : ConSteelCo Creosote Assessment

ESC Sample # : L262154-03

Sample ID : B-20 5 FT

Site ID :

Collected By : Jay Ferris
Collection Date : 09/20/06 11:20

Project # : C193.001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
4-Chloro-3-methylphenol	BDL	660	mg/kg	8270C	09/26/06	2000
2-Chlorophenol	BDL	660	mg/kg	8270C	09/26/06	2000
2,4-Dichlorophenol	BDL	660	mg/kg	8270C	09/26/06	2000
2,4-Dimethylphenol	BDL	660	mg/kg	8270C	09/26/06	2000
4,6-Dinitro-2-methylphenol	BDL	660	mg/kg	8270C	09/26/06	2000
2,4-Dinitrophenol	BDL	660	mg/kg	8270C	09/26/06	2000
2-Nitrophenol	BDL	660	mg/kg	8270C	09/26/06	2000
4-Nitrophenol	BDL	660	mg/kg	8270C	09/26/06	2000
Pentachlorophenol	BDL	660	mg/kg	8270C	09/26/06	2000
Phenol	BDL	660	mg/kg	8270C	09/26/06	2000
2,4,6-Trichlorophenol	BDL	660	mg/kg	8270C	09/26/06	2000
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C	09/26/06	2000
2-Fluorobiphenyl	0.00		% Rec.	8270C	09/26/06	2000
p-Terphenyl-d14	0.00		% Rec.	8270C	09/26/06	2000
Phenol-d5	0.00		% Rec.	8270C	09/26/06	2000
2-Fluorophenol	0.00		% Rec.	8270C	09/26/06	2000
2,4,6-Tribromophenol	0.00		% Rec.	8270C	09/26/06	2000

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 09/29/06 16:05 Printed: 09/29/06 17:50

Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L262154-01	Acenaphthene	E
	Fluoranthene	E
	Fluorene	E
	Naphthalene	E
	Phenanthrene	E
	Pyrene	E
	Nitrobenzene-d5	J7
	2-Fluorobiphenyl	J7
	p-Terphenyl-d14	J7
	Phenol-d5	J7
	2-Fluorophenol	J7
	2,4,6-Tribromophenol	J7
L262154-02	Naphthalene	E
	Phenanthrene	E
	Nitrobenzene-d5	J7
	2-Fluorobiphenyl	J7
	p-Terphenyl-d14	J7
	Phenol-d5	J7
	2-Fluorophenol	J7
	2,4,6-Tribromophenol	J7
L262154-03	Acenaphthene	E
	Anthracene	E
	Fluoranthene	E
	Fluorene	E
	Naphthalene	E
	Phenanthrene	E
	Pyrene	E
	Nitrobenzene-d5	J7
	2-Fluorobiphenyl	J7
	p-Terphenyl-d14	J7
	Phenol-d5	J7
	2-Fluorophenol	J7
	2,4,6-Tribromophenol	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

	Control Limits			(AQ)	(SS)
2-Fluorophenol	31-119	Nitrobenzene-d5	43-118	Dibromfluoromethane 68-128	64-125
Phenol-d5	12-134	2-Fluorobiphenyl	45-128	Toluene-d8 76-115	69-118
2,4,6-Tribromophenol	51-141	Terphenyl-d14	43-137	4-Bromofluorobenzene 79-127	61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
09/29/06 at 17:50:25

TSR Signing Reports: 034
RX - Priority Rush

Sample: L262154-01 Account: ECGMS Received: 09/22/06 09:00 Due Date: 09/29/06 00:00 RPT Date: 09/29/06 16:05

Sample: L262154-02 Account: ECGMS Received: 09/22/06 09:00 Due Date: 09/29/06 00:00 RPT Date: 09/29/06 16:05

Sample: L262154-03 Account: ECGMS Received: 09/22/06 09:00 Due Date: 09/29/06 00:00 RPT Date: 09/29/06 16:05

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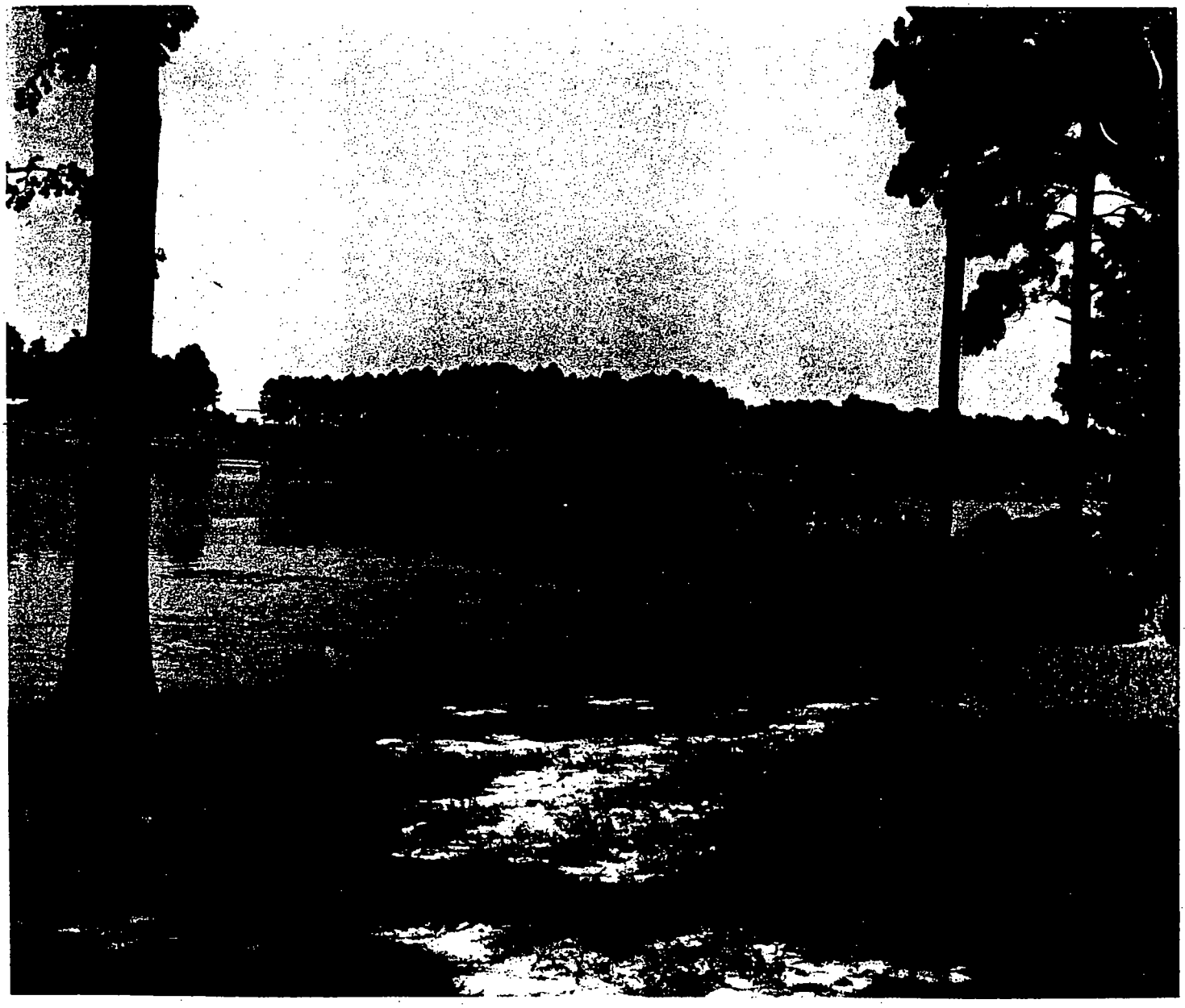
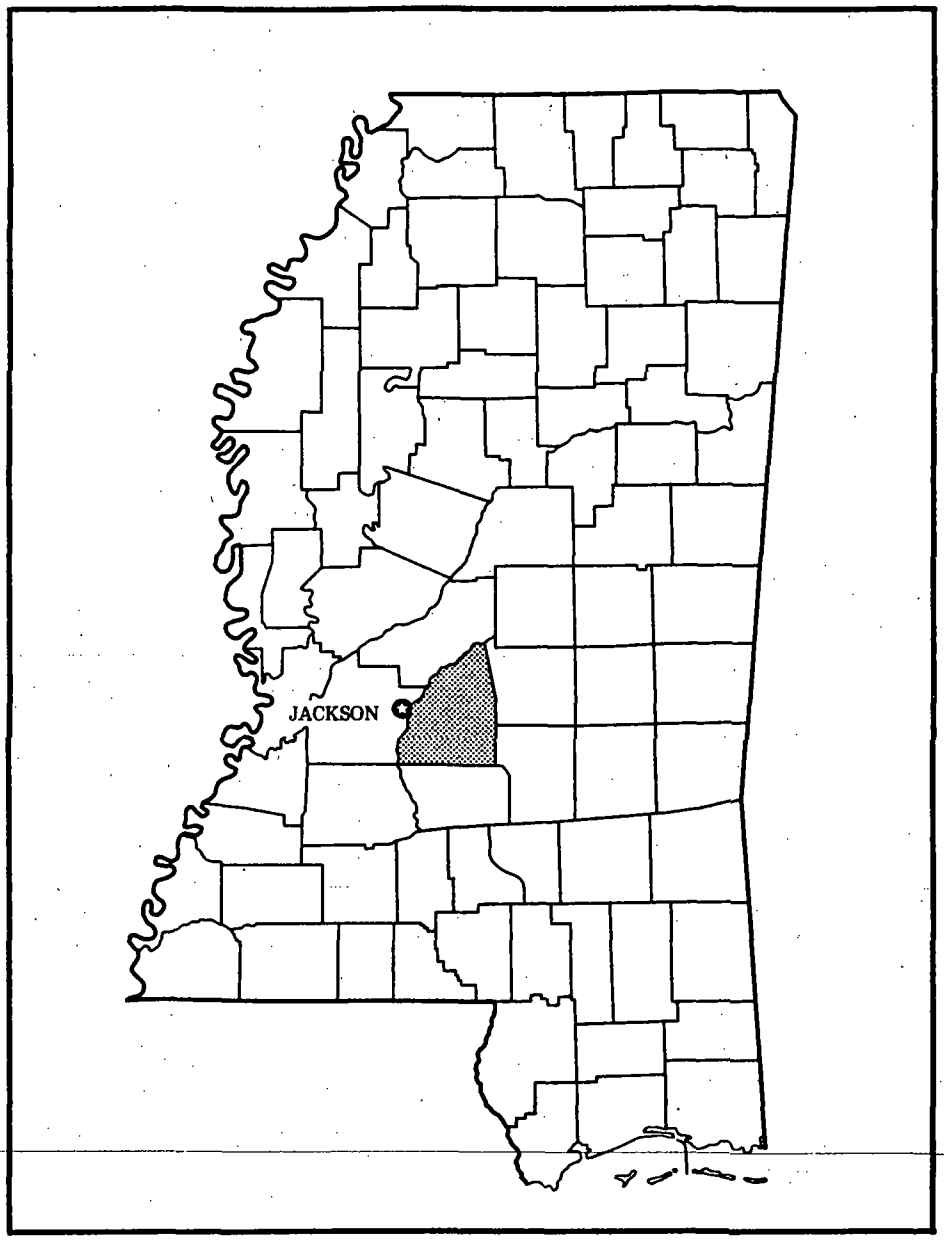
Reference 7
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

Soil Survey of Rankin County, Mississippi





Location of Rankin County in Mississippi.

Summary of Tables

Index to Map Units

Soil Survey of Rankin County, Mississippi

By William A. Cole, Sr., Roger W. Smith, Mary Louise Spann, and Delmer C. Stamps, Soil Conservation Service

United States Department of Agriculture, Soil Conservation Service
In cooperation with
Mississippi Agricultural and Forestry Experiment Station

RANKIN COUNTY is in the southern part of Mississippi. It has a land area of 497,000 acres, or about 776.6 square miles. The total area, including bodies of water of more than 40 acres, is about 512,000 acres. Brandon, the county seat, is near the center of the county. The population of the county in 1980 was 68,183 according to the census.

The western boundary of the county is the Pearl River. The maximum dimension from north to south is about 37 miles and about 30 miles from east to west. The county is bounded on the north by Madison County, on the west by Hinds County, on the south by Simpson County, and on the east by Scott and Smith Counties.

Cotton, soybeans, forest products, poultry, beef and dairy production, and swine are the major sources of agricultural income in Rankin County. Many employees of nearby industrial plants are part-time farmers in the county.

The descriptions, names, and delineations of soils in this survey do not fully agree with those on soil maps for adjacent counties. Differences are the results of better understanding of soils, modification in series concepts, intensity of mapping, or the extent of soils within the survey area.

General Nature of the Survey Area

This section provides information about the climate, history and development, transportation, physiography and geology, relief and drainage, and agriculture of Rankin County.

Climate

Prepared by the National Climatic Data Center, Asheville, North Carolina.

Rankin County, Mississippi, has long, hot summers because moist tropical air from the Gulf of Mexico persistently covers the area. Winters are cool and fairly short with only a rare cold wave that moderates in 1 or 2 days. Precipitation is fairly heavy throughout the year, and prolonged droughts are rare. Summer precipitation, mainly afternoon thunderstorms, is adequate for crops.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Pelahatchie in the period 1951 to 1981. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter the average temperature is 50.3 degrees F, and the average daily minimum temperature is 37.7 degrees. The lowest temperature on record, which occurred at Pelahatchie on January 12, 1962, is -3 degrees. In summer the average temperature is 79 degrees, and the average daily maximum temperature is 91 degrees. The highest recorded temperature, which occurred on July 16, 1980, at Pelahatchie, is 104 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the averag temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used t schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 55 inches. Of this, 26 inches, or 50 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 21 inches. The heaviest 1-day rainfall during the period of record was 5.58 inches at Pelahatchie on December 29, 1954. Thunderstorms occur on about 64 days each year, and most occur in summer.

The average seasonal snowfall is less than 1 inch. The greatest snow depth at any one time during the period of record was 5 inches.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 90 percent. The sun shines 65 percent of the time possible in summer and 50 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 9 miles per hour, in spring.

Severe local storms, including tornadoes, strike occasionally in or near the area. They are short and cause variable and spotty damage. Every few years in summer or autumn, a tropical depression or remnant of a hurricane that has moved inland causes extremely heavy rains for 1 to 3 days.

History and Development

The earliest settlers in Rankin County were the Choctaw Indians. The Choctaw Indians farmed the land. In 1820, the Choctaws ceded to the United States the area that is now Rankin County in the Treaty of Doak's Stand, Second Choctaw Cecession *(6)*.

On February 4, 1928, Rankin County was formed from the part of Hinds County that was east of the Pearl River. The county was named for Christopher Rankin, a congressman from Natchez and a member of the State Constitutional Convention of 1817. In 1829, commissioners were appointed to locate a site for the county seat. The site chosen was named Brandon in honor of Gerard C. Brandon, Mississippi's first native governor. In 1831, Brandon became the county seat. Early settlements in Rankin County included Richmond, Steens Creek, Fannin, Antioch, and Pisgah.

The Rankin County acreage that is west of Brandon and south to Florence is mainly in urban, commercial, and industrial use. This area adjoins the city of Jackson, Mississippi's state capitol. The remaining acreage is mainly in agricultural and woodland use.

The population of Rankin County in 1830 was 2,081, and in 1860, it had increased to 13,635. In 1979, the population was estimated at 65,000.

Transportation

Access to Rankin County is provided by 10 state highways, two U.S. highways, Interstate Highways 55 and 20, and numerous county roads and streets. The Illinois Central Gulf Railroad has two lines that cross the county and follow the U.S. highways in an east-west and northwest-south direction. Jackson Municipal Airport is in Rankin County and is serviced by three major airlines. Rankin County's proximity to Jackson, the state capitol, places it in the center of a busy transportation system.

Physiography and Geology

Michael C. Seal, geologist, Mississippi Bureau of Geology, Jackson, Mississippi, prepared this section.

Mississippi is in the Gulf Coastal Plain physiographic province of North America. The state has been further subdivided into 12 physiographic units. In Rankin County, three of these units are represented. The northern two-thirds of the county is characterized by the Jackson Prairie Belt. Noted by gently rolling terrain, its southern limit roughly coincides with the geologic contact between the Yazoo Formation and the Forrest Hill Formation. South of the Jackson Prairie Belt is the Vicksburg Hills, characterized by gently rolling hills. The southern section of Rankin County is characterized by the Piney Woods physiographic unit and is underlain by the Catahoula Formation. On some of the higher elevations are outcrops of preloess terrace deposits and some Citronelle deposits *(3)*.

Bedrock exposed in Rankin County is of Eocene, Oligocene, and Miocene series of the Tertiary System *(4)* and of the Pliestocene and Recent series of the Quaternary System.

The oldest unit exposed in the county is the Yazoo Formation of the Jackson Group. The Yazoo clay is a calcium montmorillonite that exhibits high shrink-swell potential with the removal or addition of water. This characteristic of the Yazoo clay causes foundation problems for all types of structures and roadbeds located on its outcrop. The major economic value of this material is as a lightweight aggregate, but it can also be mixed with other clays to make brick and ceramic materials.

The next oldest sediments exposed are of the Forrest Hill Formation. On the surface, the Forrest Hill sediments are thinly bedded, silty, micaceous, gray, fine to very fine grained sands. Clays are generally gray, buff, pink, and yellow. Thin lignite beds can also be observed in some outcrops. Petrified wood is often scattered over the surface of many Forrest Hill outcrops. A few domestic water wells are completed in the Forrest Hill Formation.

The Mint Springs marl is a gray-green, fine to coarse grained, fossiliferous to very fossiliferous, glauconitic sand. It is sometimes clayey in part and often limy. Fossils in this formation are mostly *Pectins* and oysters. Ferruginous sandstone, limonitic and manganiferous nodules and concretions are the end product of the weathered Mint Spring marl.

The Glendon limestone are characterized by alternating beds of limestone and marl. The thickness of the limestone beds ranges from 4 feet to less than 1/2

foot. They appear gray in the unweathered state. They are glauconitic, fossiliferous, and occasionally slightly sandy to sandy. Weathered Glendon limestone outcrops are noted by resistant limestone ledges, often intermittently apparent in dark-brown residuum. Some outcrops exhibit a white, waxy clay that is on the surface of the residuum. This clay is predominantly montmorillonite and halloysite with kaolinite as a trace constituent. The Glendon limestone has produced lime that is suitable for agricultural and construction purposes. Many specimens of *Foraminifera* and *Pectins* can be collected at Glendon limestone outcrops.

Weathered Byram marl appears as brownish-red, slightly sandy clay. Ferruginous concretions are generally on the surface of weathered exposures. Fossils are abundant in the Byram marl, and several studies of these fossils have been made.

Weathered Bucatunna clay is chocolate brown, has conchoidal blocky fracture, is slightly micaceous, and is slightly silty. Some weathered Bucatunna clay has the resemblance of silty loam. Weathering can make Bucatunna clay difficult to identify.

In weathered outcrops, the Catahoula Formation is an indurated nonmarine series of clays, silts, and sands. In the unweathered state, it is generally not indurated. In some intervals of the Catahoula Formation in Rankin County, an extraordinary amount of salt is evident. Often, these have been used as salt licks by wild and domestic animals. The Catahoula Formation is a source of water for numerous domestic, agricultural, and municipal wells.

The Citronelle Formation is composed of chert and quartz gravel and fine to coarse grained sands and is Pliocene in age.

Preloess terrace deposits consist of fine- to coarse-grained sands that locally contain small amounts of pebble-size gravel. The sands are generally stained orange-red to buff and the gravels are generally finer than those in the Citronelle Formation.

Alluvial plains have developed along the two major rivers in Rankin County and along some of their tributaries.

Relief and Drainage

The topography of Rankin County ranges from gently rolling to steep. In the north one-third of the county and in the area around the Jackson Dome, broad, rounded hills and wide, flat alluvial plains are common. In other parts, more sloping terrain is common. Some areas have high narrow ridges and deep narrow valleys. The highest elevation is about 612 feet along a ridge south of Shiloh Lookout Tower. The lowest point is in the southwest corner of the county along the Pearl River where the elevation is less than 220 feet.

Rankin County is drained by the Pearl River and its tributary, the Strong River. A ridge dividing the two watersheds crosses the southeastern one-fourth of the county in a southwest-northeast direction. Both rivers are fed by four main creeks and their tributaries. The major creeks in the Pearl River watershed are Fannegusha Creek in north Rankin County, Pelahatchie Creek in the north-central area, Richland Creek in west-central Rankin County, and Steen Creek in the southwestern area. The major creeks feeding the Strong River are the Dabbs, Campbell, Brushy, and Purvis Creeks.

Agriculture

When Rankin County was inhabited mainly by the Choctaw Indians, corn was the major agricultural crop. Beans, pumpkins, and melons were the minor crops.

With the early European settlers came changing cropping systems, and before long, cotton was the major cash crop. About 7,500 bales of cotton were produced in 1851 and about 15,000 bales in 1899. Cotton production has fluctuated in the 20th century. About 4,500 bales were produced in 1924, 6,300 bales in 1969, 11,300 bales in 1974, and 9,200 bales in 1981. In recent years, poultry and poultry products have replaced cotton as the main cash crop. In 1974, cotton produced a total income of 2.5 million dollars while poultry and poultry products yielded more than 21.4 million dollars for Rankin County farmers.

Since the early 1900's, the number of farms in Rankin County has declined while the size of the farms has increased. There were 4,151 farms in 1910, 2,207 farms in 1925, and only 888 farms in 1974. The size of the average farm from 1910 to 1925 was 85 acres; and in 1974, it had increased to about 203 acres. In 1910, about 70 percent of the county was in farms, but by 1974, only 36 percent remained in farmland.

In 1965, about 3,000 dairy cattle were in Rankin County. By 1970 the number had declined to 1,700 and by 1974 it had declined to only 998. During this same period, the number of beef cattle changed little, and in 1974, it remained at about 23,000 head.

Woodland in Rankin County decreased from 359,900 acres in 1958 to 310,000 acres in 1977.

How This Survey Was Made

This survey was made to provide information about the soils in the survey area. The information includes a description of the soils and their location and a discussion of the suitability, limitations, and management of the soils for specified uses. Soil scientists observed the steepness, length, and shape of slopes; the general pattern of drainage; the kinds of crops and native plants growing on the soils; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material from which the soil formed. The

unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils in the survey area occur in an orderly pattern that is related to the geology, the landforms, relief, climate, and the natural vegetation of the area. Each kind of soil is associated with a particular kind of landscape or with a segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientist to predict with considerable accuracy the kind of soil at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, acidity, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. The system of taxonomic classification used in the United States is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they correlated the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area are generally collected for laboratory analyses and for engineering tests. Soil scientists interpreted the data from these analyses and tests as well as the field-observed characteristics and the soil properties in terms of expected behavior of the soils under different uses. Interpretations for all of the soils were field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and new interpretations sometimes are developed to meet local needs. Data were assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management were assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can state with a fairly high degree of probability that a given soil will have a high water table within certain depths in most years, but they cannot assure that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by several kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. In the detailed soil map units, these latter soils are called inclusions or included soils. In the general soil map units, they are called soils of minor extent.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed, and consequently are not mentioned in the descriptions, especially where the soil pattern was so

complex that it was impractical to make enough observations to identify all of the kinds of soils on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but onsite investigation is needed to plan for intensive uses in small areas.

General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, a map unit consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one unit can occur in other units but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or a building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Each map unit is rated for *cultivated crops, woodland, urban uses,* and *wildlife habitat.* Cultivated crops are those grown extensively in the survey area. Woodland refers to areas of native or introduced trees. Urban uses include residential, commercial, and industrial developments. Wildlife habitat includes openland, woodland, and wetland wildlife habitat.

Dominantly nearly level soils that are well drained to poorly drained; on low stream terraces and flood plains

In this group are five general soil map units. The major soils are the well drained to poorly drained, silty Arkabutla, Cascilla, Gillsburg, Guyton, Leverett, Oaklimeter, Tippo, and Urbo soils; and the moderately well drained, loamy Kirkville and Quitman soils. The slopes range from 0 to 2 percent. These map units make up about 21.7 percent of the county.

1. Tippo-Leverett-Guyton

Nearly level, somewhat poorly drained, well drained, and poorly drained, silty soils; on low stream terraces and flood plains

This map unit consists of two broad areas in the west-central part of Rankin County. These soils are on low

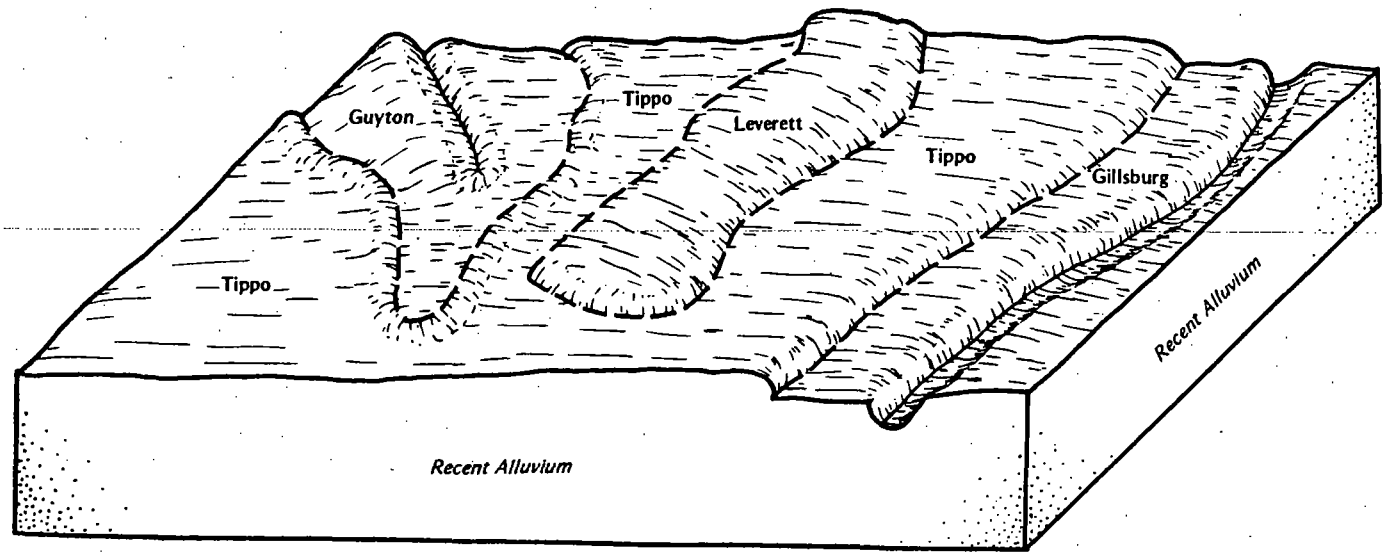


Figure 1.—The relationship of soils and landscape in the Tippo-Leverett-Guyton map unit.

stream terraces and flood plains along the Pearl River and its tributaries. The low stream terraces and flood plains have nearly linear surfaces. The topography is characterized by broad flats, low ridges, shallow swales, and winding stream channels (fig. 1). The soils in the low-lying areas are flooded after a heavy rain. Some depressions, swales, and sloughs are ponded during periods of unusual wetness. The slope ranges from 0 to 2 percent.

This map unit makes up about 3.2 percent of the county. It is about 50 percent Tippo soils, 15 percent Leverett soils, 14 percent Guyton soils, and 21 percent soils of minor extent.

Tippo soils are somewhat poorly drained and are on low stream terraces and flood plains. These soils formed in silty material. Leverett soils are well drained, are on low stream terraces, and are in slightly higher positions on the landscape than Tippo and Guyton soils. These soils formed in silty material. Guyton soils are poorly drained and are on broad, wet flats, stream terraces, and flood plains. These soils formed in silty alluvium.

The minor soils in this map unit are Gillsburg and Oaklimeter soils. These soils are silty, and they are on the flood plains. Gillsburg soils are somewhat poorly drained. Oaklimeter soils are moderately well drained.

The soils in this map unit are mostly in the urban areas of Flowood, Pearl, and Richland. In some areas, the soils are used for crops and pasture. Low, wet areas are in bottom land hardwoods.

Tippo and Leverett soils are well suited to row crops and small grains and to pasture grasses and legumes. Guyton soils are well suited to pasture grasses and legumes but are poorly suited to row crops because of wetness and flooding.

Tippo and Guyton soils are well suited to use as woodland, and Leverett soils are moderately suited to this use. Concerns in management are slight for use of Leverett soil as woodland. Wetness and flooding are severe limitations for use of equipment on Guyton soils and are moderate limitations on Tippo soils.

Guyton and Tippo soils have severe limitations for urban use because of flooding and wetness. In areas that are protected from flooding by levees, Tippo soils are moderately suited to urban use, and Guyton soils are poorly suited to this use because of wetness. Leverett soils have slight limitations for many urban uses.

Leverett and Tippo soils have good potential for the development of habitat for openland and woodland wildlife. Guyton soils have fair potential. For the development of habitat for wetland wildlife, Tippo soils have fair potential, Leverett soils have poor potential, and Guyton soils have good potential.

2. Cascilla-Arkabutla

Nearly level, well drained and somewhat poorly drained, silty soils; on flood plains

This map unit is in the western and northern parts of Rankin County. These soils mainly are on the flood plains of the Pearl River and its tributaries. The nearly linear surface of the flood plain is broken at irregular intervals by old river runs, natural levees, sloughs, chutes, and scarps (fig. 2). The slope ranges from 0 to 2 percent.

This map unit makes up about 3.7 percent of the county. It is about 40 percent Cascilla soils, 32 percent Arkabutla soils, and 28 percent soils of minor extent.

Cascilla soils are well drained. They are near the low scarps and on the slightly higher elevations on natural levees on flood plains along the Pearl River and the major tributaries. These soils formed in silty alluvium. Arkabutla soils are somewhat poorly drained. They are in broad, level areas, in slight depressions, and in the main flood basins of the flood plain. These soils formed in silty alluvium.

The minor soils in this map unit are the Gillsburg and Oaklimeter soils. These soils are silty and on the flood plains. Gillsburg soils are somewhat poorly drained. Oaklimeter soils are moderately well drained.

Most of the acreage in this map unit is in woodland.

Because of wetness and flooding, Cascilla and Arkabutla soils are poorly suited to row crops and small grains. They are moderately suited to pasture grasses and legumes.

The soils in this map unit are well suited to use as woodland. Productivity is high for bottom land hardwoods. The use of equipment is limited because of wetness and flooding. Seedling mortality and plant competition are moderate limitations on these soils.

The soils in this map unit have severe limitations for urban use because of flooding.

Cascilla and Arkabutla soils have fair potential for development of habitat for openland wildlife and good potential for development of habitat for woodland wildlife. For development of habitat for wetland wildlife, Cascilla soils have very poor potential and Arkabutla soils have fair potential.

3. Urbo-Arkabutla

Nearly level, somewhat poorly drained, silty soils; on flood plains

This map unit is in the northern and north-central parts of Rankin County. These soils are along Pelahatchie and Fannegusha Creeks and their tributaries. Areas of these soils are subject to occasional or frequent flooding generally during winter or early in the spring. The slopes range from 0 to 2 percent.

This map unit makes up about 3.5 percent of the county. It is about 48 percent Urbo soils, 28 percent Arkabutla soils, and 24 percent soils of minor extent.

Urbo soils are on broad flats and in depressions of flood plains. These soils formed in clayey alluvium.

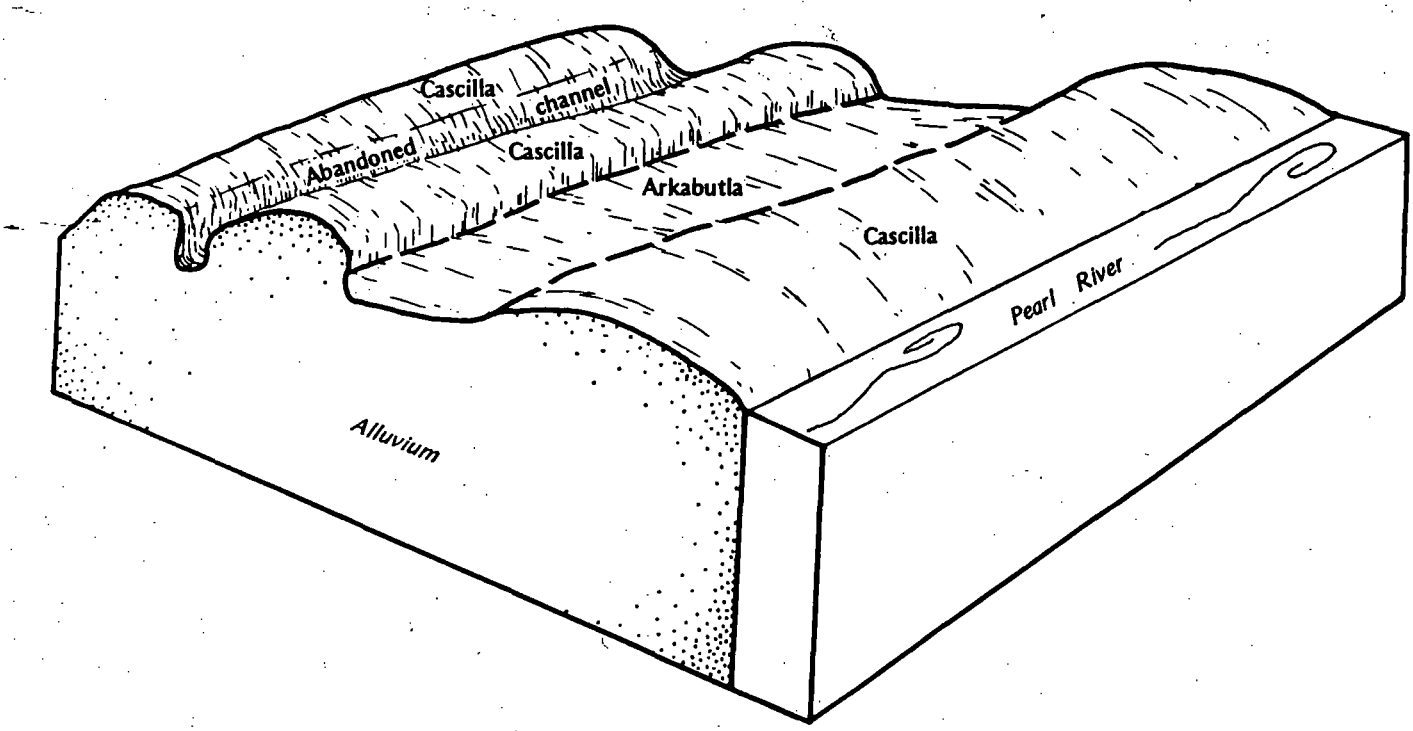


Figure 2.—The relationship of soils and landscape in the Cascilla-Arkabutla map unit.

Arkabutla soils are on broad flats of flood plains. These soils formed in silty alluvium.

The minor soils in this map unit are Gillsburg, Guyton, and Quitman soils. Gillsburg soils are somewhat poorly drained and are on the flood plains. Guyton soils are poorly drained and are on broad flats, stream terraces, and flood plains. Quitman soils are moderately well drained and are on stream terraces.

Most areas of this map unit are used as woodland.

Areas of this map unit that are frequently flooded are poorly suited to row crops and small grains and are only moderately suited to grasses and legumes. Areas that are occasionally flooded are well suited to most commonly grown crops and to grasses and legumes.

Urbo and Arkabutla soils are well suited to use as woodland. Productivity is high for bottom land hardwoods. The use of equipment is limited because of wetness and flooding. Seedling mortality and plant competition are moderate limitations on these soils.

The soils in this map unit have severe limitations for urban use because of flooding.

Urbo and Arkabutla soils have fair potential for the development of habitat for openland wildlife and wetland wildlife. For the development of habitat for woodland wildlife, Urbo soils have fair potential and Arkabutla soils have good potential.

4. Oaklimeter-Gillsburg

Nearly level, moderately well drained and somewhat poorly drained, silty soils; on flood plains

This map unit is on flood plains in the southwestern part of Rankin County. The flood plains range from 300 feet wide to about 2 miles or more wide. Flooding is occasional or frequent. The slope ranges from 0 to 2 percent.

This map unit makes up about 5.3 percent of the county. It is about 58 percent Oaklimeter soils, 24 percent Gillsburg soils, and 18 percent soils of minor extent.

Oaklimeter soils are moderately well drained. They commonly are in slightly higher positions on the flood plains than Gillsburg soils. These soils formed in silty alluvium. The Gillsburg soils are somewhat poorly drained. They are on flood plains. These soils formed in silty alluvium.

The minor soils in this map unit are Arkabutla, Kirkville, Guyton, and Tippo soils. The Arkabutla soils are somewhat poorly drained and are on the flood plains.

Kirkville soils are moderately well drained and are on flood plains. Guyton soils are poorly drained and are on broad flats, stream terraces, and flood plains. The Tippo soils are somewhat poorly drained and are on broad flats, stream terraces, and flood plains.

Most of the acres of this map unit is used as woodland. Some areas are used for pasture or crops.

Areas of this map unit that are occasionally flooded are well suited to cultivated crops and small grains and to pasture grasses and legumes. Areas that are subject to frequent flooding are poorly suited to row crops and small grains.

Oaklimeter and Gillsburg soils are well suited to use as woodland, especially bottom land hardwoods. Flooding and seasonal wetness are the main concerns in woodland management and limit the use of equipment on these soils. Plant competition and seedling mortality are moderate limitations.

The soils in this map unit have severe limitations for urban use because of flooding.

Oaklimeter and Gillsburg soils have fair potential for the development of habitat for openland wildlife and good potential for the development of habitat for woodland wildlife. For development of habitat for wetland wildlife, Oaklimeter soils have poor potential and Gillsburg soils have fair potential.

5. Quitman-Kirkville

Nearly level, moderately well drained, loamy soils; on low stream terraces and flood plains

This map unit is in the central and southeastern part of Rankin county. These soils mostly are on terraces and flood plains along the Strong River and its major tributaries (fig. 3). Kirkville soils are subject to flooding mainly during winter or early in the spring. Flooding is generally of brief duration. The slope ranges from 0 to 5 percent.

This map unit makes up about 6 percent of the county. It is about 54 percent Quitman soils, 34 percent Kirkville soils, and 12 percent soils of minor extent.

Quitman soils are on low terraces or second bottoms adjacent to the uplands. These soils formed in loamy material. Kirkville soils are on flood plains near stream channels. These soils formed in loamy alluvium.

The minor soils in this map unit are Guyton, Tippo, Oaklimeter, and Savannah soils. Guyton and Tippo soils are on broad flats, stream terraces, and flood plains. Guyton soils are poorly drained, and Tippo soils are somewhat poorly drained. Oaklimeter soils are moderately well drained and are on flood plains. Savannah soils are moderately well drained and are on stream terraces.

The soils in this map unit are used mainly for cultivated crops or as woodland. The other soils are in pasture. These soils are well suited to most commonly grown crops and small grains and to pasture grasses and legumes.

Quitman and Kirkville soils are well suited to use as woodland. Flooding and wetness are moderate limitations to use of equipment. Plant competition is a moderate limitation.

The Quitman soils in this map unit are moderately suited to urban use because of wetness. The Kirkville soils are poorly suited to urban use because of flooding.

Quitman and Kirkville soils have good potential for the development of habitat for openland and woodland wildlife and poor potential for the development of habitat for wetland wildlife.

Dominantly nearly level to steep soils that are well drained to somewhat poorly drained; on uplands and stream terraces

In this group are five general soil map units. The major soils are the somewhat poorly drained to moderately well drained, silty Falkner, Kipling, Providence, and Tippah soils; and the moderately well drained to well drained, loamy Quitman, Savannah, and Smithdale soils. The slopes range from 0 to 40 percent. These map units make up about 78.3 percent of the county.

6. Kipling-Falkner-Savannah

Nearly level to sloping soils; some are somewhat poorly drained, silty soils that are underlain by a plastic, clayey subsoil; and some are moderately well drained, loamy soils that have a fragipan; on uplands and stream terraces

This map unit is on the prairie in the northern part of Rankin County. The landscape has low relief and is mainly nearly level to gently rolling. In some places, the low hills have a cap of loamy terrace sediments (fig. 4). The slope ranges from 0 to 8 percent.

This map unit makes up about 23.6 percent of the county. It is about 40 percent Kipling soils, 18 percent Falkner soils, 16 percent Savannah soils, and 26 percent soils of minor extent.

Kipling soils are silty and are somewhat poorly drained. They are on uplands. These soils formed in clayey material. Falkner soils are silty and are somewhat poorly drained. They are on uplands and stream terraces. These soils formed in a silty mantle and the underlying acid, clayey deposits. Savannah soils are loamy and moderately well drained and have a fragipan. They are in slightly higher positions on the uplands and stream terraces than Kipling and Falkner soils. These soils formed in loamy material.

The minor soils in this map unit are Pelahatchie, Providence, Quitman, and Urbo soils. Pelahatchie soils are moderately well drained and are on uplands. Providence and Quitman soils are moderately well drained and are on uplands and stream terraces. Urbo soils are somewhat poorly drained and are on the flood plains.

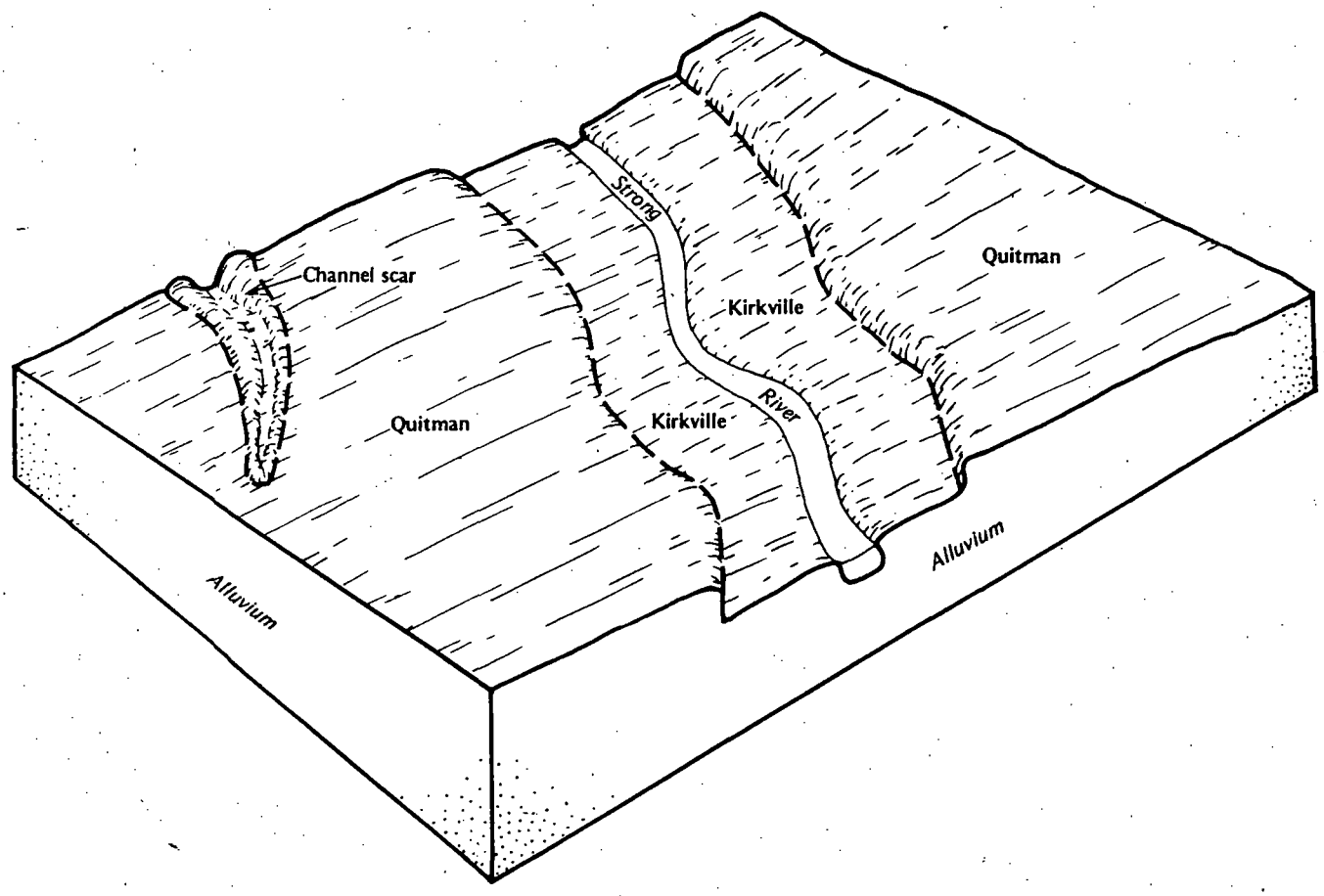


Figure 3.—The relationship of soils and landscape in the Quitman-Kirkville map unit.

Most of the acreage in this map unit is used for cultivated crops or as woodland. The other acreage is in pasture.

The nearly level or gently sloping areas of Falkner and Kipling soils are moderately suited to most commonly grown row crops and small grains and are well suited to grasses and legumes for hay and pasture. Savannah soils are well suited to row crops and small grains and to grasses and legumes for hay and pasture.

Kipling and Falkner soils are well suited to use as woodland. Seasonal wetness is a moderate limitation to use of equipment, and plant competition is a moderate limitation if pines are planted. Savannah soils are moderately suited to use as woodland, but windthrow and plant competition are moderate limitations.

Wetness and high shrink-swell potential of the subsoil severely restrict Kipling and Falkner soils for urban use. Mainly because of seasonal wetness, Savannah soils have moderate limitations for urban use.

The soils in this map unit have good potential for the development of habitat for openland and woodland wildlife. For development of habitat for wetland wildlife, Falkner and Savannah soils have very poor potential. In the nearly level areas, Kipling soils have fair potential for habitat for wetland wildlife; in the gently sloping areas, they have poor potential; and in the sloping areas, they have very poor potential.

7. Smithdale-Providence

Gently sloping to steep soils; some are well drained, loamy soils; and some are moderately well drained, silty soils that have a fragipan; on uplands and steam terraces

This map unit is in the central and southern parts of Rankin County. The landscape is hilly and is marked by narrow ridgetops that are generally less than one-eighth of a mile wide, by hillsides that are dissected by many

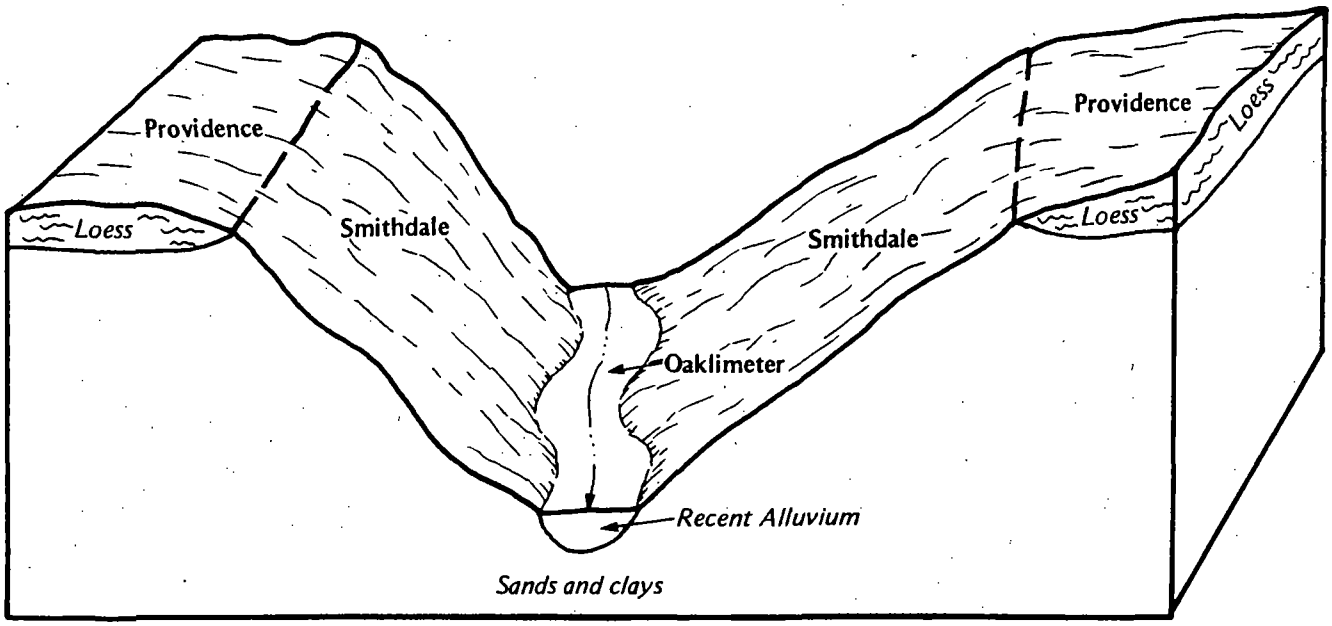


Figure 4.—The relationship of soils and landscape in the Kipling-Falkner-Savannah map unit.

short drainageways, and by narrow flood plains (fig. 5). The slope is dominantly 5 to 40 percent.

This map unit makes up about 19.3 percent of the county. It is about 43 percent Smithdale soils, 30 percent Providence soils, and 27 percent soils of minor extent.

Smithdale soils are loamy and are well drained. They are on the steeper hillsides on uplands. These soils formed in loamy material. Providence soils are silty and moderately well drained and have a fragipan. They are on uplands and stream terraces. These soils formed in a mantle of silty material and in the underlying loamy sediment.

The minor soils in this map unit are Kisatchie, Savannah, Tippah, Oaklimeter, Kirkville, and Gillsburg soils. Kisatchie soils are well drained and are on uplands. Savannah and Tippah soils are moderately well drained and are on uplands. Oaklimeter and Kirkville soils are moderately well drained and are on the flood plains. Gillsburg soils are somewhat poorly drained and are on the flood plains.

Most areas of this map unit are used as woodland. A small acreage is used for pasture and crops.

The Smithdale soils are poorly suited to row crops and small grains and to pasture grasses and legumes because of steep slopes. In the gently sloping areas, Providence soils are well suited to row crops, and in the sloping areas, they are moderately suited to this use. In the gently sloping and sloping areas, Providence soils are well suited to grasses and legumes for hay and pasture, and in the sloping areas, they are moderately suited to this use.

Providence soils are moderately suited to use as woodland. Concerns in woodland management are few. Smithdale soils are moderately suited to woodland use. Steepness of slope is a moderate limitation to use of equipment on Smithdale soils if slopes are more than 15 percent.

Smithdale soils have severe limitations for urban use because of steepness of slopes. Providence soils have moderate limitations for urban use mainly because of seasonal wetness and steepness of slopes.

Smithdale and Providence soils have good potential for the development of habitat for openland and woodland wildlife, but on Smithdale soils if slopes are more than 15 percent, potential is fair. For the development of habitat for wetland wildlife, the potential of the soils in this map unit is very poor.

8. Providence-Tippah

Gently sloping to moderately steep, moderately well drained, silty soils; some have a fragipan; and some are underlain by plastic, clayey material; on uplands and stream terraces

This map unit is in the west-central and southwestern part of Rankin County. The landscape has moderate relief and is generally rolling but is moderately steep along the major drainageways. It is marked by broad ridgetops, by hillsides that are dissected by short

drainageways, and by narrow flood plains along the streams. The slope ranges from 0 to 15 percent.

This map unit makes up about 17.9 percent of the county. It is about 54 percent Providence soils, 31 percent Tippah soils, and 15 percent soils of minor extent.

Providence soils have a fragipan. They are on uplands and stream terraces. These soils formed in a mantle of silty material and the underlying loamy material. Tippah soils are on uplands. These soils formed in a mantle of silty material and the underlying clayey material.

The minor soils in this map unit are Kirkville, Oaklimeter, and Savannah soils. Kirkville and Oaklimeter soils are moderately well drained and are on the flood plains. Savannah soils are moderately well drained and are on uplands and stream terraces.

Most of the acreage in this map unit is used as woodland or pasture. Some areas are used for row crops.

In the gently sloping areas, Providence and Tippah soils are well suited to most commonly grown crops and small grains and to grasses and legumes for hay and pasture. In the sloping areas, these soils are moderately suited to most commonly grown crops and small grains and are well suited to grasses and legumes for hay and pasture.

The soils in this map unit are moderately suited to use as woodland. Plant competition is the main limitation on Tippah soils, and windthrow is a limitation on Providence soils.

Wetness and steepness of slopes are moderate limitations to use of Providence soils for urban use. On Tippah soils, wetness and shrink-swell potential of the subsoil are severe limitations for urban use.

The soils in this map unit have good potential for the development of habitat for openland and woodland wildlife and poor or very poor potential for development of habitat for wetland wildlife.

9. Smithdale-Savannah

Gently sloping to steep, loamy soils; some are well drained; and some are moderately well drained and have a fragipan; on uplands and stream terraces

This unit is in the eastern and southeastern parts of Rankin County. The landscape is hilly and is marked by narrow ridgetops that are generally less than one-eighth of a mile wide, by steep hillsides that are dissected by many short drainageways, and by narrow flood plains along the streams. The slope ranges from 2 to 40 percent.

This map unit makes up about 11.4 percent of the county. It is about 44 percent Smithdale soils, 38 percent Savannah soils, and 18 percent soils of minor extent.

Smithdale soils are well drained. They are on the steeper upland hillsides than Savannah soils. These soils

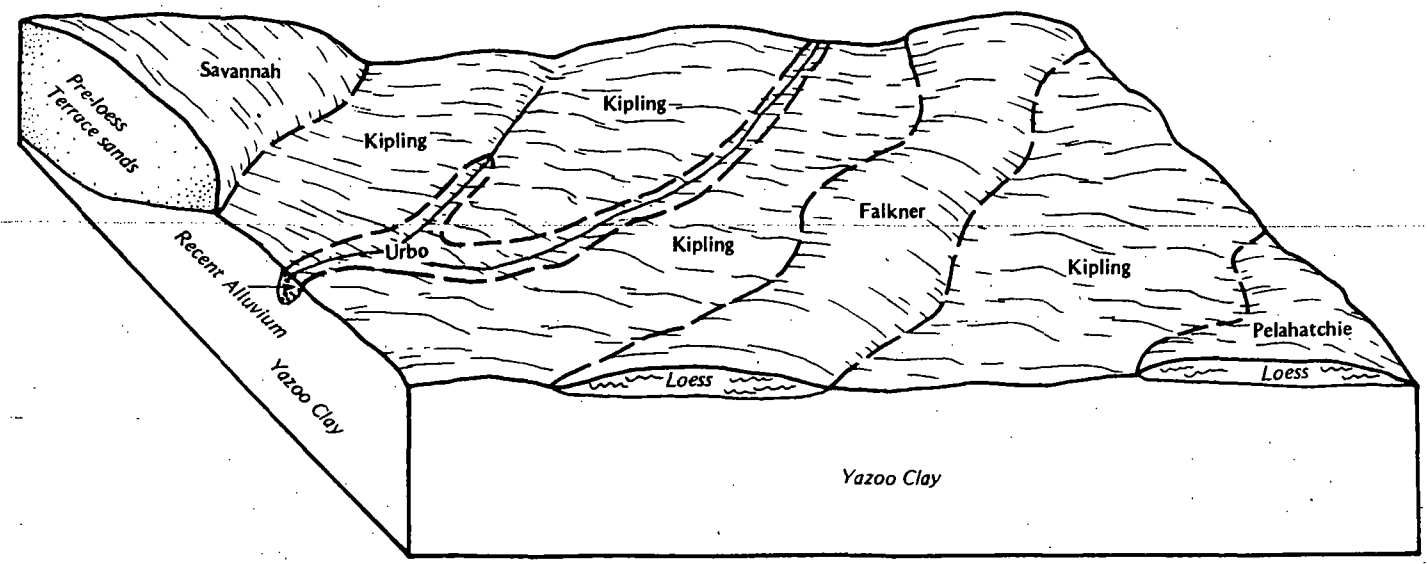


Figure 5.—The relationship of soils and landscape in the Smithdale-Providence map unit.

formed in loamy marine sediment. Savannah soils are moderately well drained and have a fragipan. They mainly are on ridgetops on uplands and stream terraces. These soils formed in loamy material.

The minor soils in this map unit are Kirkville, Maben, Ora, and Tippah soils. Kirkville soils are moderately well drained and are on the flood plains. Maben soils are well drained and are on uplands. Ora and Tippah soils are moderately well drained and are on uplands.

Most of the acreage in this map unit is used as woodland or pasture. A small acreage is in row crops.

Smithdale soils are poorly suited to row crops and small grains but are moderately suited to grasses and legumes. The main limitation to use of these soils for row crops and small grains is the steep slopes. Erosion is a hazard. In the gently sloping areas, Savannah soils are well suited to row crops and small grains; in the sloping areas, they are moderately suited to this use. Savannah soils are well suited to grasses and legumes for hay and pasture.

The soils in this map unit are moderately suited to use as woodland. Smithdale soils have no significant limitations to woodland use and management. Plant competition and windthrow are moderate limitations to use of Savannah soils as woodland if pine trees are planted.

Smithdale soils have severe limitations for urban and recreational uses because of steepness of slope. Savannah soils are moderately limited for these uses because of wetness.

Smithdale and Savannah soils have good potential for the development of habitat for openland wildlife, but if slopes are more than 15 percent, potential is poor. For development of habitat for woodland wildlife, these soils have good potential; for habitat for wetland wildlife, potential is very poor.

10. Savannah-Quitman

Nearly level to sloping, moderately well drained, loamy soils; some have a fragipan; on uplands and stream terraces

This map unit is in the eastern and southeastern parts of Rankin County. The landscape generally is nearly level to gently rolling but can include a few areas that are moderately steep. It is marked by broad ridges and nearly level, low terraces. The slope ranges from 0 to 8 percent.

This map unit makes up about 6.1 percent of the county. It is about 43 percent Savannah soils, 30 percent Quitman soils, and 27 percent soils of minor extent.

Savannah soils have a fragipan. They generally are in the raised, more sloping areas on uplands and stream terraces. These soils formed in loamy material. Quitman soils are in the low, smooth areas near drainageways, on uplands, and on stream terraces. These soils formed in loamy material.

The minor soils in this map unit are Kirkville, Ora, and Tippah soils. Kirkville soils are moderately well drained and are on the flood plains. Ora and Tippah soils are moderately well drained and are on uplands.

Most of the acreage in this map unit is used as woodland or pasture. A small acreage is in crops.

In the gently sloping areas, Savannah and Quitman soils are well suited to row crops and small grains, and in the sloping areas, these soils are moderately suited tc this use. The soils in this map unit are well suited to most grasses and legumes for hay and pasture.

Savannah soils are moderately suited to woodland. Windthrow and plant competition are moderate. Quitman soils are well suited to use as woodland. Wetness is a moderate limitation for equipment use.

Wetness is a moderate limitation to use of Savannah soils for most urban uses. Wetness and low strength as it affects local roads and streets are moderate limitation to use of Quitman soils for urban use.

Savannah and Quitman soils have good potential for the development of habitat for openland and woodland wildlife. In the nearly level areas, Quitman soils have a poor potential for development of habitat for wetland wildlife, and Savannah soils have a very poor potential.

Broad Land Use Consideration

The soils in Rankin County vary widely in their suitabilities and limitations for major land uses. Kinds of soil limitations are indicated in general terms. The ratings of soil reflect the relative cost of practices to overcome the limitations and the hazard of continuing soil-related problems after practices are installed.

Kinds of land uses considered include cropland, pasture, woodland, urban development, and the development of habitat for wildlife. Cultivated farm crops grown extensively include cotton, soybeans, corn, and wheat. Woodland refers to land in trees. Urban areas include those used as residential, commercial, and industrial sites. Habitat for wildlife uses include habitat for openland wildlife, woodland wildlife, and wetland wildlife.

About 10 percent, or 49,853 acres, of Rankin County is used for cultivated crops, mostly soybeans, cotton, and wheat. Cropland is scattered throughout the county in areas of soils that are well suited to or moderately suited to row crops. These soils are mainly in map units 1, 3, 4, 5, 6, 8, and 10.

The soils in map units 3, 4, and 5 are occasionally flooded, mainly in winter and early in the spring. This flooding causes slight to moderate crop damage. The major soils in these map units are Urbo, Arkabutla, Oaklimeter, Gillsburg, Quitman, and Kirkville soils. Tippo and Guyton soils in map unit 1 are seasonally wet.

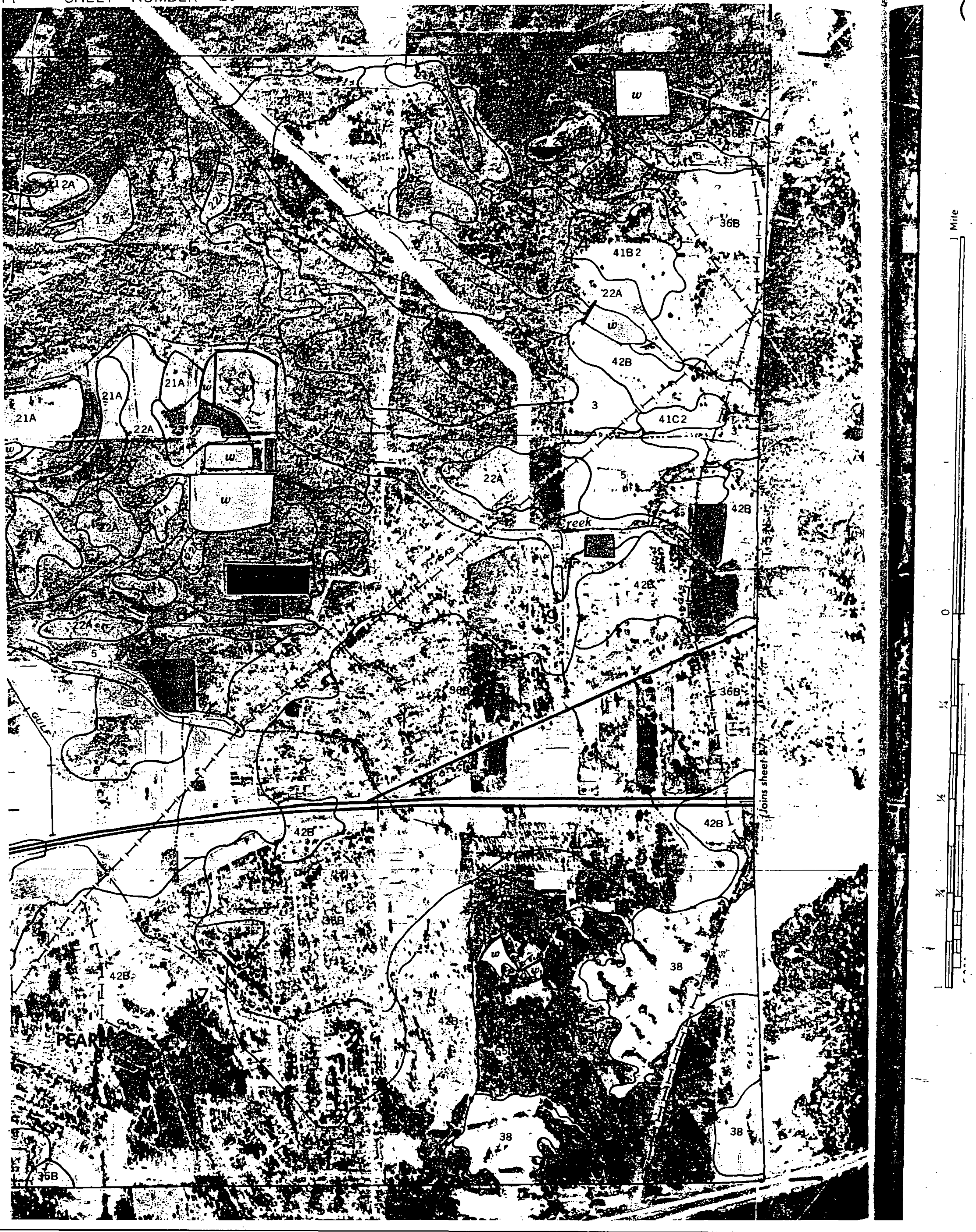
Erosion is a major hazard in growing crops on soils in map units 6, 8, and 10. Kipling, Falkner, Savannah, Providence, Tippah, and Quitman soils make up these map units.

About 61 percent, or 310,000 acres, of the county is used as woodland. Soils in all map units are well suited to or moderately suited to trees. Some soils have a moderate to severe limitation for equipment use, but this limitation can be overcome by harvesting during the drier periods.

About 6 percent, or 33,176 acres, of the county is classified as urban or built-up land. Soils in map units 2, 3, 4, and 5 that are on flood plains have severe limitations for urban use because of flooding. Quitman soils in map unit 5 are on higher elevations and are not subject to flooding. Soils in map unit 1 that are in protected areas have moderate limitations for urban use. Soils in map units 7 and 9 that are in hilly areas have severe limitations for urban use, mainly, because of the steepness of slope.

Soils in map units 8 and 10 have moderate limitations for urban use. High shrink-swell potential, low strength as it affects local roads and streets, and wetness are the main limitations of these soils for urban use. Most of the limitations can be overcome by special design and proper installation. The restricted permeability of Providence, Tippah, and Savannah soils is a limitation to use as septic tank absorption fields. This limitation can be partly overcome by enlarging septic tank absorption fields.

Kipling and Falkner soils in map unit 6 have severe limitations for urban use because of wetness and the high shrink-swell potential of the subsoil. Savannah soils have moderate limitations for urban use, mainly, because of wetness.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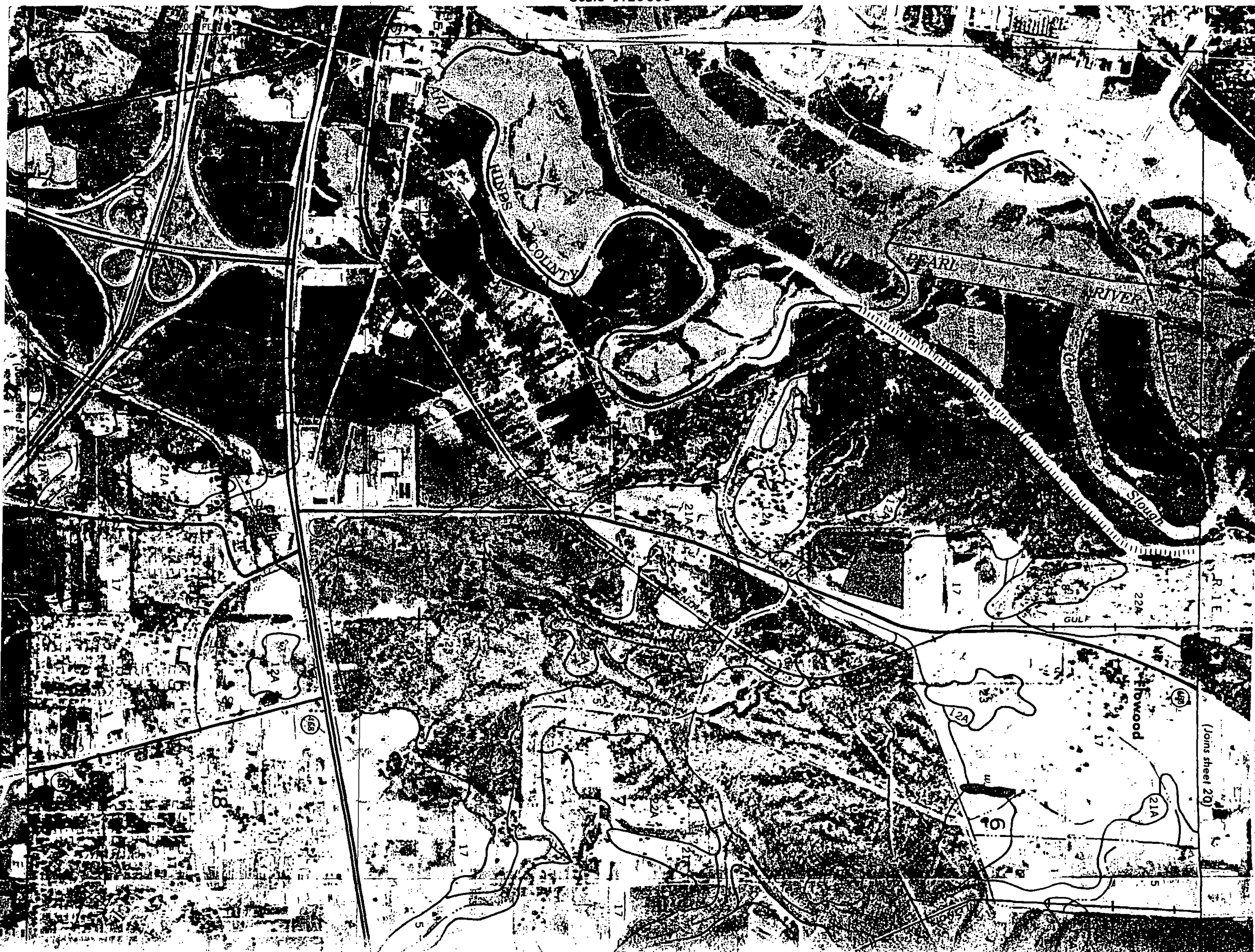

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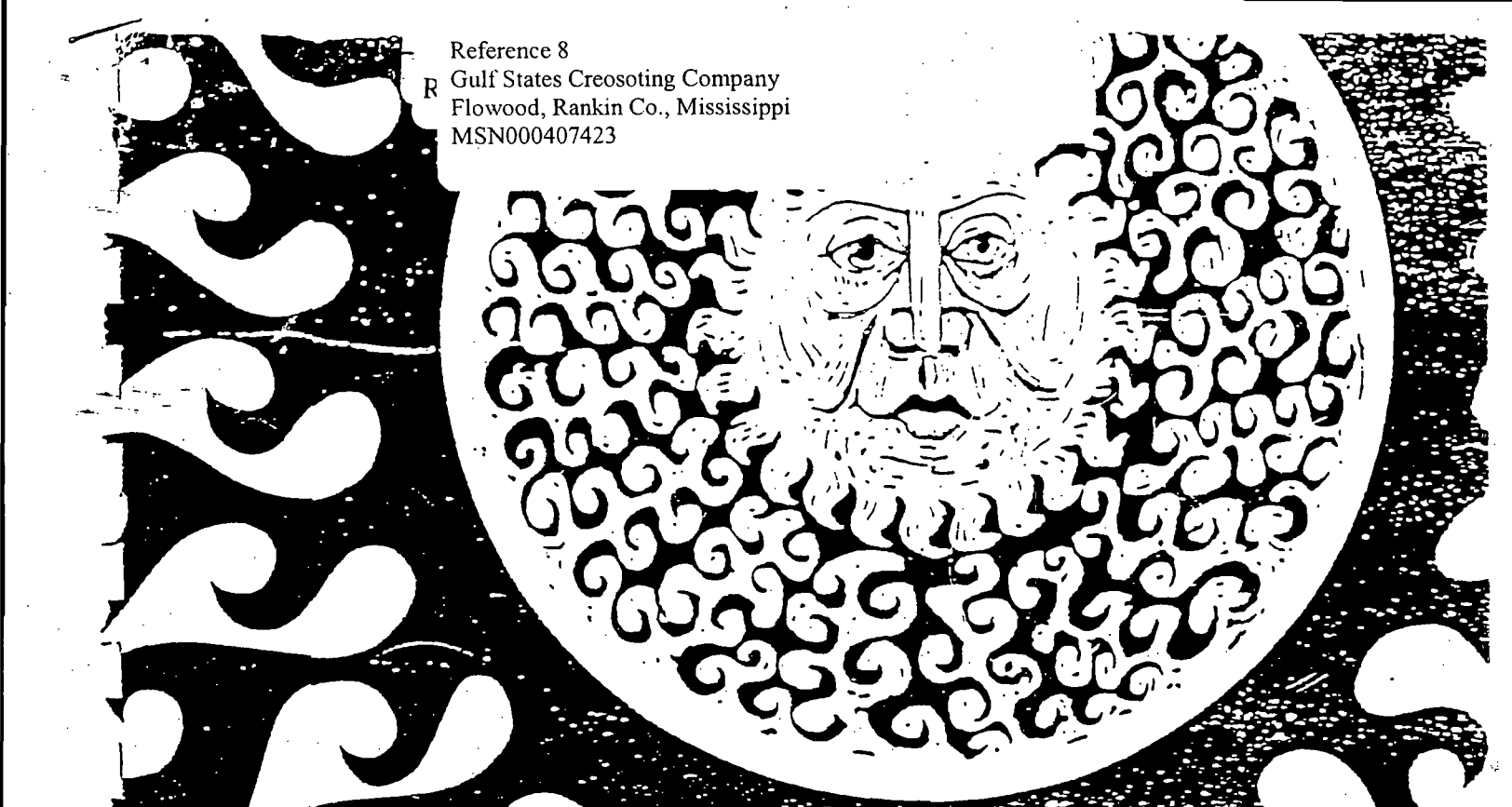
Flowood, Rankin Co., Mississippi
MSN000407423



CLIMATIC ATLAS OF THE UNITED STATES

onmental Science Services Administration . Environment

U.S. DEPARTMENT OF COMMERCE

C. R. Smith, Secretary

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION

Robert M. White, Administrator

ENVIRONMENTAL DATA SERVICE

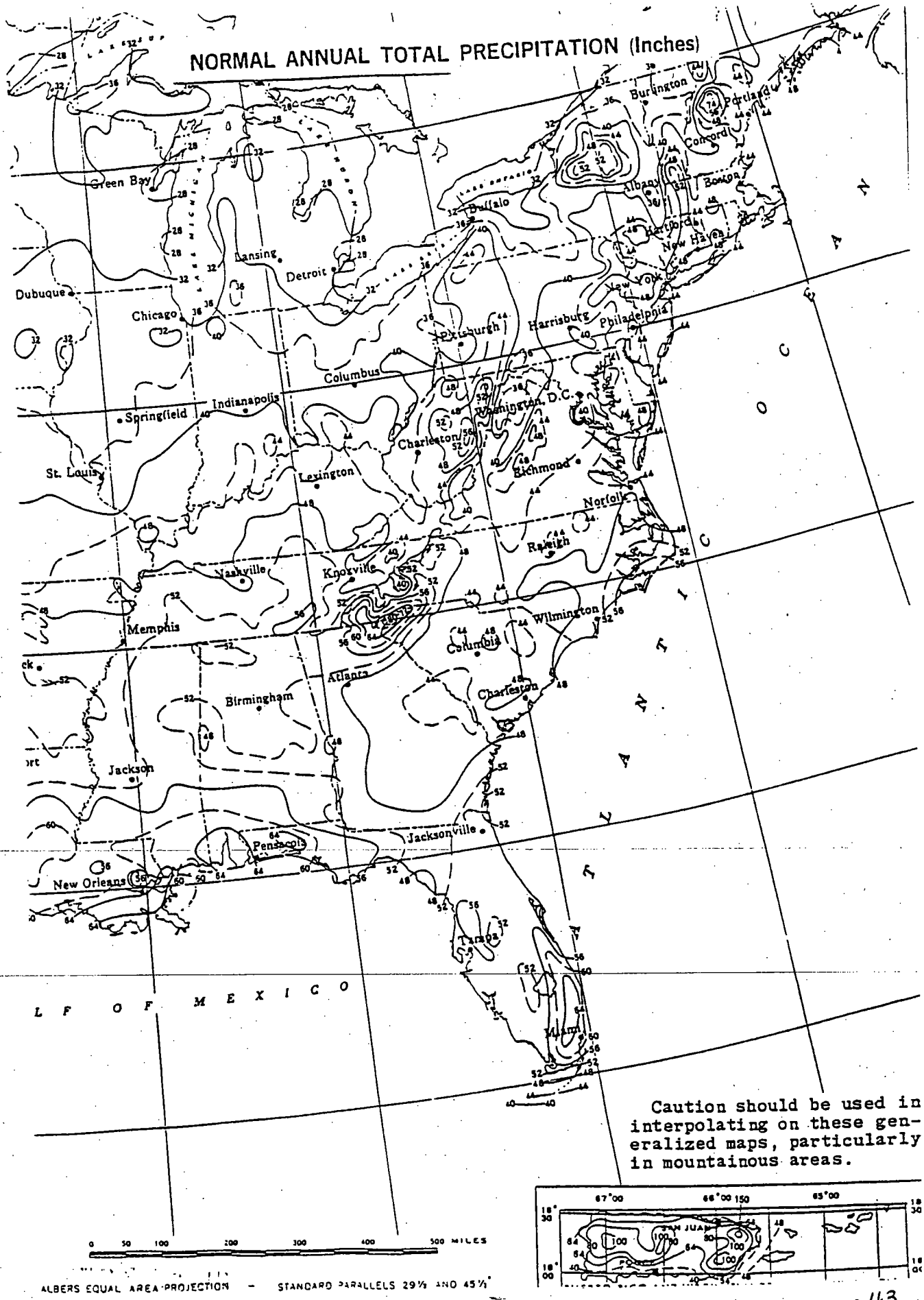
Woodrow C. Jacobs, Director

JUNE 1968

REPRINTED BY THE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

1983



Caution should be used in interpolating on these generalized maps, particularly in mountainous areas.

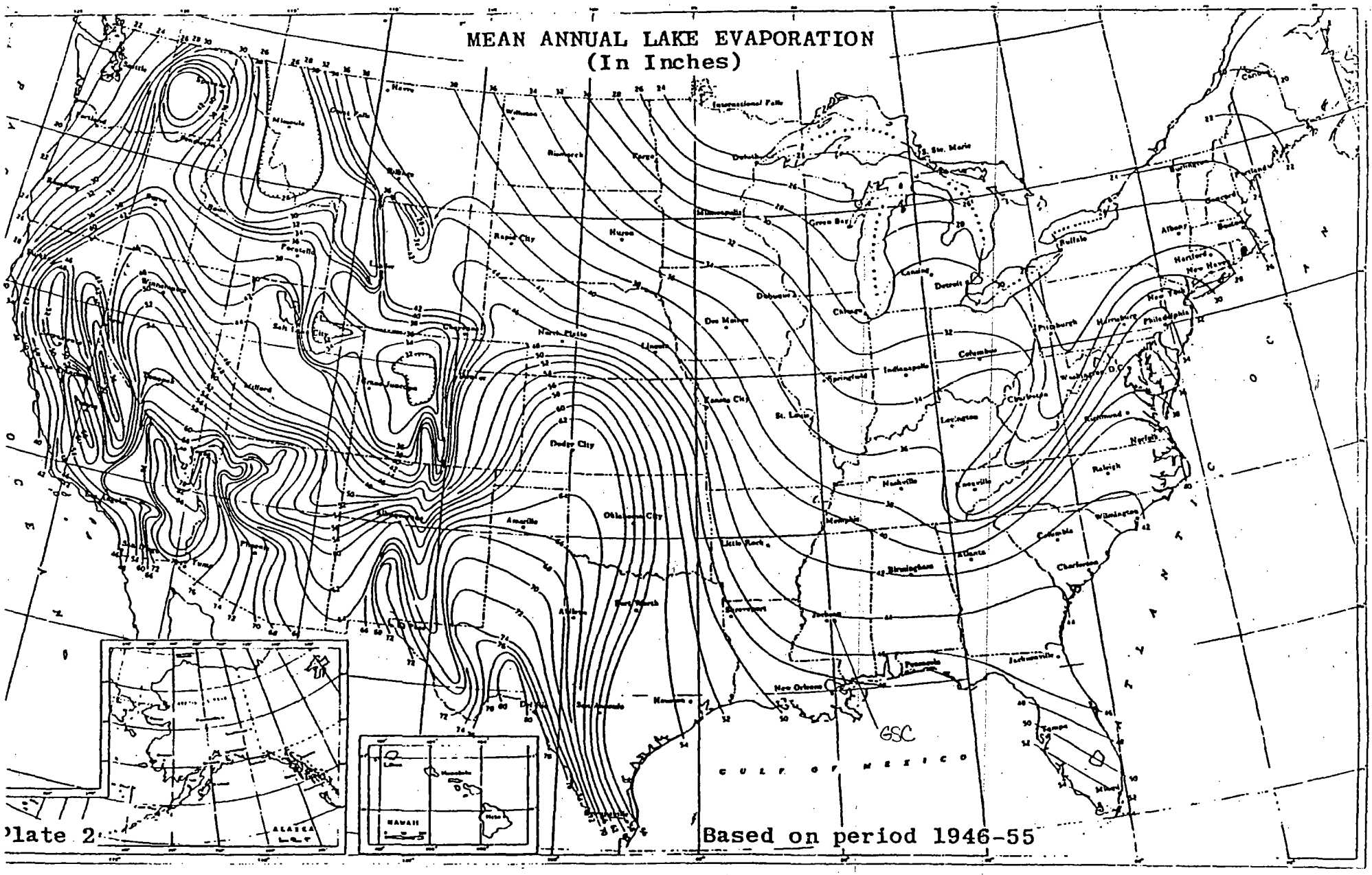

MEAN ANNUAL LAKE EVAPORATION
(In Inches)
GSC
GULF OF MEXICO
ALASKA
HAWAII
Based on period 1946-55

Plate 2

Reference 9
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

U.S. DEPARTMENT OF COMMERCE
LUTHER H. HODGES, Secretary

WEATHER BUREAU
F. W. REICHELDERFER, Chief

TECHNICAL PAPER NO. 40

RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years

Prepared by
DAVID M. HERSHFIELD
Cooperative Studies Section, Hydrologic Services Division
for
Engineering Division, Soil Conservation Service
U.S. Department of Agriculture

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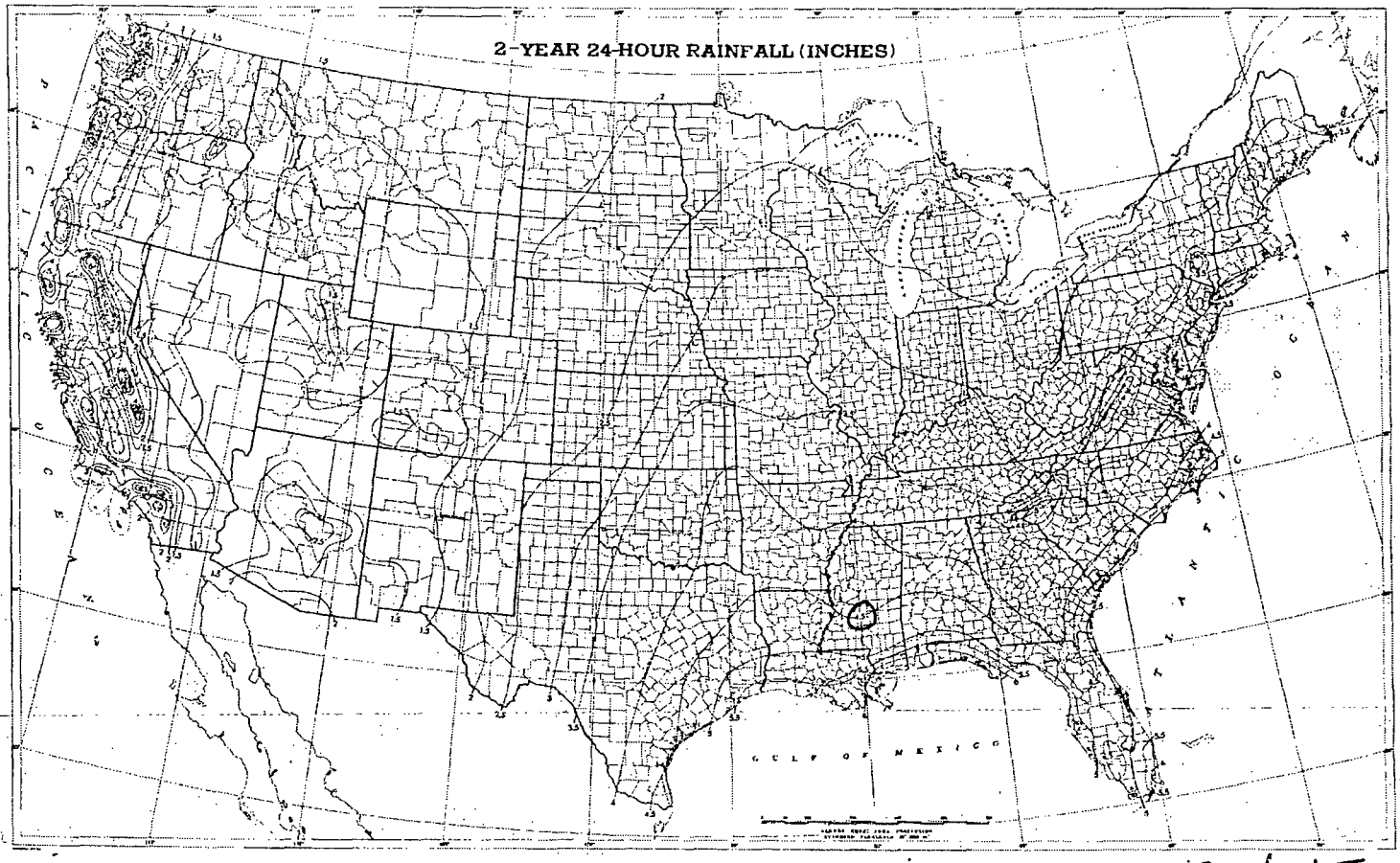

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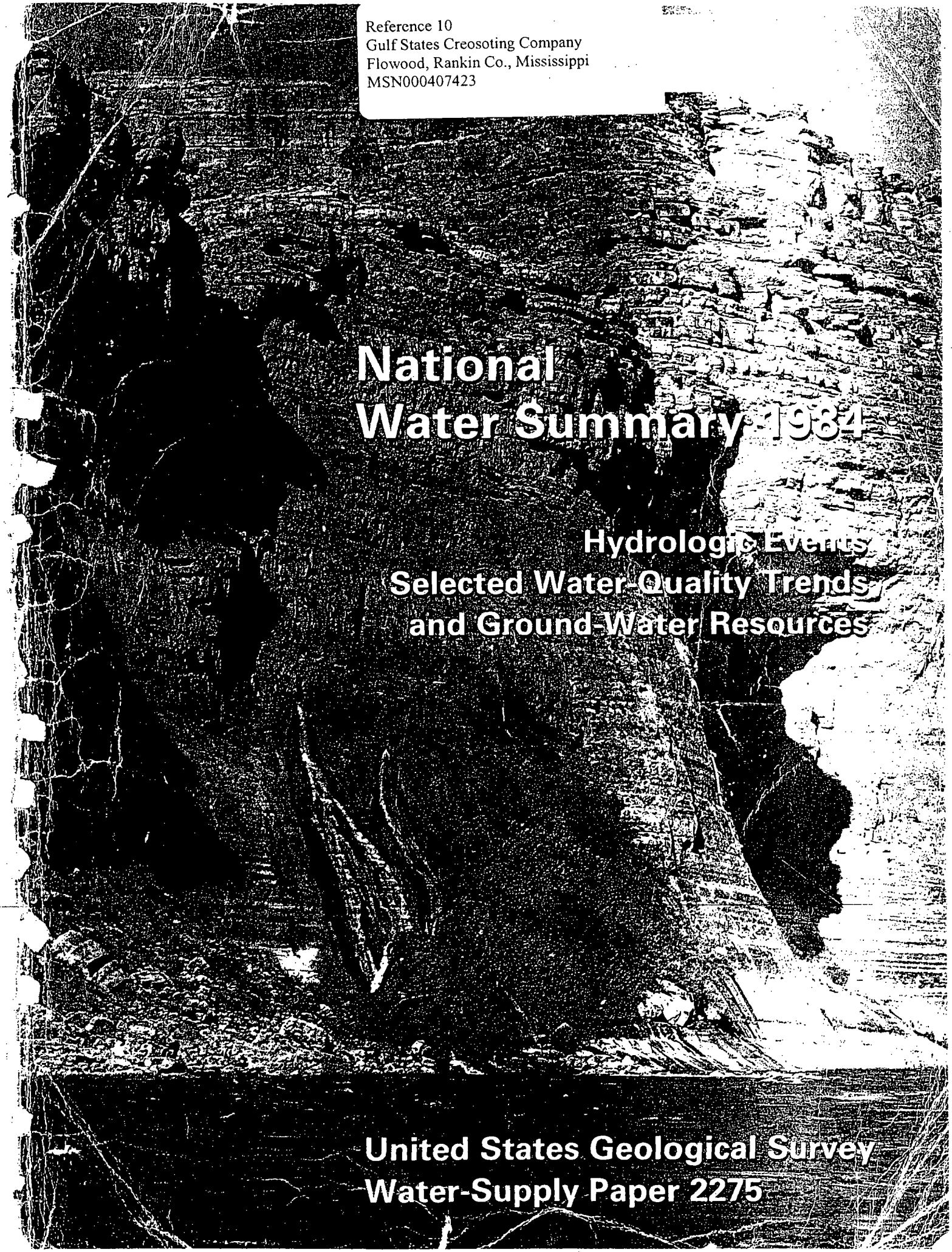


National Water Summary 1984

Hydrologic Events, Selected Water-Quality Trends, and Ground-Water Resources

United States Geological Survey
Water-Supply Paper 2275

MISSISSIPPI
Ground-Water Resources

Ground water constitutes 54 percent of all freshwater used in Mississippi, serving the water supply needs of 93 percent of the population. The largest use of fresh ground water—54 percent of the total withdrawal—is for irrigation and aquaculture. Most of Jackson's public-water supply is withdrawn from the Pearl River but about 50 percent of the water used in the surrounding metropolitan area is from ground-water sources. Columbus and Meridian are converting from surface-water sources to wells. The nearly exclusive dependence on ground water for public-water supply is the result of statewide availability of aquifers that contain water of quality suitable for most uses and that are capable of supplying large yields [more than 300 gallons per minute (gal/min)] to wells. Ground-water withdrawals for various uses in 1980 and other related statistics are given in table 1.

Table 1. Ground-water facts for Mississippi

[Withdrawal data rounded to two significant figures and may not add to totals because of independent rounding. Mgal/d = million gallons per day; gal/d = gallons per day. Source: Callahan, 1983]

Population served by ground water, 1980	
Number (thousands)	2,339
Percentage of total population	93
From public water-supply systems:	
Number (thousands)	1,861
Percentage of total population	74
From rural self-supplied systems:	
Number (thousands)	478
Percentage of total population	19
Freshwater withdrawals, 1980	
Surface water and ground water, total (Mgal/d)	2,900
Ground water only (Mgal/d)	1,500
Percentage of total	54
Percentage of total excluding withdrawals for thermoelectric power	82
Category of use	
Public-supply withdrawals:	
Ground water (Mgal/d)	230
Percentage of total ground water	15
Percentage of total public supply	18
Per capita (gal/d)	124
Rural-supply withdrawals:	
Domestic:	
Ground water (Mgal/d)	20
Percentage of total ground water	1
Percentage of total rural domestic	100
Per capita (gal/d)	42
Livestock:	
Ground water (Mgal/d)	8.0
Percentage of total ground water	0.5
Percentage of total livestock	77
Industrial self-supplied withdrawals:	
Ground water (Mgal/d)	[1]430
Percentage of total ground water	29
Percentage of total industrial self-supplied:	
Including withdrawals for thermoelectric power	21
Excluding withdrawals for thermoelectric power	61
Irrigation withdrawals:	
Ground water (Mgal/d)	812
Percentage of total ground water	54
Percentage of total irrigation	35

[1] Includes 264 Mgal/d for aquaculture use and 2.3 Mgal/d for waterfowl.

GENERAL SETTING

With the exception of an area of a few square miles in Tishomingo County, Mississippi lies entirely in the East Gulf Coastal Plain and is underlain by deposits of clay, sand, gravel, chalk, marl, and limestone. The oldest exposed strata are consolidated Paleozoic rocks that crop out only in a few valleys in Tishomingo County (fig. 1). Cretaceous strata in northern Mississippi dip and thicken southwestward. In central and southern Mississippi, the dip of the younger Eocene strata gradually becomes southward.

Much of the water that reaches the water table moves downdip westward to southwestward into the confined aquifers (fig. 1). Ground water moves westward into the northeastern Mississippi subsurface from Alabama. In southern Mississippi, some ground water flows into the subsurface of Louisiana or discharges into the Gulf of Mexico.

Precipitation in Mississippi is about 54 inches (in.) annually. Average monthly precipitation ranges from about 2.4 in. in October to about 6.2 in. in March. The late winter and spring rains provide an excess of water that results in high streamflow and periodic flooding. Infiltration from the Mississippi River and other streams reaches a maximum in the late spring.

About 50 percent of Mississippi's precipitation evaporates or is consumed by vegetation, about 40 percent runs off as streamflow, and about 10 percent infiltrates to the water table. Additional recharge of the ground-water reservoir is derived from infiltration of surface waters.

Several hundred gallons per minute can be obtained from wells completed in at least one aquifer nearly anywhere in the State. Throughout northwestern Mississippi and at places in the southern part of the State, well yields of several thousand gallons per minute are not unusual. Water-quality problems commonly are related to iron in solution and to acidic water. More troublesome in some areas, however, is the prevalence of color in ground water caused by the presence of organic matter. Saltwater normally is present in the downdip parts of all aquifers; however, the base of freshwater extends to depths of more than 3,000 feet (ft) in some parts of the State (fig. 1). Saltwater intrusion has not been identified conclusively in coastal areas except locally where estuaries are connected hydraulically to shallow aquifers. Ground-water contamination from human activities is mostly restricted to oil-producing areas.

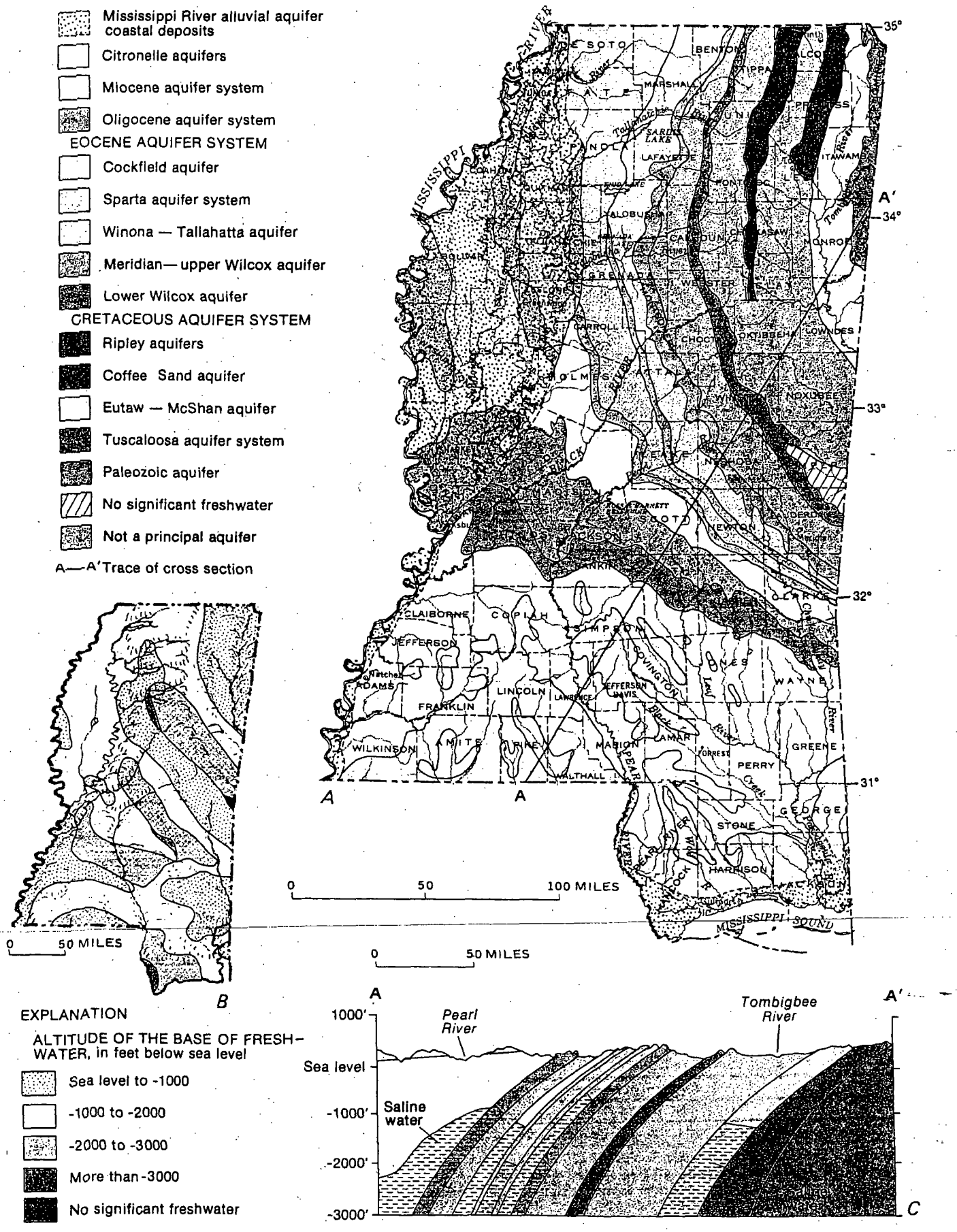


Figure 1. Principal aquifers of Mississippi. *A*, Geographic distribution. *B*, Altitude of the base of freshwater and physiographic diagram. *C*, Generalized cross section (A-A'). (See table 2 for a more detailed description of the aquifers. Sources: *A*, Modified from Bicker, 1969. *B*, Gandl, 1982; Raisz, 1954. *C*, Compiled by E. H. Boswell from U.S. Geological Survey files.)

Table 2. Aquifer and well characteristics in Mississippi

[Gal/min = gallons per minute; mg/L = milligram per liter; ft = feet. Sources: Reports of the U.S. Geological Survey, Mississippi Bureau of Land and Water Resources, and Mississippi Research and Development Center]

Aquifer name and description	Well characteristics				Remarks
	Depth (ft)		Yield (gal/min)		
	Common range	May exceed	Common range	May exceed	
Mississippi River alluvial aquifer: Sand, gravel, silt, and clay. Semiconfined.	50 - 140	200	500 - 3,000	5,000	Water hard, iron in solution generally exceeds 1.0 mg/L. Susceptible to pollution. Source of public water supply at Vicksburg (location 15, fig. 2).
Citronelle aquifers: Sand, gravel, silt, and clay. Generally unconfined.	50 - 200	250	50 - 300	500	Water soft, acidic, iron in solution generally exceeds 0.3 mg/L. Dissolved solids concentrations generally lower than 100 mg/L. Source for several public water supplies in southern part of State. Susceptible to pollution. Equivalent to Pliocene-Miocene aquifer in Alabama, Pleistocene aquifer in Louisiana.
Miocene aquifer system: Sand, clay, gravel, and silt. Generally confined.	50 - 1,500	2,400	50 - 1,500	5,000	Includes Graham Ferry, Pascagoula, and Hattiesburg Formations and Catahoula Sandstone. Water soft, sodium bicarbonate type; locally, iron exceeds 0.3 mg/L. Contaminated by oilfield brine locally. Principal source for public water supplies in southern one-third of State. Equivalent to Pliocene-Miocene aquifer in Alabama and Louisiana.
Oligocene aquifer system: Limestone, sand, silt, and clay. Generally confined.	150 - 1,000	1,200	10 - 150	400	Includes Vicksburg Group and Forest Hill Sand. Water soft, slightly alkaline. Source for a few public water supplies in south-central part of State. Part of Oligocene-Eocene aquifer in Alabama. Confining unit in Louisiana.
Eocene aquifer system:					
Cockfield aquifer: Sand, silt, clay, and lignite. Generally confined.	100 - 1,000	1,200	10 - 1,000	1,500	Water hard near outcrop, sodium bicarbonate type elsewhere. Locally, iron concentration exceeds 0.3 mg/L and color is more than 20 units. Largest withdrawal is for public water supply at Greenville (location 16, fig. 2). Part of Tertiary sand aquifer in Tennessee, Oligocene-Eocene aquifer in Alabama.
Sparta aquifer system: Sand, silt, clay, and lignite. Generally confined.	100 - 1,500	2,000	10 - 1,000	3,000	Water soft, sodium bicarbonate type. Locally iron concentration exceeds 0.3 mg/L and color is more than 20 units. Contaminated by oil-field brine locally. Source for many public water supplies in central and northwestern Mississippi. Part of Tertiary sand aquifer in Tennessee, Oligocene-Eocene aquifer in Alabama.
Winona-Tallahatta aquifer: Glauconitic sand and clay. Generally confined.	100 - 1,000	1,200	10 - 400	500	Water soft. Locally, iron concentration exceeds 3.0 mg/L, and color is more than 20 units. Source for public water supply for several small municipalities. Part of Tertiary aquifer in Tennessee. Oligocene-Eocene aquifer in Alabama. Confining unit in Louisiana.
Meridian-upper Wilcox aquifer: Sand, silt, clay, and lignite. Generally confined.	100 - 1,800	2,000	100 - 2,000	2,500	Water soft, acidic in the north. Locally iron concentration exceeds 0.3 mg/L, and color is more than 20 units. Source for many public water supplies in central and northwestern Mississippi. Largest withdrawal is at Greenwood (location 10, fig. 2). Part of Tertiary sand aquifer in Tennessee, Oligocene-Eocene aquifer in Alabama, and Wilcox-Carrizo aquifer in Louisiana.

Table 2. Aquifer and well characteristics in Mississippi—Continued

Aquifer name and description	Well characteristics				Remarks
	Depth (ft)		Yield (gal/min)		
	Common range	May exceed	Common range	May exceed	
Lower Wilcox aquifer: Sand, silt, clay, and lignite. Generally confined.	100 - 2,100	3,000	100 - 1,500	2,000	Water soft. Locally, iron concentration exceeds 0.3 mg/L. Contaminated by oil-field brine locally. Source for public water supplies throughout central and northwestern Mississippi. Largest withdrawal is at Meridian (location 22, fig. 2). Equivalent to Nanafalia-Clayton aquifer in Alabama and part of Tertiary sand in Tennessee.
Cretaceous aquifer system:					
Ripley aquifers: Sand, clay, sandstone, and limestone. Generally confined.	50 - 1,100	1,800	10 - 300	400	Water hard near outcrop, soft at depth. Source for several small public water supplies in extreme northern part of State. Part of Cretaceous aquifer in Tennessee.
Coffee Sand aquifer: Sand, clay and sandstone. Generally confined.	50 - 1,000	2,000	10 - 400	500	Water hard near outcrop, soft at depth. Source for several small public water supplies in extreme northern part of State. Part of Cretaceous aquifer in Tennessee.
Eutaw-McShan aquifer: Sand and clay. Generally confined.	100 - 1,500	1,800	10 - 500	600	Water hard near outcrop, soft at depth. Locally fluoride exceeds 1.0 mg/L. Source for numerous public water supplies in northern part of State. Largest withdrawals are at Tupelo and in Monroe County (locations 9 and 23, fig. 2). Equivalent to Eutaw aquifer in Alabama and part of Cretaceous aquifer in Tennessee.
Tuscaloosa aquifer system: Sand, gravel, silt, and clay. Generally confined.	100 - 2,000	2,400	50 - 1,500	2,000	Includes Gordo and Coker Formations, and locally, beds of Early Cretaceous age. Water soft to slightly hard, small dissolved-solids concentrations. Locally iron exceeds 0.3 mg/L. Source for numerous public water supplies in northwestern Mississippi. Largest withdrawals are in Columbus area and Monroe County (location 23, fig. 2). Equivalent to Tuscaloosa aquifer in Alabama.
Paleozoic aquifer: Limestone, chert, and clay. Generally confined.	100 - 600	1,000	100 - 900	1,000	In rocks of Mississippian age. Water generally hard. Locally, iron exceeds 0.3 mg/L. Used only in Alcorn and Tishomingo Counties (location 21, fig. 2). Part of Highland Rim carbonates in Tennessee and Paleozoic carbonates in Alabama.

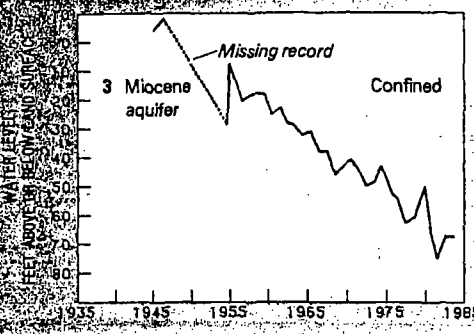
The southwestward dip of the strata and the overlap of freshwater in successively younger aquifers southward result in the availability of two or more separate aquifers for development in most places (fig. 1). Examples are use of both the Tuscaloosa aquifer system and the Eutaw-McShan aquifer at localities in the northeast; the Cockfield, Sparta, and Meridian-upper Wilcox aquifers in some mid-State localities; and the Meridian-upper Wilcox and lower Wilcox aquifers in many areas. Some geologic formations include two or more extensive water-bearing zones that function as a single system when considered on a regional basis (Sparta aquifer system). Other water-bearing formations are directly connected hydraulically and function as a single aquifer (Eutaw-McShan aquifer).

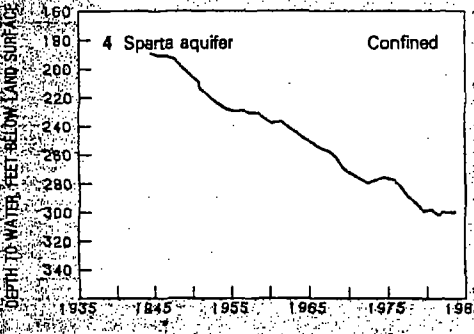
PRINCIPAL AQUIFERS

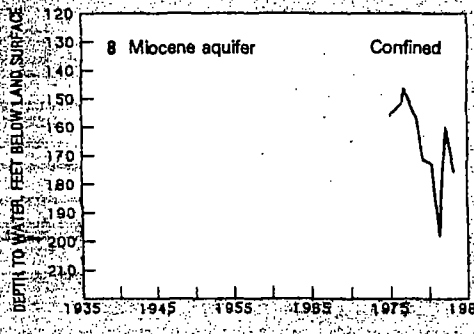
Except for the chert aquifer of Paleozoic age, which is the source of water for several public-water supplies in Alcorn and Tishomingo Counties, all principal aquifers in Mississippi consist of unconsolidated sand or sand and gravel strata that are irregular in thickness and physical character and exhibit extreme variation in their capability to store and transmit water (Wasson, 1980). The principal aquifers are discussed below and in table 2; their areal distribution is shown in figure 1.

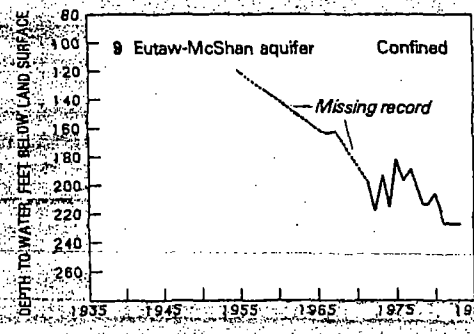
MISSISSIPPI RIVER ALLUVIAL AQUIFER

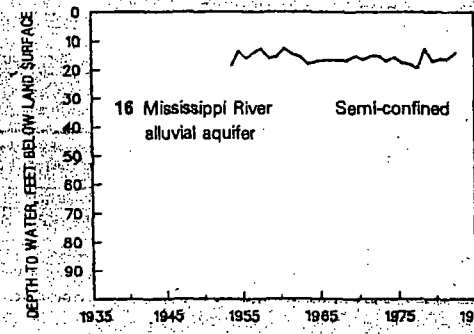
The extensive Mississippi River alluvial aquifer in the Delta area of northwestern Mississippi is an extremely prolific

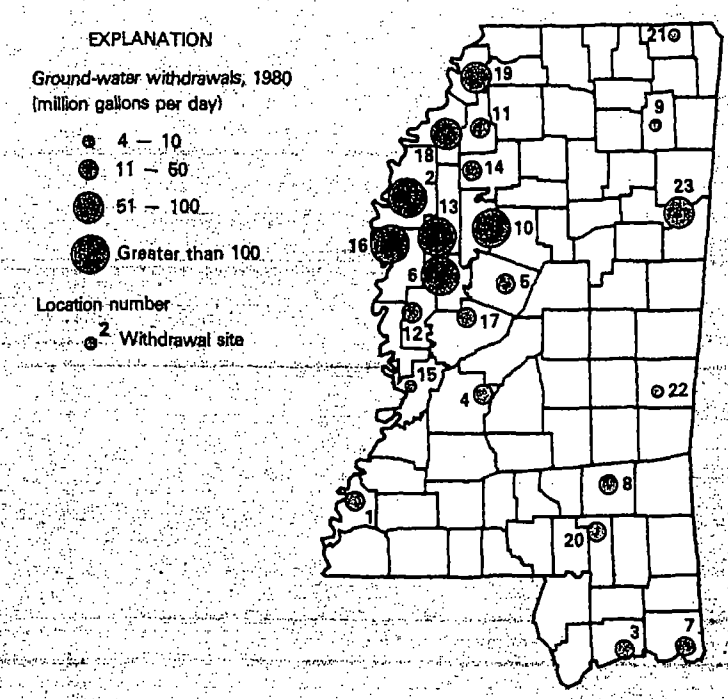












WITHDRAWAL SITES

No. on map	Geographic area	Aquifer	Principal uses
1	Natchez area	MRAA[1], Miocene	Industrial, public supply.
2	Bolivar County	MRAA, Cockfield, Sparta-Wilcox.	Irrigation, public supply.
3	Harrison County	Miocene	Public supply, industrial.
4	Jackson Metro area	Cockfield, Sparta	Do.
5	Holmes County	MRAA, Meridian-Upper Wilcox.	Do.
6	Humphreys County	MRAA, Sparta	Irrigation, public supply.
7	Pascagoula-Moss Point.	Miocene	Industrial, public supply.
8	Laurel area	....do	Do.
9	Tupelo area	Tuscaloosa, Eutaw-McShan.	Public supply, industrial.
10	Greenwood area	MRAA, Meridian-Upper Wilcox.	Irrigation, public supply.
11	Quitman County	MRAA, Meridian-Upper Wilcox.	Irrigation, industrial.
12	Sharkey County	MRAA	Irrigation.
13	Sunflower County	MRAA, Meridian-Upper Wilcox.	Irrigation, public supply.
14	Tallahatchie County.	....do	Do.
15	Vicksburg area	MRAA	Public supply, industrial.
16	Greenville area	MRAA, Cockfield	Irrigation, public supply.
17	Yazoo County	MRAA, Sparta	Do.
18	Clarksdale area	....do	Do.
19	Tunica County	MRAA, Lower Wilcox	Do.
20	Hattiesburg area	Miocene	Public supply, industrial.
21	Corinth area	Paleozoic	Irrigation.
22	Meridian area	Lower Wilcox	Public supply, industiral.
23	Northeastern Mississippi.	Tuscaloosa, Eutaw-McShan.	Industrial, public supply.

[1] Mississippi River alluvial aquifer

Figure 2. Areal distribution of major ground-water withdrawals and graphs of annual greatest depth to water in selected wells in Mississippi. (Sources: Withdrawal data from Callahan, 1983; water-level data from U.S. Geological Survey files.)

source of water that is used for irrigation, aquaculture (principally catfish farming), industrial cooling, and for one public supply (Vicksburg). The alluvium averages about 140 ft in thickness. Generally, the uppermost 20 to 30 ft is clay or other fine-grained material; underlying sand and gravel beds form the aquifer. Wells about 120 ft deep that produce 2,000 to 3,000 gal/min can be constructed nearly anywhere in the Delta.

The alluvial aquifer is recharged by the Mississippi River and smaller streams and, to a lesser extent, by direct infiltration of precipitation (Sumner and Wasson, 1984). Recharge also occurs on the east side of the delta where streams enter from the Bluff Hills and where water-bearing zones in the deeper aquifers are in contact with the alluvium.

Citronelle Aquifers

The Citronelle aquifers overlie older aquifers in southern Mississippi and are used for some public and industrial wells and extensively for small domestic and farm wells. The Citronelle originated as an extensive surficial fluvial deposit that has now been greatly dissected by streams. The relatively flat-lying, very permeable beds are a source of water for springs and seeps that sustain the low flow of streams and transmit recharge to underlying confined aquifer subcrops.

Miocene and Oligocene Aquifer Systems

The aquifers in southern Mississippi partly underlie the Citronelle aquifers and are separated from the underlying Eocene aquifers by several hundred feet of clay. In descending order, these aquifers are present in the Graham Ferry Formation, the Pascagoula Formation, the Hattiesburg Formation, the Catahoula Sandstone, the Vicksburg Group, and the Forest Hill Sand. All except the Vicksburg and the Forest Hill aquifers, which form the Oligocene aquifer system, are included in the Miocene aquifer system.

Some water wells in the Miocene aquifers are about 2,000 ft deep and the deepest well reaches 2,400 ft; however, geophysical logs made of oil tests in Hancock County show that freshwater extends to slightly more than 3,000 ft below sea level (fig. 1). Water wells about 1,000 ft deep on some of the barrier islands that form Mississippi Sound confirm that freshwater aquifers extend gulfward beyond the shoreline (Brown and others, 1944).

Eocene Aquifer System

The Eocene aquifers, exposed at the surface in north-central, northwestern, and central Mississippi, extend in the subsurface to the west, southwest, and south, and contain freshwater in about 50 percent of the State (Wasson, 1980). Included are the Cockfield, the Winona–Tallahatta, the Meridian–upper Wilcox, and the lower Wilcox aquifers and the Sparta aquifer system. All are regional in extent, and all except the Cockfield and lower Wilcox merge northward into a single aquifer south of Memphis, Tennesseee. The deepest water well in Mississippi (2,760 ft) taps the lower Wilcox aquifer in northern Wayne County. Geophysical logs made in oil test wells show that freshwater in this aquifer extends more than 3,000 ft below sea level in Smith County (fig. 1).

Cretaceous Aquifer System

The Cretaceous aquifers contain freshwater in about one-fourth of the State (Boswell, 1963). The outcrop area is in northeastern Mississippi. Cretaceous aquifers include the Ripley, the Coffee Sand, and the Eutaw–McShan aquifers, and the Tuscaloosa aquifer system. The Eutaw–McShan and Tuscaloosa aquifers extend into Alabama. The Ripley and the Coffee Sand aquifers, which are restricted to northern Mississippi generally north and west of Tupelo, extend into Tennessee and Arkansas. Freshwater extends to depths that exceed 3,000 ft below sea level in some areas more than 80 miles from the recharge areas (fig. 1), and some water wells exceed 2,000 ft in depth. The deepest wells that tap the Tuscaloosa aquifer system are located in the outcrop area of the Eocene aquifers (fig. 1).

Paleozoic Aquifer

The Paleozoic aquifer consists of the upper part of weathered, faulted limestone and chert; the aquifer is overlain by Cretaceous deposits in extreme northeastern Mississippi. Present development of the aquifer is restricted to Alcorn and Tishomingo Counties where well depths range from 100 to 600 ft (Wasson, 1980). Wells produce as much as 1,000 gal/min where large declines in water levels have not occurred. The water is moderately hard and, at some sites, contains more than 0.3 milligram per liter (mg/L) of iron.

GROUND-WATER WITHDRAWALS AND WATER-LEVEL TRENDS

Pumping centers that produce 4 million gallons per day (Mgal/d) or more of ground water are shown in figure 2. About three-fourths (1,143 Mgal/d in 1980) of the ground water used in Mississippi is pumped in the northwestern part of the State (fig. 2) from the Mississippi River alluvial aquifer for irrigation and aquaculture (Callahan, 1983). Water levels in the aquifer fluctuate seasonally, reaching high levels in the spring after recharge and declining to the lowest point in the fall following irrigation withdrawals and normal seasonal decline. The hydrograph for the alluvial aquifer near Greenville (location 16, fig. 2), indicates recovery of water levels in the aquifer after 1975; however, in some other areas (locations 2, 10, and 12), water levels lowered by the combination of drought conditions and unprecedented use of water for irrigation and aquaculture have not recovered in some areas (Sumner and Wasson, 1984).

Confined aquifers in Mississippi generally have shown a regional decline of about 2 ft annually during the last 30 years. The declines have attracted attention where pumping is concentrated in aquifers that are only a few hundred feet deep and pumping occurs near the top of the aquifer (locations 7, 9, and 21, fig. 2). The effects of water-level declines have elicited less concern in other areas where several hundred feet of available drawdown remains. The most pronounced water-level declines have been in the Paleozoic aquifer at Corinth (location 21), the Eutaw–McShan aquifer at Tupelo (location 9), the Sparta aquifer system at Jackson (location 4), and the Miocene aquifer system at Natchez, Pascagoula, Laurel, and Hattiesburg (locations 1, 7, 8, 20). Water-level recovery

during the last several years at locations 7 and 8 is due to reductions in withdrawal and changes in pumping distribution.

GROUND-WATER MANAGEMENT

The 1956 omnibus water law passed by the Mississippi Legislature specifically excluded subsurface waters. It was not until 1976 that a ground-water bill, codified now as Sections 51-4-1 et. seq., Mississippi Code Annotated, 1972 (James I. Palmer, Jr., Governor's Office of Economic Development and Natural Resources, written commun., 1984) was enacted. The concept of "capacity use areas," wherein well spacing, well depths, and withdrawal rates are regulated, is the mechanism provided for dealing with areas having identifiable ground-water-supply problems. The major limitations of the 1976 Act are that it addresses only withdrawals in excess of 50,000 gallons per day (gal/d) and excludes agricultural and oil and gas uses. In 1983, the State legislature created the Mississippi Water Management Council to reexamine completely all State laws pertaining to surface and subsurface waters and to report recommended amendments to the 1985 session.

The Mississippi Department of Natural Resources administers and enforces, through its Bureau of Land and Water Resources, not only the 1956 surface-water and 1976 ground-water statutes but also the 1966 Water Well Drillers Licensing Act. Primacy in permitting waste injection in Mississippi (other than in connection with oil and gas production) has been assigned to the Department's Bureau of Pollution Control, which also has responsibility for permitting and monitoring hazardous-waste sites. On June 27, 1984, Mississippi became the second State to be given final authorization to operate its own hazardous-waste program. Primacy for permitting oil field waste injection has not been delegated by the U.S. Environmental Protection Agency (as of December 1984).

The Department's Bureau of Geology, basically a research organization, is authorized to investigate and report on water resources. The Mississippi State Board of Health ensures that public-water supplies meet chemical, bacteriological, and other standards.

Water-resources investigations in Mississippi are conducted cooperatively by the U.S. Geological Survey with the Mississippi Department of Natural Resources, 10 other State and local agencies and municipalities, and five Federal agencies.

SELECTED REFERENCES

In addition to reports listed below, hydrologic and geologic information was derived from the series of Bulletins, Water Resources Basic-Data Reports, and Reports of Investigations prepared cooperatively by the U.S. Geological Survey and the Mississippi Department of Natural Resources.

Bicker, A. R., Jr., compiler, 1969, Geologic map of Mississippi: Mississippi Geological Survey Map.

Boswell, E. H., 1963, Cretaceous aquifers of northeastern Mississippi: Mississippi Board of Water Commissioners Bulletin 63-10, 202 p.

Boswell, E. H., Cushing, E. M., and Hosman, R. L., 1968, Quaternary aquifers in the Mississippi embayment, *with a discussion on* Quality of the water, by H. G. Jeffery: U.S. Geological Survey Professional Paper 448-E, 15 p.

Boswell, E. H., Moore, G. K., MacCary, L. M., and others, 1965, Cretaceous aquifers in the Mississippi embayment *with a discussion on* Quality of the water, by H. G. Jeffery: U.S. Geological Survey Professional Paper 448-C, 37 p.

Brown, G. F., 1947, Geology and artesian water of the alluvial plain in northwestern Mississippi: Mississippi Geological Survey Bulletin 65, 424 p.

Brown, G. F., Foster, V. M., Adams, R. W., Reed, E. W., and Padget, D. H., Jr., 1944, Geology and ground-water resources of the coastal area in Mississippi: Mississippi State Geological Survey Bulletin 60, 229 p.

Callahan, J. A., 1983, Water use in Mississippi, 1980: U.S. Geological Survey Open-File Report 83-224, [map].

Cederstrom, D. J., Boswell, E. H., and Tarver, G. R., 1979, Summary appraisals of the Nation's ground-water resources—South Atlantic-Gulf Region: U.S. Geological Survey Professional Paper 813-0, 35 p.

Cushing, E. M., Boswell, E. H., and Hosman, R. L., 1964, General geology of the Mississippi embayment: U.S. Geological Survey Professional Paper 448-B, 28 p.

Fenneman, N. M., 1938, Physiography of Eastern United States: New York, McGraw-Hill Book Co., Inc., 534 p.

Gandl, L. A., 1982, Characterization of aquifers designated as potential drinking-water sources in Mississippi: U.S. Geological Survey Water-Resources Investigations Open-File Report 81-550, 90 p.

Harvey, E. J., Golden, H. G., and Jeffery, H. G., 1965, Water resources of the Pascagoula area, Mississippi: U.S. Geological Survey Water-Supply Paper 1763, 135 p.

Hosman, R. L., Long, A. T., Lambert, T. W., and others, 1968, Tertiary aquifers in the Mississippi embayment, *with discussions on* Quality of the water by H. G. Jeffery: U.S. Geological Survey Professional Paper 448-D, 29 p.

Lang, J. W., 1972, Geohydrologic summary of the Pearl River basin, Mississippi and Louisiana: U.S. Geological Survey Water-Supply Paper 1899-M, 44 p.

Newcome, Roy, Jr., 1967, Ground-water resources of the Pascagoula River basin, Mississippi and Alabama: U.S. Geological Survey Water-Supply Paper 1839-K, 36 p.

Raisz, Erwin, 1954, Physiographic diagram, p. 59, *in* U.S. Geological Survey, 1970, National atlas of the United States: Washington, D.C, U.S. Geological Survey, 417 p.

Solly, W. B., Chase, E. B., and Mann. W. B., IV, 1982, Estimated use of water in the United States, 1980: U.S. Geological Survey Circular 1001, 56 p.

Stephenson, L. W., Logan, W. N., and Waring, G. A., 1928, Ground-water resources of Mississippi, *with discussions on* The chemical character of water, by C. S. Howard: U.S. Geological Survey Water-Supply Paper 576, 515 p.

Sumner, D. M. and Wasson, B. E., 1984, Summary of results of an investigation to define the geohydrology and simulate the effects of large ground-water withdrawals on the Mississippi River alluvial aquifer in northwestern Mississippi: U.S. Geological Water Resources Investigations report 84-4343, 17 p.

Wasson, B. E., 1971, Water resources of the Big Black River basin, Mississippi: U.S. Geological Survey Water-Supply Paper 1899-F, 29 p.

____1980, Sources for water supplies in Mississippi: Mississippi Research and Development Center Bulletin, 112 p.

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Reference 11
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BULLETIN 115

MISSISSIPPI GEOLOGICAL, ECONOMIC AND TOPOGRAPHICAL SURVEY

WILLIAM HALSELL MOORE
Director and State Geologist

JACKSON, MISSISSIPPI
1971

PRICE $3.00

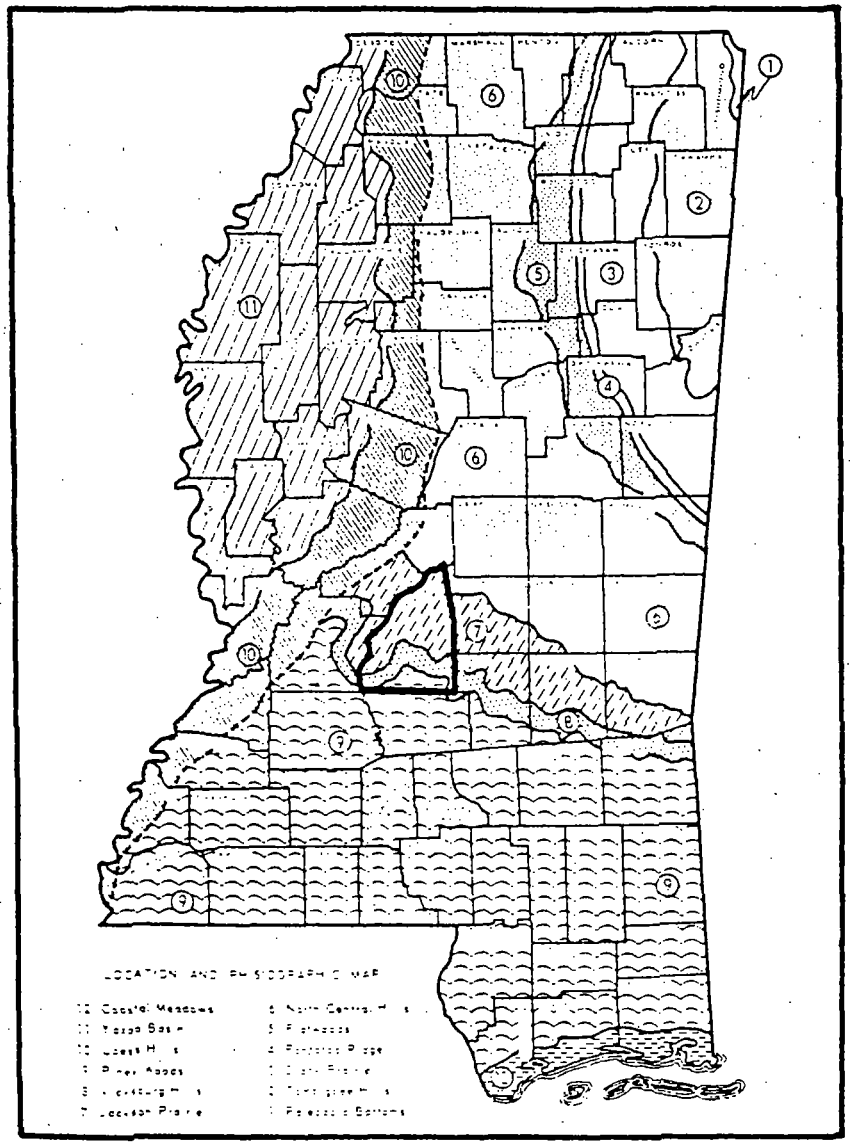

Figure 3.—Physiographic provinces of Mississippi. After R. R. Priddy.

Lowe[21] included the whole southern half of Mississippi south of the Jackson Prairie belt in a unit he designated the Long Leaf Pine Hills. This unit is now commonly known as the Southern Pine Hills. Priddy[22] further divided this unit into 3 dis-

The Paleocene-Eocene boundary has not been satisfactorily established in the subsurface of Mississippi. A time-rock unit concept, based on restricted faunal zones, would greatly expand the thickness of the Paleocene beds to include substantial amounts of the overlying strata now classified as Wilcox (Eocene). Because of its general acceptance as a rock unit, perpetrated mainly by the need for a reliable and easily identifiable electrical log correlation, the Midway is treated as a rock unit. In this sense the Paleocene sediments are restricted to a basal calcareous unit, the Clayton formation and an upper shale unit, the Midway shale.

Wilcox Group

The Wilcox group in Rankin County consists of an undifferentiated mass of complexly interstratified clays, clay shales, sandstones, silts and a few thin marls. The Wilcox varies from 1100 feet to approximately 1300 feet in thickness over the Jackson Dome. Off the dome, Wilcox sediments attain a thickness of 2830 feet in the more southern part of the County.

Wilcox sandstones are very fine- to coarse-grained. Quartz pebbles are commonly associated with the coarser sandstones. Most of the sandstones contain at least some lignitic or carbonaceous material and are also commonly slightly micaceous. The sandstones and silts are white, pale-gray, light-gray and light-green, the varying amounts of clay, silt and carbonaceous matrix materials producing the various colors. Some of the sandstones are glauconitic and calcareous. In some cases, these glauconitic sandstones were associated with the thin pale-gray to light-gray sandy marls.

The clays and clay shales are pale-gray, light-gray, gray and dark-gray. The gray and dark-gray clays and clay shales generally contain finely divided carbonaceous and lignitic material. Numerous seams of lignite were noted.

Any Meridian sand equivalents in the subsurface of Rankin County are included in the Wilcox group rather than in the Claiborne group. The inclusion of the Meridian sand in the Wilcox group is common practice when it is not easily separable from the subjacent Wilcox sediments.

Winona Formation

The Winona consists of a sequence of interbedded pale-gray and pale-grayish-white silty glauconitic chalks, sandy marls and minor amounts of light-gray and light greenish-gray slightly calcareous and fossiliferous clay shales and clays.

The Winona formation is only 10 to 15 feet thick over the Jackson Dome. Thickening occurs in all directions off the dome and up to 65 feet of Winona, restricted as it is in this report, have been recorded in the eastern parts of the County.

Zilpha Formation

The Zilpha varies from a minimum of 200 feet in thickness on the Jackson Dome to a maximum of 420 feet in the southwestern part of the County. Facies changes produced by local depositional environments, as well as structural thinning over the Jackson Dome account for the divergence in formation thickness.

The lower part of the Zilpha formation consists of a sequence of gray slightly fossiliferous clay shales often containing finely disseminated lignite or carbonaceous material. The basal strata of the Zilpha is slightly glauconitic and calcareous at the contact with the glauconitic chalks and marls of the underlying Winona formation.

The upper part of the formation is variably sandy and the clay shales tend to be silty and slightly micaceous. A fluctuating succession of one facies of deposition by another resulted in an interstratified sequence of clay shales and very fine- to medium-grained sands. These sands are finer than the basal sands of the overlying Kosciusko formation. Some of the finer sandstones in several wells were slightly glauconitic. Traces of reddish-brown slightly sandy and glauconitic clay ironstones were also noted in several wells. The few available sets of cuttings through this interval were of such poor quality that any distribution pattern of the glauconitic sandstones and clay ironstones could not be determined.

The top of the Zilpha is placed at the base of the lowest massive sand sequence of the Kosciusko formation. While the upper part of the Zilpha may be quite sandy, these sands are

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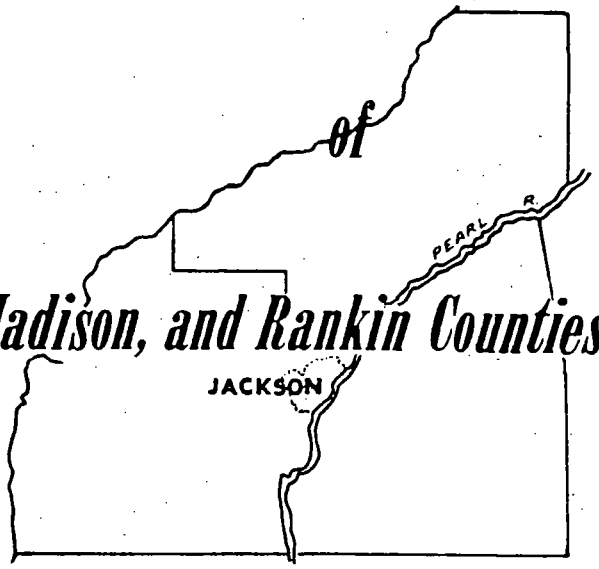
BULLETIN 64 - 1

GROUND - WATER RESOURCES



of

Hinds, Madison, and Rankin Counties, Mississippi.

by

E. J. Harvey, J. A. Callahan, and B. E. Wasson

Prepared by the United States Geological Survey
In cooperation with the
City of Jackson and the Mississippi Board of Water Commissioners
April 1964

GROUND-WATER RESOURCES OF HINDS, MADISON, AND RANKIN COUNTIES, MISSISSIPPI

By

E. J. Harvey, J. A. Callahan, and B. E. Wasson

ABSTRACT

The Jackson, Mississippi, metropolitan area, consisting of Hinds, Madison, and Rankin Counties, possesses abundant reserves of ground water of good quality. This area, comprising 2,400 square miles, is on the eastern flank of the Mississippi emb ment. Regional strike of the formations is northwest and dip is southwest. The Jackson dome is the main structural feature, and formation strike and dip in the vicinity of the dome are at variance with regional trends.

Fresh ground water occurs to depths greater than 2,000 feet almost everywhere in the area. The major sources of water supply, potentially and present, are the Wilcox Group, Sparta Sand, Cockfield Formation, Forest Hill Sand, and Catahoula Sand stone. Small supplies of hard water can be obtained from surficial deposits underlying stream terraces and the flood plains of the Big Black and Pearl Rivers.

The Wilcox Group contains a large reserve of soft water that has been tapped by only a few small-supply wells. The water is more highly mineralized and is warmer than that in the shallower aquifers. It is of good quality in Madison and northern Rankin Counties, but the quality deteriorates down the dip in Hinds County. Treatment to reduce color may be required for Wilcox water supplies.

The Sparta Sand is the principal aquifer from the standpoint of total pumpage. Uplift associated with the Jackson dome centered beneath the city of Jackson has raised the Sparta about 600 feet and made it readily accessible to development. Sparta wells 600 to 1,000 feet deep in Jackson have yields ranging from 200 to more than 1,000 gpm (gallons per minute). About 10 mgd (million gallons per day), 40 percent of the water used in Jackson, is pumped from the Sparta. It is probable tha additional properly designed well fields can withdraw as much as 5 mgd each without lowering the water level below feasible pumping depths.

The Cockfield is the most widely tapped water-bearing formation, chiefly becaus it is the shallowest aquifer in much of the area. Municipal water supplies for several small towns are obtained from the Cockfield, some wells yielding as much as 500 gpm.

Water from the Sparta Sand and Cockfield Formation is a soft, sodium bicarbonate type having a dissolved-solids content generally less than 400 ppm (parts per million Iron is a problem in some places, especially in the Cockfield water, and color is mor commonly objectionable in that aquifer.

The Forest Hill Sand and Catahoula Sandstone supply three small municipal water supplies and many domestic wells in the southern part of the area. Dissolved solids average about 500 ppm in water from these aquifers. Water from the Forest Hill generally is colored, and silica is high in the few Catahoula water samples analyzed.

dome. The aquifers described in this report range in geologic age from early Eoc to Recent. Monroe (1954, p. 50-110) gave detailed descriptions of the outcroppir rocks in Rankin County and in the vicinity of the Jackson dome in Hinds and Madis Counties. The outcropping rocks of Madison County were described by Priddy (196C

Owing to the regional southwestward dip, the older beds crop out in the nort eastern part of the area and dip beneath the surface. Progressively younger form tions are at the surface in belts a fraction of a mile to as much as 30 miles wid depending on formation thickness and dip. The belts of outcrop (fig. 1) strike northwest, except in the vicinity of Jackson where they form incomplete concentri rings on the flanks of the Jackson dome. Beds that reappear at the surface on th crest of the dome would be 600 to 700 feet below the surface were the dome nonexi

The oldest units described in this report are sands of the Wilcox Group, as are the oldest strata containing fresh water in these counties. In ascending ord the chief aquifers above the Wilcox Group are the Sparta Sand, Cockfield Formatio Forest Hill Sand, and Catahoula Sandstone. Fresh water occurs generally to depth much as 2,000 feet and possibly to a considerably greater depth in some localitie Lithologic and hydrologic characteristics of the various rock units underlying th area are summarized in table 1.

In the geologic column the water-bearing sand beds are interbedded with shal both marine and continental origin, fossiliferous sandy limestone, and calcareous sandstone. Strata deposited under generally marine conditions consist mostly of and they form aquicludes. The aquicludes are widespread and more uniform in thic than the aquifers. Sand beds composing the aquifers were deposited chiefly in a taic environment, and they pinch out or lens with clay to such an extent that san make up only 5 or 10 percent of the entire thickness of the formation in one loca and more than 50 percent in another. Lignitic material is common in several plac However, as a unit an aquifer such as the Sparta Sand, which contains several wat bearing beds, can be traced across the entire area.

STRUCTURE

Jackson is on the eastern flank of the broad Mississippi embayment syncline, part of the Gulf Coastal Plain province. The Tertiary formations dip southwest f the outcrop area in the northern and central parts of the State toward the embaym axis, which lies immediately west of Hinds County and generally parallels the Mis sippi River. West of the axis, the formations rise to the outcrop areas in Arkan and Louisiana. Dips in the project area usually are 15 to 25 feet per mile. Loc dips are greater and they vary from the normal southwesterly direction. The regi dip of the Tertiary rocks is interrupted by the Jackson dome, where the strata ar arched upward several hundred feet. The strike of the formations is northwest ex in the vicinity of the dome.

The sections, contour maps, and isopachous maps in the report demonstrate th pronounced effect of the Jackson dome on the attitude, thickness, and depth of aq fers. The distribution of detrital materials on the flanks of the dome has a con siderable effect on the availability of water supplies. There is a probability t slow, continuous movement and warping took place during deposition as loading by mentation increased around the dome. Because of the raised position of the dome, a part of the detrital materials available to the area was deposited on the struc

Water Quality

Six of the seven wells producing water from the Wilcox Group are on the crest of e Jackson dome or high on its flanks. There is considerable variation in the quaty of water from these wells. The water is in general a soft, colored, mixed sodium carbonate-sodium chloride type (table 4).

Electric logs indicate that fresh water is available in all of Madison County, e northeastern part of Hinds County, and the northern half of Rankin County. The per sand in the Wilcox contains fresh water over a larger part of the area than do e deeper sands. In the northern part of Madison County fresh water is available a depth of 2,200 feet, or to within 500 feet of the base of the Wilcox. On the me and its flanks in the vicinity of Jackson, the base of fresh water is about 1,800 et deep. South of the Jackson dome the Wilcox reaches depths at which all the water salty. A line corresponding with the -1,800-foot contour (fig. 7) may be consided the limit of fresh water southwest of Jackson.

Development of Water Supplies

The potential of the Wilcox as a source of water supply in this area can only be eorized. In counties to the northeast, the results of several pumping tests indite that sands in the Wilcox probably are as permeable as those in the Sparta.

Tallahatta Formation, Winona Sand, and Zilpha Clay

The Tallahatta Formation, Winona Sand, and Zilpha Clay are mainly of marine igin. The sediments consist, in ascending order, of: light-gray to greenish-gray ugh clay and siltstone of the Tallahatta, glauconitic sand and sandstone of the nona, and reddish-brown clay and shale of the Zilpha.

These units are essentially non-water-bearing and constitute an aquiclude (relavely impermeable bed) in the area. They are not differentiated in this report. A tailed lithologic and stratigraphic sequence of the beds was given in the basicta report (Harvey, Callahan, and Wasson, 1961, p. 60-61).

The three formations underlie the entire area at depths that range from 650 feet northeastern Madison County to 3,600 feet in southwestern Hinds County. The aggrete thickness is about 300 feet over the Jackson dome. Thickness in other parts of e area ranges from 420 to 570 feet.

Sparta Sand

Distribution and Character

The Sparta Sand, formerly known as the Kosciusko Formation (Thomas, 1942, p. 40), in the subsurface throughout the three counties (figs. 3-4, 8). Exposures of the mation are unknown in the area.

The Sparta is about 300 feet thick in northern Madison County. An increase in ickness of about 300 feet occurs as the formation dips toward the Jackson dome from e northeast. The formation thins to less than 400 feet on the crest of the dome d thickens again southwest of the dome to more than 800 feet in southwestern Hinds nty. Thinning is apparent also over the Oakley salt dome and the Flora oil field, ure 8.

Well Yields and Aquifer Characteristics

Yields of wells in the Cockfield Formation are as great as 500 gpm. Specific capacities of 10 gpm per foot have been measured. In general, specific capacities of wells in the Cockfield are less than those for wells in the Sparta.

Five aquifer tests were made in the Cockfield Formation (table 5). Transmissibility values ranged from 10,000 to 41,000 gpd per foot and the coefficient of permeability averaged 360 gpd per sq ft, considerably less than the average for the Sparta Sand. Permeability of Cockfield sand beds is highest east of Jackson. The effects of pumping from the Cockfield and a comparison of the Cockfield and Sparta aquifers are illustrated on the theoretical drawdown graph (fig. 11).

Water Quality

The Cockfield Formation contains hard water in the outcrop area of Madison County, but natural softening occurs down the dip. The iron content is high in the outcrop area, and even as far south as northern Hinds County it is as much as 3.5 ppm. Total mineralization increases down the dip as the water changes from a calcium bicarbonate to a sodium bicarbonate type. The dissolved solids content ranges from about 200 ppm in Madison County to 1,310 ppm at Utica. Generally the fluoride content is low (table 4). However, water from well S3 at Utica contained 4.4 ppm of fluoride and water from well D9, west of Edwards, contained 2.8 ppm. These are the only known occurrences, in the three counties, of water from the Cockfield having fluoride in excess of 1 ppm. The range in pH of the water was from 7.5 to 8.9, similar to that of water in the Sparta Sand.

North of the Jackson dome, little difficulty is experienced in obtaining clear water from the Cockfield. West and south of Jackson, coloring in the water is more of a problem and is indicative of more abundant lignite and longer contact of the water with lignitic materials.

Development of Water Supplies

The Cockfield Formation is the source of more than half of the municipal water supplies in the area (table 2). In the past, all supplies for the subdivisions around Jackson were developed in the Sparta Sand, but recently wells have been completed in the Cockfield west of the city. The Cockfield is unused in the city of Jackson; the few wells completed in the unit in past years having been abandoned because of fine sand and poor yield of the aquifer and the ready availability of water from the city system.

The heaviest concentration of Cockfield wells forms a belt 4 to 6 miles wide surrounding the Jackson dome. The Cockfield is potentially a useful aquifer underlying the city of Jackson at shallow depths. Well yields and specific capacities probably would be smaller than those of the Sparta, owing to the finer texture of the material composing the aquifer.

South and west of the main belt of wells in the Cockfield Formation the Forest Hill Sand and Catahoula Sandstone are generally used for small-capacity wells, and only at places where neither of these units contains sufficient sand to yield a satisfactory water supply are wells drilled to the Cockfield Formation.

Alluvium

Alluvial deposits occur in small amounts in valleys of all the tributary streams and in greater volume in the valleys of the Big Black and Pearl Rivers. The deposits have a maximum thickness of about 40 feet in the central part of the valleys, of which more than one-half usually is saturated. The sources of water in the alluvium are precipitation in the valleys and underflow from adjacent uplands.

Deposits in the Pearl River valley consist of silt, sand, and pea gravel. They contain shell fragments, lignitic shale, and other materials derived locally by erosion of the Tertiary or younger beds. Coarser deposits prevail at the base of the unit and finer materials at the top. Where the Pearl River flows across the Yazoo Clay the valley is 3½ to 4 miles wide. Where the river crosses the Forest Hill, Vicksburg, and Catahoula cuestas on the south flank of the Jackson dome, the valley walls converge to a width of 1 3/4 miles.

Domestic wells are common in the alluvium along the river valleys and furnish sufficient water for domestic and stock supplies. One small industrial water supply has been developed from the alluvium south of Jackson near the Pearl River.

Alluvium is limited in both valleys, but wells 6 inches in diameter probably are capable of producing 50 gpm or more. The permeability of the coarse part of the alluvial fill is estimated to be about 500 gpd per sq ft.

Water in the alluvium is a hard, calcium bicarbonate type containing 0.04 to 33 ppm of iron (table 4). Hardness as great as 341 ppm has been measured.

SUMMARY OF GROUND-WATER CONDITIONS

Water-bearing formations ranging in age from Eocene to Recent underlie the Jackson metropolitan area. The regional southwesterly dip of the formations is altered locally by the Jackson dome. Fresh water generally occurs to depths greater than 2,000 feet.

Five aquifers are available for development of moderate to large ground-water supplies. These are in the Wilcox Group, Sparta Sand, Cockfield Formation, Forest Hill Sand, and Catahoula Sandstone. Thick beds of sand in the Wilcox Group constitute a virtually untapped source of water supplies in the northeastern half of the area. The Sparta Sand is the most intensively developed of the aquifers. In 1960 an average of 11 mgd was withdrawn from the Sparta for industrial and municipal uses. Fresh water is available everywhere in the Cockfield Formation, and the unit supplies more than half of the small municipalities in the area. Most other water-supply developments in this aquifer consist of rural domestic supplies. The Forest Hill Sand is limited to the southern third of the project area. Thin beds of sand in this unit provide domestic supplies and a few small municipal supplies. Many domestic water supplies in the southern half of Hinds and Rankin Counties are obtained from the Catahoula Sandstone, as is the municipal supply at Utica.

Ground water in shallow zones is low in dissolved-solids content, generally is soft, and has a pH less than 7. Iron is a common objectionable feature in the water but it may be a product of corrosion of well fittings. In deeper zones the water is a soft, sodium bicarbonate type having a pH great than 7. Dissolved-solids content averages about 400 ppm for the aquifers younger than the Wilcox Group; the average is somewhat higher for the Wilcox. Iron content rarely is a problem in the deep wells. High fluoride concentrations are common in water from the Wilcox Group and Forest Hill

U.S. EPA REGION IV

SDMS

Unscannable Material Target Sheet

DocID: 10642417 Site ID: MSN000407423

Site Name: Gulf States Creosoting Company

Nature of Material:

Map:	☒	Computer Disks:	☐
Photos:	☐	CD-ROM:	☐
Blueprints:	☐	Oversized Report:	☐
Slides:	☐	Log Book:	☐

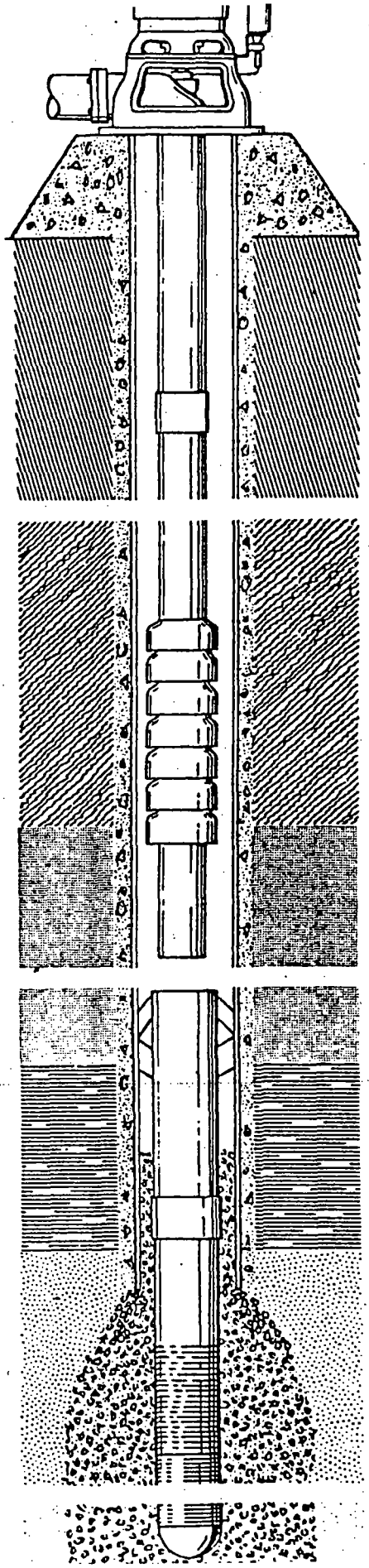
Other (describe): Geologic Map of Mississippi

Amount of material: _____

* Please contact the appropriate Records Center to view the material *

Reference 14
Gulf States Creosoting Company
Flowood; Rankin Co., Mississippi
MSN000407423

GRINER DRILLING SERVICE
TELEPHONE 601/736-6347
POST OFFICE DRAWER 825
COLUMBIA, MISS. 39429



LOG FORM

NAME Town of Flowood
LOCATION NE/4, NW/4, SE/4, NE/4, Section 12, T5N, R1E, Rankin County, Ms
ENGINEER Lester Engineering Co.
DRILLER Allen Sistrunk LOG. NO K68
COMPLETED April 30 19 82 ACCEPTED
Sales Engineer T.N. SHOWS Field Supervisor F. SISTRUNK

WELL DATA

Length surface casing N/A; size surface casing N/A
Cemented N/A No. Sacks N/A Size Drilled Hole 21"
Depth drilled hole 562 Size well casing 16" Type Welded
Length well casing 472' cemented Yes No. Sacks 600
Size underreamed hole 32" length underreamed hole 82'
Size screen 8" type Bar Weld mfg. by Houston Well Sc
Slot size .016 material 304 S.S. length screen 82'
Lap pipe size 8" lap pipe length 62' type Welded
Type gravel Ratcliff No. yds 12 Distance to lap 422
Distance to screen top 482 distance to gravel
Distance to screen bottom 562 type bottom Back Wash Valve 5' Stinger
Connection top of lap 8" R&L Collar static water level 185.78

PUMP DATA

Type Turbine make Floway Serial No 8220415
Size bowls 10" No. stages 12 Curve No. DKH Length bowls 9'6"
Length column 280' size column 8" type column T & C
Size oil tube N/A size shaft 1 3/16 length suction 20'
Size suction 8" size discharge 8" Head No. C-16½"x8"x
Overall pump length 289'6" Length headshaft 10'3"
Type lubrication Water type oiler N/A length air line N/A
Rated capacity 750 GPM Total Head 385
RPM 1770 Size foundation 2' x 2' Height 2'

ELECTRIC MOTOR DATA

Type VHS Make G.E. Serial No DTJ422103
HP 125 Voltage 480 RPM 1800 Frame B405TP16
Style P Phase 3 Cycle 60 AMPS 144
Height motor 36½ Dia. base 16½ Clutch bore 1 3/16 Clutch No.
Top bearing No 629AZZ2G001 Lower bearing No K5903493P016 Lubrication Oil & Gre

SWITCH DATA

Type Pumping Plant Panel Make Control Systems
Catalog No N/A Size 4 Rating 125 H.P.
Volts 480 Phase 3 Cycles 60
HP rating 125 Size relays 3 Relay type Quick Trip
Entrance switch 200 Amp
Fuse size & type 225 Amp Breaker Size wire 3-0

TELEPHONE 601/736-6347
POST OFFICE DRAWER 825
COLUMBIA, MISS. 39429

FORMATION LOG FOR Town of Flowood

ADDRESS Well No. 5

TEST HOLE NO. K68

TEST HOLE LOCATION NE¼ NW¼ SE¼ NE¼ Sec. 12, T5N

FORMATION AND TEST HOLE INFORMATION

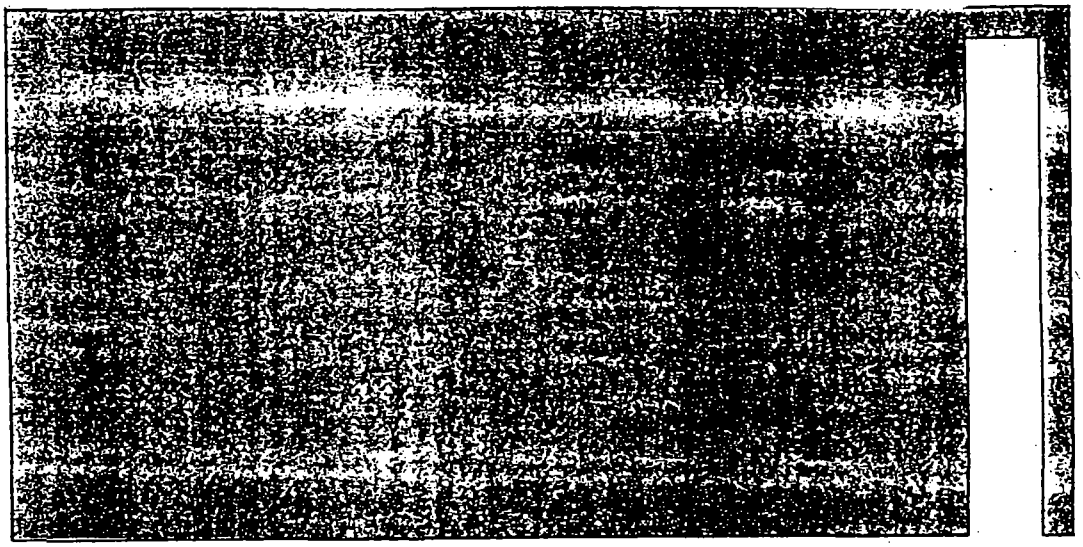
TOTAL DEPTH	THICKNESS EACH STRATUM	FORMATION	REMARKS
3	3	Top soil	
39	36	Clay with thin sand streaks	
172	133	Clay	
213	41	Sand, fine	
444	231	Clay & rocks	
460	16	Sand & clay streaks	
468	8	Clay	
570	102	Sand, medium	
604	34	Clay	
628	24	Sand	
661	33	Clay & sand streaks	
725	64	Sand with Thin clay streaks	
806	81	Clay & rocks	

Date Started 10-12- 19 81 Date Completed 10-16 19 81

T. N. Shows Field Engineer

Allen Sistrunk Driller

Reference 15
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423



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John A. Cherry

Department of Earth Sciences
University of Waterloo
Waterloo, Ontario

GROUNDWATER

Prentice-Hall, Inc.
Englewood Cliffs, New Jersey 07632

Table 2.2 Range of Values of Hydraulic Conductivity and Permeability

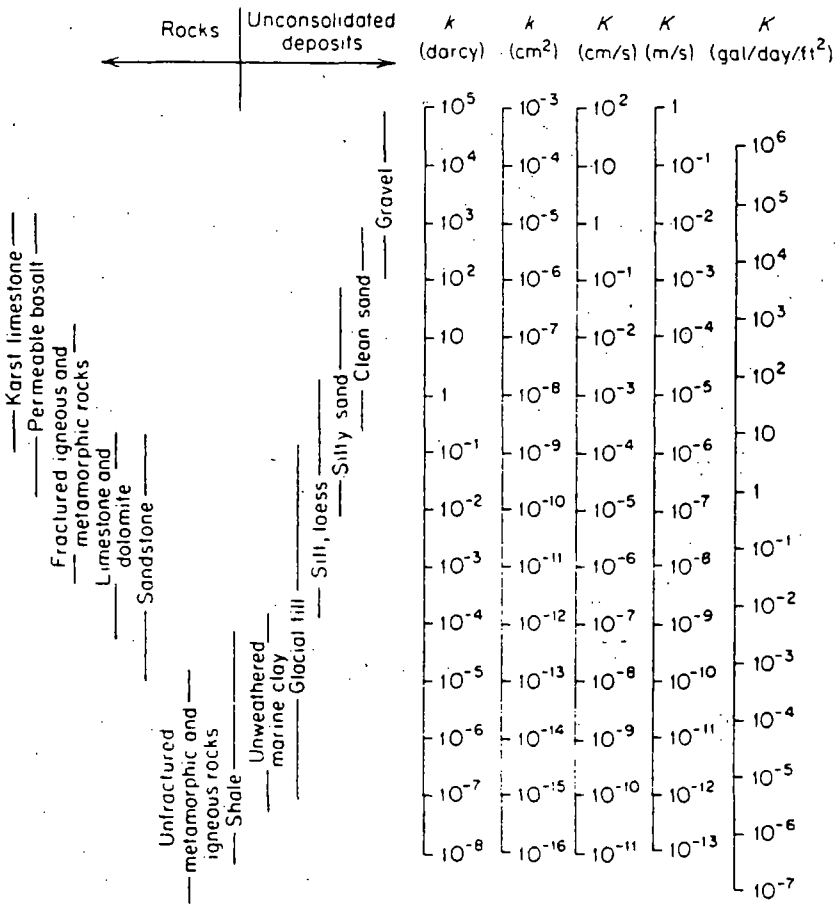

Table 2.3 Conversion Factors for Permeability and Hydraulic Conductivity Units

	Permeability, k*			Hydraulic conductivity, K		
	cm^2	ft^2	darcy	m/s	ft/s	U.S. gal/day/ft^2
cm^2	1	1.08×10^{-3}	1.01×10^{8}	9.80×10^{2}	3.22×10^{3}	1.85×10^{9}
ft^2	9.29×10^{2}	1	9.42×10^{10}	9.11×10^{5}	2.99×10^{6}	1.71×10^{12}
darcy	9.87×10^{-9}	1.06×10^{-11}	1	9.66×10^{-6}	3.17×10^{-5}	1.82×10^{1}
m/s	1.02×10^{-3}	1.10×10^{-6}	1.04×10^{5}	1	3.28	2.12×10^{6}
ft/s	3.11×10^{-4}	3.35×10^{-7}	3.15×10^{4}	3.05×10^{-1}	1	6.46×10^{5}
U.S. gal/day/ft^2	5.42×10^{-10}	5.83×10^{-13}	5.49×10^{-2}	4.72×10^{-7}	1.55×10^{-6}	1

*To obtain k in ft^2, multiply k in cm^2 by 1.08×10^{-3}.

Reference 16
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

Toxicological Profile for

CREOSOTE

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry

TP-90-09

TOXICOLOGICAL PROFILE FOR CREOSOTE

Prepared by:

Clement International Corporation
Under Contract No. 205-88-0608

Prepared for:

Agency for Toxic Substances and Disease Registry
U.S. Public Health Service

December 1990

DISCLAIMER

The use of company or product name(s) is for identification only and does not imply endorsement by the Agency for Toxic Substances and Disease Registry.

FOREWORD

The Superfund Amendments and Reauthorization Act (SARA) of 1986 (Public Law 99-499) extended and amended the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund). This public law directed the Agency for Toxic Substances and Disease Registry (ATSDR) to prepare toxicological profiles for hazardous substances which are most commonly found at facilities on the CERCLA National Priorities List and which pose the most significant potential threat to human health, as determined by ATSDR and the Environmental Protection Agency (EPA). The lists of the 250 most significant hazardous substances were published in the Federal Register on April 17, 1987, on October 20, 1988, on October 26, 1989, and on October 17, 1990.

Section 104(i)(3) of CERCLA, as amended, directs the Administrator of ATSDR to prepare a toxicological profile for each substance on the list. Each profile must include the following content:

(A) An examination, summary, and interpretation of available toxicological information and epidemiological evaluations on the hazardous substance in order to ascertain the levels of significant human exposure for the substance and the associated acute, subacute, and chronic health effects,

(B) A determination of whether adequate information on the health effects of each substance is available or in the process of development to determine levels of exposure which present a significant risk to human health of acute, subacute, and chronic health effects, and

(C) Where appropriate, an identification of toxicological testing needed to identify the types or levels of exposure that may present significant risk of adverse health effects in humans.

This toxicological profile is prepared in accordance with guidelines developed by ATSDR and EPA. The original guidelines were published in the Federal Register on April 17, 1987. Each profile will be revised and republished as necessary, but no less often than every three years, as required by CERCLA, as amended.

The ATSDR toxicological profile is intended to characterize succinctly the toxicological and adverse health effects information for the hazardous substance being described. Each profile identifies and reviews the key literature (that has been peer-reviewed) that describes a hazardous substance's toxicological properties. Other pertinent literature is also presented but described in less detail than the key studies. The profile is not intended to be an exhaustive document; however, more comprehensive sources of specialty information are referenced.

Foreword

Each toxicological profile begins with a public health statement, which describes in nontechnical language a substance's relevant toxicological properties. Following the public health statement is information concerning significant health effects associated with exposure to the substance. The adequacy of information to determine a substance's health effects is described. Data needs that are of significance to protection of public health will be identified by ATSDR, the National Toxicology Program (NTP) of the Public Health Service, and EPA. The focus of the profiles is on health and toxicological information; therefore, we have included this information in the beginning of the document.

The principal audiences for the toxicological profiles are health professionals at the federal, state, and local levels, interested private sector organizations and groups, and members of the public.

This profile reflects our assessment of all relevant toxicological testing and information that has been peer reviewed. It has been reviewed by scientists from ATSDR, the Centers for Disease Control, the NTP, and other federal agencies. It has also been reviewed by a panel of nongovernment peer reviewers and is being made available for public review. Final responsibility for the contents and views expressed in this toxicological profile resides with ATSDR.

William L. Roper, M.D., M.P.H.
Administrator
Agency for Toxic Substances and
Disease Registry

CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. PUBLIC HEALTH STATEMENT

This Statement was prepared to give you information about creosote and to emphasize the human health effects that may result from exposure to it. The Environmental Protection Agency (EPA) has identified 1,177 sites on its National Priorities List (NPL). Creosote as been found at 31 of these sites. However, we do not know how many of the 1,177 NPL sites have been evaluated for creosote. As EPA evaluates more sites, the number of sites at which creosote is found may change. The information is important for you because creosote may cause harmful health effects and because these sites are potential or actual sources of human exposure to creosote.

When a chemical is released from a large area, such as an industrial plant, or from a container, such as a drum or bottle, it enters the environment as a chemical emission. This emission, which is also called a release, does not always lead to exposure. You can be exposed to a chemical only when you come into contact with the chemical. You may be exposed to it in the environment by breathing, eating, or drinking substances containing the chemical or from skin contact with it.

If you are exposed to a hazardous substance such as creosote, several factors will determine whether harmful health effects will occur and what the type and severity of those health effects will be. These factors include the dose (how much), the duration (how long), the route or pathway by which you are exposed (breathing, eating, drinking, or skin contact), the other chemicals to which you are exposed, and your individual characteristics such as age, sex, nutritional status, family traits, life style, and state of health.

1.1 WHAT IS CREOSOTE?

Creosote is a complex mixture of many chemicals. There are three kinds of creosote. One type results from high-temperature treatment of coal (coal-tar creosote), one results from high-temperature treatment of beech and other woods (beechwood creosote), and one comes from the resin of the creosote bush (creosote bush resin). Coal-tar creosote is the most widely used wood preservative in the United States. Coal-tar products are also ingredients in medicines which are used to treat skin diseases. About 300 chemicals have been identified in coal-tar creosote, and there may be 10,000 other chemicals present in the mixture. The major chemicals in coal-tar creosote that can cause harmful health effects are polycyclic aromatic hydrocarbons (PAHs), phenol, and cresols. Beechwood creosote was at one time used as a disinfectant and as a treatment for coughs, but it is rarely used today. The major chemicals present in beechwood creosote are phenol, cresols, and guaiacol. Because coal-tar creosote is the only type found in the environment and hazardous waste sites, its effects on human health will be emphasized in

this toxicological profile. Furthermore, because this profile specifically addresses the creosote mixture, effects on health from exposure to the individual major chemicals in creosote, namely, the PAHs or phenol, will not be discussed in any great detail. The Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profile for Polycyclic Aromatic Hydrocarbons and the ATSDR Toxicological Profile for Phenol provide more information on these chemicals.

Coal-tar creosote is usually a heavy, oily, liquid that is typically amber to brown in color. Mixtures of creosote and other coal-tar products are black. The creosote found at hazardous waste sites is most often a black, heavy liquid. It has a sharp smoky odor, and a burning taste. It burns easily, but does not dissolve readily in water.

Creosote does not occur naturally in the environment but it can be released to water and soil through its use as a wood preservative. However, there are many known natural sources for components of the creosote mixture, such as PAHs. For more information on the natural sources of these components, the reader can refer to the ATSDR Toxicological Profile for Polycyclic Aromatic Hydrocarbons. Some parts of the creosote mixture can enter groundwater or change into other substances while other parts persist in treated wood products for decades. More information on the chemical and physical properties of creosote can be found in Chapter 3 and on its occurrence and fate in the environment in Chapters 4 and 5.

1.2 HOW MIGHT I BE EXPOSED TO CREOSOTE?

The major sources of human exposure to coal-tar creosote are contaminated hazardous waste sites, wood treatment facilities, and wood products treated with creosote. You cannot buy coal-tar creosote for treating wood products in your home. Wood products that are typically treated with creosote are railroad ties used by the railroads and for landscaping, telephone poles, marine pilings, and fence posts. You can also be exposed to creosote through contact with soil, water, or air contaminated as the result of releases from waste disposal sites and wood treatment facilities and the burning of treated scrap wood. Exposure of the general population to creosote from currently operating wood treatment facilities should be minimal because all of these facilities are subject to strict controls by the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA). However, exposure to creosote from abandoned wood treatment facilities is possible. There should be very little exposure of the average homeowner to creosote solutions used for wood treatment because it can only be sold to certified applicators, however, you can still be exposed to creosote treated products.

There is no information on background levels of creosote in air or food. Background levels of certain parts of the creosote mixture such as PAHs can be found in some city soils and foods, but it is not known if these substances

came from creosote. For more information on human exposure to creosote see Chapter 5.

1.3 HOW CAN CREOSOTE ENTER AND LEAVE MY BODY?

Creosote can enter your body through the lungs as a contaminant of air, through the stomach and intestines after eating contaminated food or drinking contaminated water, or through the skin. Although there is no information on how fast or how much of the creosote mixture is absorbed, many of the parts of the creosote mixture (for example, PAHs) are rapidly absorbed through the lungs and the stomach and the intestines.

The most common routes of exposure around hazardous waste sites are likely to be through the skin, and drinking water contaminated with creosote. Although it is not known how rapidly creosote can enter the body through the skin, creosote can cause reddening just from skin contact. Eating soil contaminated with coal-tar creosote can also provide a source of exposure. Chemicals in coal-tar creosote appear to accumulate in the body, particularly in fat tissue. Most of the chemicals in creosote that are taken into the body and are not stored in the body tissues, leave in the feces within a few days. More information on how creosote enters and leaves the body can be found in Chapter 2.

1.4 HOW CAN CREOSOTE AFFECT MY HEALTH?

Reports describing coal-tar creosote poisoning in workers or accidental or intentional ingestion of coal-tar creosote indicate that brief exposures to large amounts of coal-tar creosote can cause harmful effects on your skin, eyes, nervous system, and kidneys and can result in death. Longer-term exposure to lower levels of coal-tar creosote can also result in damage to your skin, such as reddening, blistering or peeling.

The major organs or systems affected by longer-term exposure to lower levels of coal-tar creosote in animals are the skin and lungs, whereas only the skin has been observed to be affected in humans under these exposure conditions. All of these effects worsen as the level of coal-tar creosote exposure increases.

An increased risk for cancer has been demonstrated in animals exposed to coal-tar creosote. Birth defects have been seen in livestock exposed to coal-tar creosote-treated wood. Since these effects were seen in animals, it is also possible that they could occur in humans. However, we have no information about these effects in humans. More information on the health effects associated with exposure to creosote is presented in Chapter 2.

1. PUBLIC HEALTH STATEMENT

1.5 WHAT LEVELS OF EXPOSURE HAVE RESULTED IN HARMFUL HEALTH EFFECTS?

Tables 1-1 through 1-4 show that no information is available on specific amounts of creosote in air, water, or food that cause health effects other than death. Coal-tar creosote can cause death to humans and animals if large enough quantities are swallowed. No information is available on the health effects of inhaled creosote.

Skin contact with a few drops of coal-tar creosote irritates and burns the skin and eyes. Coal-tar creosote also makes the skin more sensitive to the effects of the sun. These effects include burning, irritation and swelling.

1.6 IS THERE A MEDICAL TEST TO DETERMINE WHETHER I HAVE BEEN EXPOSED TO CREOSOTE?

There is no medical test to determine if you have been exposed to the creosote mixture. However, in your body, chemicals contained in creosote (PAHs) can attach to substances within the body. The presence of PAHs attached to these substances can be measured in body tissues or blood following exposure to creosote. However, this test is still being developed, and it is not known yet how well it works. In addition, chemicals contained in coal-tar creosote and their breakdown products can be measured in the urine of exposed individuals. Tests on the urine are commonly done to determine if a person has been exposed to coal-tar creosote. This test is not routinely available at a doctor's office and would require special equipment for sampling and detection of the compound. Although these tests can confirm that a person has been exposed to chemicals contained in coal-tar creosote, it is not yet possible to use the test results to accurately predict the severity of any health effects that might occur. Furthermore, these tests are not specific for the chemicals contained in coal-tar creosote, and the chemicals measured could have come from exposure to other sources. Additional information on tests for the measurement of creosote in the body is presented in Chapters 2 and 6.

1.7 WHAT RECOMMENDATIONS HAS THE FEDERAL GOVERNMENT MADE TO PROTECT HUMAN HEALTH?

The federal government has not developed regulatory standards and guidelines to protect people from the potential health effects of exposure to coal-tar creosote in drinking water and food. However, regulatory standards and guidelines in air and water exist for the key individual PAHs and phenols contained in creosote. For more information on the regulations and guidelines for PAHs and phenols, please refer to the ATSDR Toxicological Profiles for Polycyclic Aromatic Hydrocarbons and Phenol. EPA has declared creosote a restricted use pesticide which means that it can only be bought and used by certified applicators and only for those uses covered by the applicator's certification. The EPA has concluded that any release of creosote to the environment in excess of 1 pound should be reported.

1. PUBLIC HEALTH STATEMENT

TABLE 1-1. Human Health Effects from Breathing Coal-tar Creosote

Short-term Exposure (less than or equal to 14 days)		
Levels in air (ppm)	Length of Exposure	Description of Effects
		The health effects resulting from short-term exposure of humans to air containing specific levels of creosote are not known.
Long-term Exposure (greater than 14 days)		
Levels in air (ppm)	Length of Exposure	Description of Effects
		The health effects resulting from long-term exposure of humans to air containing specific levels of creosote are not known.

TABLE 1-2. Animal Health Effects from Breathing Coal-tar Creosote

Short-term Exposure (less than or equal to 14 days)		
Levels in air (ppm)	Length of Exposure	Description of Effects
		The health effects resulting from short-term exposure of animals to air containing specific levels of creosote are not known.
Long-term Exposure (greater than 14 days)		
Levels in air (ppm)	Length of Exposure	Exposure of Effects
		The health effects resulting from long-term exposure of animals to air containing specific levels of creosote are not known.

TABLE 1-3. Human Health Effects from Eating or Drinking Coal-tar Creosote

Short-term Exposure (less than or equal to 14 days)		
Levels in Food (ppm)	Length of Exposure	Description of Effects
		The health effects resulting from short-term exposure of humans to food containing specific levels of creosote are not known.
Levels in Water (ppm)		
		The health effects resulting from short-term exposure of humans to water containing specific levels of creosote are not known.
Long-term Exposure (greater than 14 days)		
Levels in Food (ppm)	Length of Exposure	Description of Effects
		The health effects resulting from long-term exposure of humans to food containing specific levels of creosote are not known.
Levels in Water (ppm)		
		The health effects resulting from long-term exposure of humans to water containing specific levels of creosote are not known.

TABLE 1-4. Animal Health Effects from Eating or Drinking Coal-tar Creosote

Short-term Exposure (less than or equal to 14 days)		
Levels in Food (ppm)	Length of Exposure	Description of Effects
34,000	<24 hours	Causes death in rats
Levels in Water (ppm)		The health effects resulting from short-term exposure of animals to water containing specific levels of creosote are not known.

Long-term Exposure (greater than 14 days)		
Levels in Food (ppm)	Length of Exposure	Description of Effects
		The health effects resulting from long-term exposure of animals to food containing specific levels of creosote are not known.
Levels in Water (ppm)		The health effects resulting from long-term exposure of animals to water containing specific levels of creosote are not known.

1. PUBLIC HEALTH STATEMENT

The federal government has developed regulatory standards and guidelines to protect workers from the potential health effects of other coal-tar products in air. OSHA has set a legally enforceable limit (threshold limit value, or TLV) of 0.2 mg/m^3 coal-tar pitch volatiles in workroom air to protect workers during an 8-hour shift.

For more information on regulations and advisories for coal-tar creosote exposure, see Chapter 7.

1.8 WHERE CAN I GET MORE INFORMATION?

If you have any more questions or concerns not covered here, please contact your State Health or Environmental Department or:

Agency for Toxic Substances and Disease Registry
Division of Toxicology
1600 Clifton Road, E-29
Atlanta, Georgia 30333

This agency can also give you information on the location of the nearest occupational and environmental health clinics. Such clinics specialize in recognizing, evaluating, and treating illnesses that result from exposure to hazardous substances.

2. HEALTH EFFECTS

2.1 INTRODUCTION

This chapter contains descriptions and evaluations of studies and interpretation of data on the health effects associated with exposure to creosote. Its purpose is to present levels of significant exposure for creosote based on toxicological studies, epidemiological investigations, and environmental exposure data. This information is presented to provide public health officials, physicians, toxicologists, and other interested individuals and groups with (1) an overall perspective of the toxicology of creosote and (2) a depiction of significant exposure levels associated with various adverse health effects.

2.2 DISCUSSION OF HEALTH EFFECTS BY ROUTE OF EXPOSURE

To help public health professionals address the needs of persons living or working near hazardous waste sites, the data in this section are organized first by route of exposure -- inhalation, oral, and dermal -- and then by health effect -- death, systemic, immunological, neurological, developmental, reproductive, genotoxic, and carcinogenic effects. These data are discussed in terms of three exposure periods -- acute, intermediate, and chronic.

Levels of significant exposure for each exposure route and duration (for which data exist) are presented in tables and illustrated in figures. The points in the figures showing no-observed-adverse-effect levels (NOAELs) or lowest-observed-adverse-effect levels (LOAELs) reflect the actual doses (levels of exposure) used in the studies. LOAELs have been classified into "less serious" or "serious" effects. These distinctions are intended to help the users of the document identify the levels of exposure at which adverse health effects start to appear, determine whether or not the intensity of the effects varies with dose and/or duration, and place into perspective the possible significance of these effects to human health.

The significance of the exposure levels shown on the tables and graphs may differ depending on the user's perspective. For example, physicians concerned with the interpretation of clinical findings in exposed persons or with the identification of persons with the potential to develop such disease may be interested in levels of exposure associated with "serious" effects. Public health officials and project managers concerned with response actions at Superfund sites may want information on levels of exposure associated with more subtle effects in humans or animals (LOAEL) or exposure levels below which no adverse effects (NOAEL) have been observed. Estimates of levels posing minimal risk to humans (minimal risk levels, MRLs) are of interest to health professionals and citizens alike.

2. HEALTH EFFECTS

For certain chemicals, levels of exposure associated with carcinogenic effects may be indicated in the figures. These levels reflect the actual doses associated with the tumor incidences reported in the studies cited.

Estimates of exposure posing minimal risk to humans (MRLs) are made, where data are believed reliable, for the most sensitive noncancer end point for each exposure duration. MRLs include adjustments to reflect human variability and, where appropriate, the uncertainty of extrapolating from laboratory animal data to humans. Although methods have been established to derive these levels (Barnes et al. 1987; EPA 1986a), uncertainties are associated with the techniques. The data on creosote are inadequate to calculate MRLs.

Creosote is a complex mixture of organic substances. It can be derive from three sources: coal-tar distillates (referred to herein as coal-tar creosote), wood (referred to herein as beechwood creosote), and the resin fr leaves of the creosote bush (Larrea, referred to herein as creosote bush resin). Coal-tar creosote is defined by the American Wood Preserver's Association (1988) as:

> A distillate derived from coal-tar. As used in the wood preserving industry, creosote denotes a distillate of coal-tar produced by the high temperature carbonization of bituminous coal. Creosote consists principally of liquid and solid aromatic hydrocarbons and contains some tar acids and tar bases; it is heavier than water and has a continuous boiling range beginning at about 200°C.

Coal-tar creosote is widely used as a wood preservative, and is the fo of creosote found in the environment and hazardous waste sites.

Beechwood creosote consists mainly of phenol, cresols, guaiacol, xylenol, and creosol. It is a colorless or pale yellowish liquid and it has characteristic smoky odor and burning taste (Miyazato et al. 1981). It had therapeutic applications in the past as a disinfectant and a stimulating expectorant, but it is rarely used today. Though beechwood creosote and coa tar creosote have some components in common (e.g., phenols), and some of the adverse effects associated with exposure to beechwood creosote may be due to the phenol component, it is not known whether coal-tar creosote will induce these same effects. Furthermore, coal-tar creosote contains PAHs, some of which are carcinogenic, and beechwood creosote does not. Thus, the relevanc of health effects data on beechwood creosote to risk associated with exposur to coal-tar creosote is not known.

Creosote bush resin consists of phenolics (e.g., flavonoids and nordihydroguaiaretic acid), neutrals (e.g., waxes), basics (e.g., alkaloids) and acidics (e.g., phenolic acids). The phenolic portion comprises 83%-91% the total resin. Nordihydroguaiaretic acid accounts for 5%-10% of the dry

2. HEALTH EFFECTS

weight of the leaves (Leonforte 1986). Again, it is not known if the health effects associated with creosote bush resin are due to the phenolic components common to coal-tar creosote or if these effects would be expected to occur following exposure to coal-tar creosote.

The chemical composition of each of these forms of creosote can vary considerably, depending on the source of coal, wood, or plant, and the design and attendant operating conditions (temperature, gas distillation systems, etc.) used to produce the creosote. Throughout this profile, every attempt will be made to specify the characteristics of the creosote under discussion, and indicate which effects may be expected to be common to two or more forms. Furthermore, since the intent of this profile is to discuss the creosote mixture, and even though it is likely that creosote's toxicity is due largely to the major individual components, the PAHs and phenol, the health effects of these individual components will not be discussed in great detail. However, it is understood that the toxicity of the individual components may not be representative of the actual toxicity of the creosote mixture because of the possibility of synergistic and/or antagonistic interactions in the mixture. For more information on the health effects of these components, the reader can refer to the ATSDR Toxicological Profiles for Phenol and Polycyclic Aromatic Hydrocarbons (ATSDR 1989b, 1990).

2.2.1 Inhalation Exposure

2.2.1.1 Death

No studies were located regarding death in humans following inhalation exposure to creosote. No deaths were observed in rats exposed to near saturated vapors of coal-tar creosote for one hour (concentration estimated to be less than 0.033 mL/L) (Pfitzer and Gross 1964). The exposed animals showed signs of slight eye and nose irritation and slight dyspnea. All rats were reported to exhibit weight gains comparable to the control animals and there were no treatment-related lesions observed at necropsy.

No studies were located regarding the following health effects in humans or animals following inhalation exposure to creosote.

2.2.1.2 Systemic Effects

2.2.1.3 Immunologic Effects

2.2.1.4 Neurologic Effects

2.2.1.5 Developmental Effects

2.2.1.6 Reproductive Effects

2.2.1.7 Genotoxic Effects

No mutagenic activity was detected in the urine samples of workers briefly exposed to coal-tar creosote vapors in a wood preserving factory (Bos et al. 1984a). The frequency and level of exposure to creosote vapors was nc reported. Of the three workers tested, two moved wood in and out of the wooc impregnating cylinder and one operated the cylinder. All had the potential for brief inhalation exposure to creosote. Furthermore, the possibility of dermal exposure by contact with residual surface creosote cannot be excluded. The absence of mutagens in the urine samples tested by Salmonella typhimurium assay was attributed by the authors to a relatively low level of exposure, improper timing for urine sample collection, and the insensitivity of the assay. The data are not sufficient to draw a conclusion regarding the genotoxic potential of inhaled creosote vapors in humans.

No studies were located regarding genotoxic effects in animals followin inhalation exposure to creosote.

2.2.1.8 Cancer

Cases of multiple myeloma were compared in a Swedish case-referent stud on past occupational and radiation exposure (Flodin et al. 1987). Exposure was assessed by means of a questionnaire mailed to the study subjects that asked questions concerning occupational exposures (including exposure to coal tar creosote) and radiation exposure. Radiation exposure included estimates of natural background levels and estimates from medical procedures. The exposure to gamma radiation, either through occupation, medical testing, or from background sources found in building materials, was not significantly associated with an increase in multiple myeloma. A significant crude rate ratio for occupational exposure to coal-tar creosote was obtained (6.0; p=0.001). The rate ratio point estimate for occupational exposure to creosote increased to 9.5 after stratifying for age. This result indicates an association between occupational creosote exposure and the subsequent development of multiple myeloma. This study was limited by the number of smokers in the case group as compared with the referent group, by gender differences between the cases and referents, and, possibly, by recall bias and incomplete case ascertainment. Furthermore, it is assumed that the exposure route was primarily dermal, although some inhalation exposure may have been possible. This study does suggest an area for further research, indicating a possible relationship between creosote exposure and the development of multiple myeloma.

Creosote does contain mutagenic PAHs, and therefore an association between creosote exposure and the development of multiple myeloma appears to be biologically feasible. Furthermore, creosote exposure has been associated with cancers of the nasal cavity, larynx, lung, skin, and scrotum (Fraumeni 1975). See Section 2.2.3.8, "Dermal Exposure, Cancer" for a more detailed

2. HEALTH EFFECTS

discussion of the types of cancer associated with exposure to creosote in humans.

No definitive inhalation carcinogenicity bioassays have been conducted with creosote in animals.

2.2.2 Oral Exposure

Figure 2-1 and Table 2-1 describe the health effects observed in laboratory animals associated with oral exposure levels to coal-tar and beechwood creosote at varying time and exposure levels. Although beechwood creosote, creosote bush resin, and coal-tar creosote have some components in common (e.g., phenols), and some of the adverse effects associated with exposure to beechwood creosote may be due to the phenol component (e.g. acute and/or subacute toxicity), it is not known whether coal-tar creosote will induce these same effects. Furthermore, coal-tar creosote contains a complex mixture of carcinogenic/co-carcinogenic PAHs that probably account for the cancer risk associated with chronic exposure, and the other forms of creosote do not.

2.2.2.1 Death

A 70-year-old man died following ingestion of an unspecified amount of "industrial" creosote (presumably coal-tar creosote) (Bowman et al. 1984). Death was attributed to multi-organ failure and occurred 30 hours after admission to the hospital. It is not known if this man had a history of prior creosote ingestion. Death has been reported to occur in adults and children 14 to 36 hours after the ingestion of about 7 g or 1-2 g coal-tar creosote, respectively (Clayton and Clayton 1981). The latter anecdotal information is of limited value because it was obtained from a secondary source that provided no supporting documentation. Thus, ingestion of creosote can be fatal to humans, but the dose level required to produce death cannot be accurately estimated from these reports.

Cases of lethal poisoning resulting from ingestion of large amounts of coal-tar creosote have been reported in larger farm animals. The acute fatal dose for sheep is 4-6 g/kg and for calves, over 4 g/kg (HSDB 1988). The oral LD_{50} for coal-tar creosote is reported to be 433 mg/kg in the mouse and 725 mg/kg in the rat (RTECS 1981). However, another study reported an acute oral LD_{50} of 1700 mg/kg in the rat (Pfitzer and Gross 1964). The reasons for this discrepancy in LD_{50} values are not known. Based on these data, coal-tar creosote can be classified as mildly to moderately toxic.

The acute toxicity of beechwood creosote in both rats and mice was studied following the administration of single gavage doses in a 10% aqueous solution (Miyazato et al. 1981). The oral LD_{50} of beechwood creosote in rats was 870 mg/kg (females) and 885 mg/kg (males). The highest dose at which no death occurred was 600 mg/kg. There was no significant difference between

TABLE 2-1. Levels of Significant Exposure to Creosote - Oral

Figure Key	Species	Route	Exposure Frequency/ Duration	Effect	NOAEL (mg/kg/day)	LOAEL (Effect) Less Serious (mg/kg/day)	LOAEL (Effect) Serious (mg/kg/day)	Reference	Form
ACUTE EXPOSURE									
Death									
1	Rat	(G)	1 d 1x/d				1700[a] (LD50)	Pfitzer and Gross 1964	coal
2	Rat	(G)	1 d 1x/d		600		M:885 (LD50) F:870 (LD50)	Miyazato et al. 1981	beech
3	Mouse	(G)	1 d 1x/d		M:376 F:313		M:525 (LD50) F:433 (LD50)	Miyazato et al. 1981	beech
Systemic									
4	Rat	(G)	1 d 1x/d	Gastro		2.52 (hyperemia, distension of stomach)		Pfitzer and Gross 1964	coal
Neurological									
5	Rat	(G)	1 d 1x/d				600 (convulsions)	Miyazato et al. 1981	beech
6	Mouse	(G)	1 d 1x/d				313 (convulsions)	Miyazato et al. 1981	beech
INTERMEDIATE EXPOSURE									
Death									
7	Rat	(F)	3 mo 7d/wk		M: 1224 F: 768			Miyazato et al. 1981	beech
8	Mouse	(F)	3 mo 7d/wk		M: 1810 F: 1570			Miyazato et al. 1981	beech
Systemic									
9	Rat	(F)	3 mo 7d/wk	Hemato		M:257 F:163 (decreased red blood cell, increased serum cholesterol)		Miyazato et al. 1981	beech

TABLE 2-1 (Continued)

Figure Key	Species		Exposure Frequency/ Duration	Effect	NOAEL (mg/kg/day)	LOAEL (Effect) Less Serious (mg/kg/day)	LOAEL (Effect) Serious (mg/kg/day)	Reference	Form
				Hepatic		M:257 F:215 (increased liver weight:body weight ratio)			
				Renal		M:317 F:163 (increased kidney weight:body ratio)			
				Other		M: 1224 F:768 (decreased body weight and food intake)			
				Other		M: 1224 (increased spleen body weight ratio)			
10	Mouse	(F)	3 mo 7d/wk	Hemato	M: 1810 F: 1570			Miyazato et al. 1981	beech
				Hepatic		F:345 (increased liver weight:body weight ratio)			
				Renal		M:765 (decreased kidney weight)			
				Other		M: 1810 F: 1570 (decreased body weight and food intake)			
Neurological									
11	Rat	(F)	3 mo 7d/wk			M:257 (increased brain weight:body weight ratio)		Miyazato et al. 1981	beech
Reproductive									
12	Rat	(F)	3 mo 7d/wk			M: 1224 (increased testis: body weight ratio)		Miyazato et al. 1981	beech
CHRONIC EXPOSURE									
Death									
13	Rat	(F)	96 wk 7d/wk				M:313 (death)	Miyazato et al. 1984b	beech

TABLE 2-1 (Continued)

Figure Key	Species		Exposure Frequency/ Duration	Effect	NOAEL (mg/kg/day)	LOAEL (Effect) Less Serious (mg/kg/day)	LOAEL (Effect) Serious (mg/kg/day)	Reference	Form
Systemic									
14	Rat	(F)	96 wk 7d/wk	Hemato		M:143 (increased serum F:179 cholesterol)		Miyazato et al. 1984b	beech
				Hepatic		M:143 (increased liver weight:body weight ratio)			
				Renal		M:143 (increased kidney F:179 weight:body weight ratio; increased BUN (male) nephrosis (male)			
				Other	M:313 F:394	(decreased food intake) M:313 (decreased body F:394 weight)			
15	Mouse	(F)	52 wk 7d/wk	Resp		M:247 (histopath) F:297		Miyazato et al. 1984a	beech
				Hemato	M:474 F:532				
				Hepatic		F:297 (increased liver weight:body weight ratio)			
				Renal	F:297	(increased kidney weight:body weight ratio)			
				Other		M:247 (decreased body F:297 weight and food intake)			
Neurological									
16	Rat	(F)	96 wk 7d/wk			M:143 (increased brain F:394 weight:body weight ratio)		Miyazato et al. 1984b	beech
17	Mouse	(F)	52 wk 7d/wk			F:297 (increased brain weight:body weight ratio)		Miyazato et al. 1984a	beech

[a]Converted to an equivalent concentration in food for presentation in Table 1-4.

mg/kg/day = milligrams per kilogram per day; d = day; mo = month; x/d = times per day; (G) = gavage; (F) = feed; NS = not specified; Gastro = gastrointestinal; Hemato = hematological; Resp = respiratory; BUN = blood urea nitrogen; LD50 = lethal dose, 50% kill; beech = beechwood; M = male; F = female

mg/kg/day = milligrams per kilogram per day; d = day; mo = month; x/d = times per day; (G) = gavage; (F) = feed; NS = not specified; Gastre = gastrointestinal; Hemato = hematological; Resp = respiratory; BUN = blood urea nitrogen; LD50 = lethal dose, 50% kill; beech = beechwood; M = male; F = female.

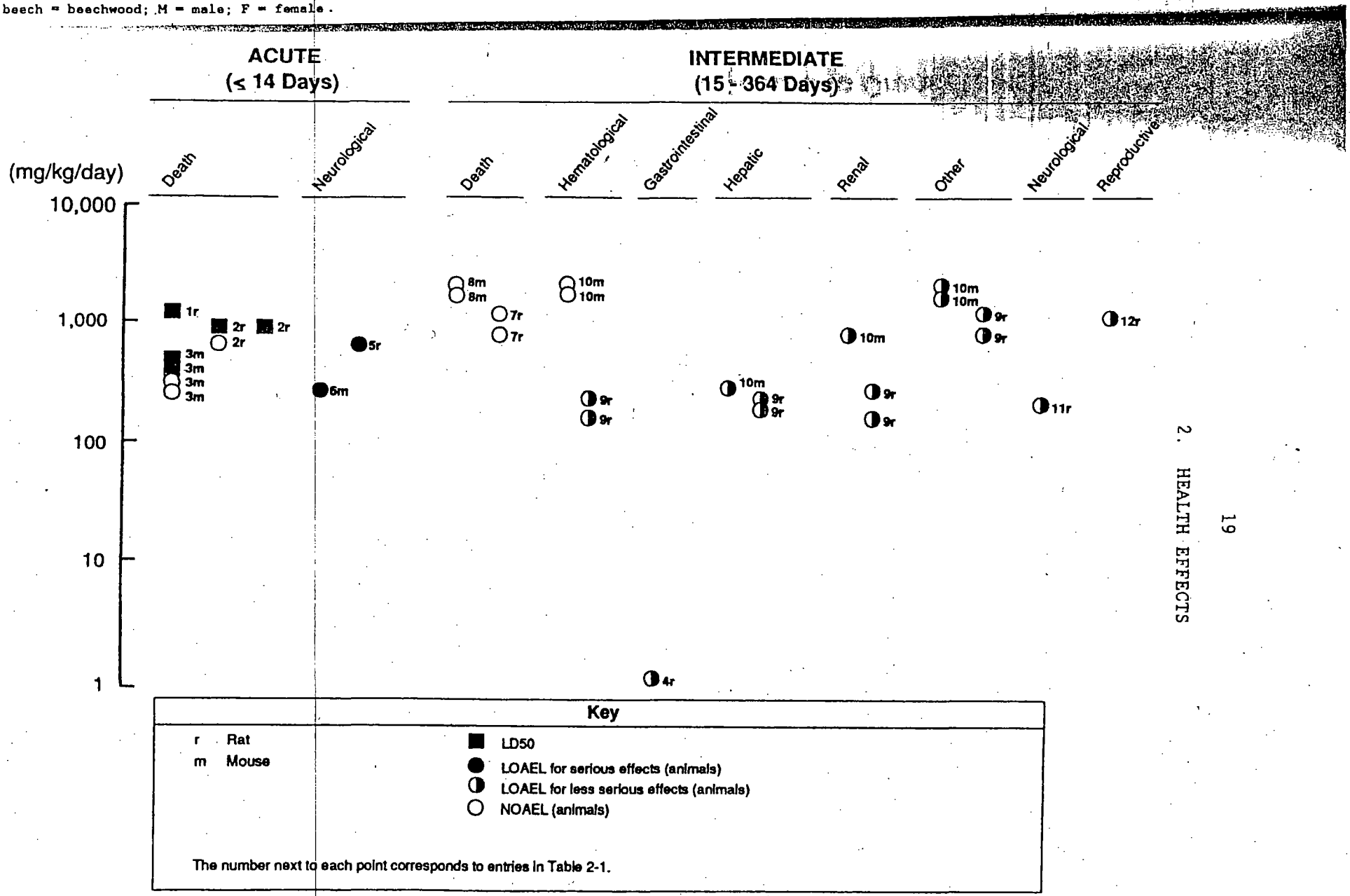

FIGURE 2-1. Levels of Significant Exposure to Creosote - Oral

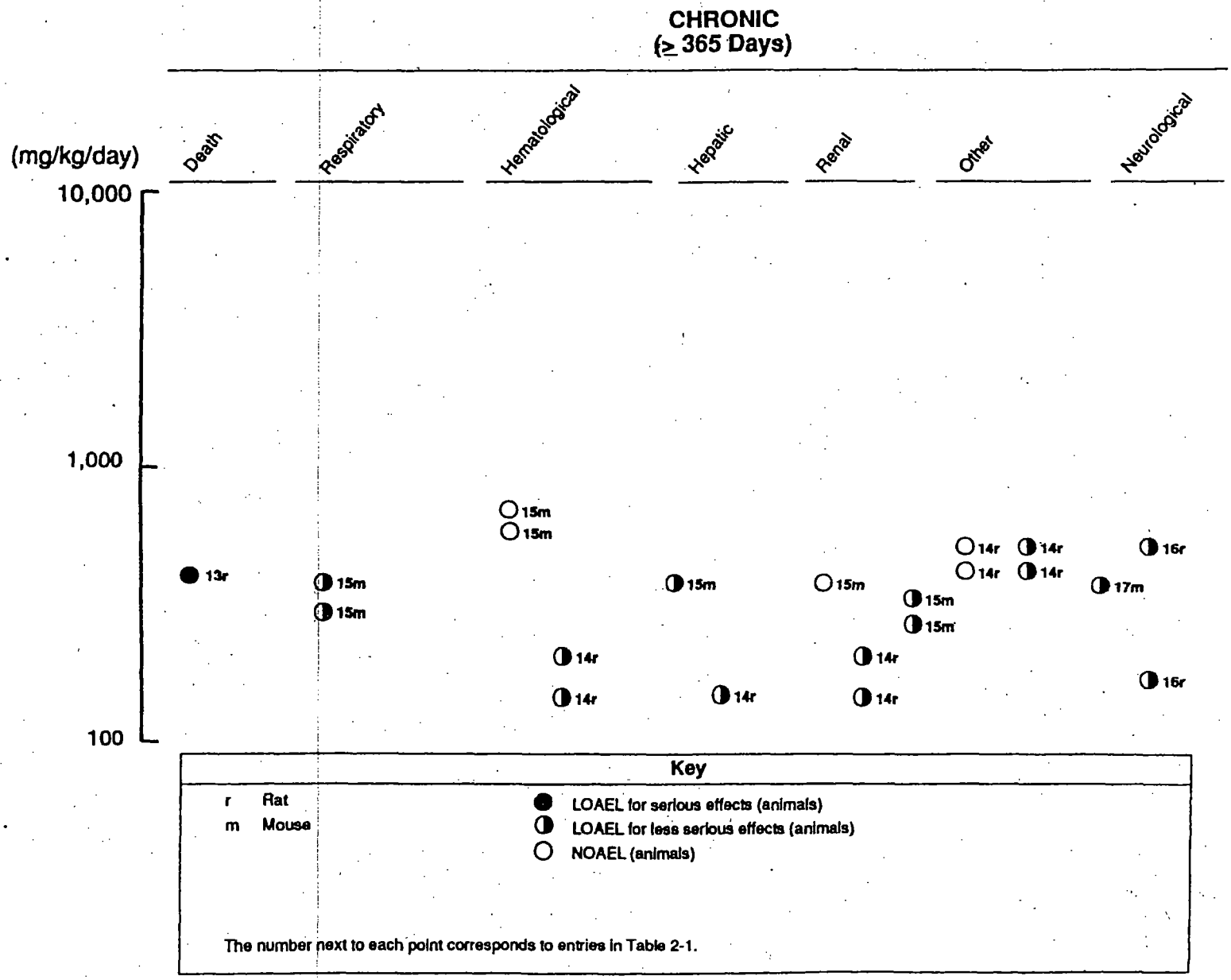

FIGURE 2-1. Levels of Significant Exposure to Creosote - Oral (Continued)

FIGURE 2-1. Levels of Significant Exposure to Creosote - Oral (Continued)

male and female rats with respect to mortality, and most animals died within 30 minutes following severe convulsions. Mice appeared to be more susceptible to the lethal effects of beechwood creosote. The oral LD_{50}s in mice were 433 mg/kg (female) and 525 mg/kg (male). The highest dose at which no death occurred was 313 mg/kg (female) and 376 mg/kg (male). The mortality in female mice was significantly higher than in male mice. Most animals died within 30 minutes following severe convulsions. These results indicate that the acute toxicity of beechwood creosote is relatively low, and some species and sex differences exist.

The highest NOAEL values and all LD_{50} values for death in each species are recorded in Table 2-1 and plotted in Figure 2-1.

2.2.2.2 Systemic Effects

There is relatively little information available regarding the systemic effects of ingested creosote. The database consists primarily of old anecdotal reports or animal studies that would be considered inadequate by current standards. Three recent studies published by Miyazato et al. (1981, 1984a,b) that evaluated the acute, subchronic, and chronic effects of beechwood creosote in rats and mice comprise the bulk of reliable information on the systemic effects of ingested creosote. Based on the results of these studies, the liver, kidney, and central nervous system may be target organs of creosote toxicity. Effects have also been observed in the gastrointestinal system, respiratory system, and cardiovascular system. No studies were located regarding musculoskeletal or dermal/ocular effects in humans or animals after oral exposure to creosote.

Respiratory Effects. No studies were located regarding respiratory effects in humans following oral exposure to creosote.

A slightly higher incidence of bronchitis or thickening of the tracheal mucous membrane was observed in mice who ingested feed that contained 0.3% (equivalent to 247 mg/kg/day for males and 297 mg/kg/day for females) and 0.6% (equivalent to 474 mg/kg/day for males and 532 mg/kg/day for females) beechwood creosote for 52 weeks (Miyazato et al. 1984a). The authors attributed this to irritation from long-term inhalation exposure to volatile components of creosote in the feed, and not a direct toxic effect on the respiratory tissue. These values are presented in Table 2-1 and plotted in Figure 2-1.

Beechwood creosote has been and continues to be used therapeutically on a limited basis as an expectorant/cough suppressant based on its presumed ability to increase the flow of respiratory fluids. The efficacy of creosote (type not specified, but presumably beechwood creosote) as an expectorant was studied by measuring the output of respiratory tract fluids in cats given a single dose of 0.1 or 5 mL/kg (concentration not specified) (Stevens et al.

1943). Creosote produced a slight increase in the output of respiratory trac fluid under these conditions. This is not considered a toxic effect. Given the limitations of this study (e.g., no dose information, no other respirator effects evaluated), it provides no useful information on the potential respiratory effects of beechwood creosote.

Cardiovascular Effects. The case of a 52-year-old woman who had been taking creosote (type and dose not specified) for 9 years to treat chronic bronchitis was reported by Robinson (1938). The woman was found to be weak, dizzy, light-headed, and hypertensive (blood pressure = 206/140). A modified diet and diuretic therapy relieved all of these symptoms. Upon reinstitution of creosote therapy, her blood pressure rose to 235/130. The author concluded that creosote was responsible for the woman's hypertension. This study provides anecdotal evidence of creosote-induced cardiovascular effects, but the limited sample size, lack of detail on exposure, and possibility of confounding factors limits its usefulness.

No studies were located regarding the cardiovascular effects in animals following oral exposure to creosote.

Gastrointestinal Effects. Ulceration of the oropharynx and petechial hemorrhages over the gastrointestinal serosal surfaces were noted at autopsy in the case of a 70-year-old man who died following ingestion of industrial creosote (Bowman et al. 1984). However, the esophagus and stomach were intact. The authors attributed these effects to acute tissue damage resulting from phenol-induced corrosive effects (phenol is a component of creosote).

Animals that died following the administration of single gavage doses of coal-tar creosote in an acute range-finding study (doses ranged from 2.52-5.00 mg/kg) exhibited hyperemia and distention of the stomach upon necropsy. No studies were located regarding gastrointestinal effects in animals following intermediate- or chronic-duration oral exposure to creosote.

Hematologic Effects. No studies were located regarding hematologic effects in humans following oral exposure to creosote.

Various serum chemistry and hematological parameters were measured by Miyazato et al. (1981, 1984a,b) in rats and mice fed beechwood creosote in the daily diet for 3 months, 52 weeks (mice) or 96 weeks (rats). No significant treatment-related changes were noted in mice of either sex fed up to 1,570 (female) or 1,810 (male) mg/kg/day for 3 months (Miyazato et al. 1981). These doses are considerably higher than the oral LD_{50}s reported for mice by the same authors. One possible explanation for this discrepancy is that the LD_{50}s were determined by bolus gavage injections and in the subchronic study, the beechwood creosote was administered in the feed. A slight reduction in red blood cells (RBCs) and a slight increase in serum cholesterol was noted in male and female rats following dietary exposure to 163 (female) or 257 (male)

mg/kg/day and higher for 3 months (Miyazato et al. 1981). The reduction in RBCs was not dose-dependent and was therefore not considered to be toxicologically significant; the significance of the cholesterol changes is not known.

Increases in serum cholesterol were also noted in rats exposed to creosote in the diet for 96 weeks at doses of 143 (male) and 179 (female) mg/kg/day and above (Miyazato et al. 1984b). Chronic (52 weeks) dietary exposure of mice to beechwood creosote resulted in statistically significant dose-related differences in mean cell volume, mean corpuscular hemoglobin, and absolute lymphocyte and neutrophil counts when compared to the corresponding control values. These changes were not considered by the authors to be toxicologically significant; they claimed that the values were within normal physiological ranges (Miyazato et al. 1984a).

The highest NOAEL values and all reliable LOAEL values for hematological effects in each species and duration category are recorded in Table 2-1 and plotted in Figure 2-1.

Hepatic Effects. Degeneration and necrosis of hepatocytes were observed at autopsy in the case of a 70-year-old man who ingested "industrial" creosote (Bowman et al. 1984). Given the advanced age of this man and the lack of comparison data, it is not possible to definitively attribute these effects to creosote ingestion.

Liver-to-body-weight ratios tended to increase in rats and mice exposed to beechwood creosote in the diet for either 3 months (rats and mice), 52 weeks (mice) or 96 weeks (rats) (Miyazato et al. 1981, 1984a,b). However, this response is of questionable toxicological significance, since no treatment-related changes were noted during histopathological evaluation. A significant increase in serum glutamic-oxaloacetic transferase (GOT) and glutamic-pyruvic transferase (GPT) levels was also observed in the chronically exposed female mice, but these levels were still within normal physiological range. Taken together, these early changes indicate that if increased doses of beechwood creosote are used, more clear cut hepatotoxic effects would be expected to occur. However, the liver weight changes observed may simply reflect pharmacological changes (e.g., response to enzyme induction).

All reliable LOAEL values for hepatic effects in each species and duration category are recorded in Table 2-1 and plotted in Figure 2-1.

Renal Effects. A 70-year-old man who ingested a fatal dose of "industrial" creosote became acidotic and anuric before he died, indicating the possibility of kidney failure (Bowman et al. 1984). Acute renal tubular necrosis was revealed at necropsy. However, the acute tubular necrosis may have been due to vascular insufficiency rather than a direct toxic effect on the kidney.

Kidney-to-body-weight ratios tended to increase in rats and mice expose to beechwood creosote in the diet for either 3 months (rats and mice), 52 weeks (mice) or 96 weeks (rats) (Miyazato et al. 1981, 1984a,b). However, this response is of questionable toxicological significance in the subchronically treated mice and rats of both sexes and the chronically treate female rats since no treatment-related changes were noted at histopathologica evaluation. Blood urea nitrogen and serum inorganic phosphorus were elevated in the chronically treated male rats, which is indicative of uremia. Chronic nephrosis, which occurs spontaneously in old male rats, was also observed at higher incidence in the chronically treated male rats than in the control mal rats, and most likely accounts for the biochemical changes observed. The authors concluded that long-term exposure to beechwood creosote accelerated the occurrence of chronic nephrosis in male rats (Miyazato et al. 1984b). These results suggest that beechwood creosote has the potential to induce adverse effects in the kidney.

All reliable LOAEL values for renal effects in each species and duratior category are recorded in Table 2-1 and plotted in Figure 2-1.

2.2.2.3 Immunological Effects

No studies were located regarding immunologic effects in humans or animals following oral exposure to creosote.

2.2.2.4 Neurological Effects

No studies were located regarding neurological effects in humans following oral exposure to creosote.

The first sign of poisoning following the gavage administration of single high doses (doses not specified) of beechwood creosote to mice and rats was muscle twitching followed by convulsions within 1 to 2 minutes. This was followed by asphyxiation, coma, and death (Miyazato et al. 1981).

Several cases of acute poisoning in cattle have been attributed to ingestion of coal-tar creosote. Six cattle believed to have licked creosote-treated electrical light poles as evidenced by burning over the mucosa of the mouth, tongue, and lips showed the following symptoms: extremely rapid respiration, contracted pupils, cold skin, apparent severe pain, and coma (Hanlon 1938). However, the possibility exists that some of these effects may have been due to ingestion of pentachlorophenol. Pentachlorophenol, like creosote, is an oil-borne wood preservative with extensive use in the public utility industry for treatment of utility poles. Some of the effects observed by Hanlon (1938) are more compatible with the metabolic effects (i.e., uncoupling of phosphorylative oxidation) associated with pentachlorophenol (for more information on the effects of pentachlorophenol, please refer to the ATSDR Toxicological Profile for Pentachlorophenol, ATSDR 1989a). Thus, it is

not possible to determine conclusively whether creosote is toxic to the central nervous system of animals based on this report.

Dose-related increased brain-to-body-weight ratios were observed in male rats exposed to beechwood creosote in the diet for 3 months (Miyazato et al. 1981), female mice exposed for 52 weeks (Miyazato et al. 1984a) and male and female rats exposed for 96 weeks (Miyazato et al. 1984b). This response is of questionable toxicological significance because of the lack of a dose-response trend and/or the lack of treatment-related pathological findings at necropsy.

All reliable LOAEL values for neurological effects for each species and duration category are recorded in Table 2-1 and plotted in Figure 2-1.

2.2.2.5 Developmental Effects

No studies were located regarding developmental effects in humans or animals following oral exposure to creosote.

2.2.2.6 Reproductive Effects

No studies were located regarding reproductive effects in humans following oral exposure to creosote. An increase in relative testis weight was observed in rats administered 1,224 mg/kg/day beechwood creosote in the diet for 3 months (Miyazato et al. 1981). There were no accompanying gross or histopathological lesions of the testes in these animals.

2.2.2.7 Genotoxic Effects

No studies were located regarding genotoxic effects in humans or animals following oral exposure to creosote.

2.2.2.8 Cancer

No studies were located that dealt directly with an association between cancer and ingested creosote in humans. Excess cases of breast cancer have been observed in St. Louis Park, Minnesota that were tentatively associated with coal-tar creosote contamination of the water supply. Coal-tar creosote-derived PAHs were first detected in the water supply of St. Louis Park in November 1978, but may have been there for decades. A 100 acre plot of creosote-contaminated soil upon which stood a plant that used creosote and operated from 1917-1972 is believed to be the source of contamination. The levels of creosote or creosote-derived PAHs in the contaminated drinking water of St. Louis Park were not specified. There were 113 cases of breast cancer in St. Louis Park compared to 78 cases in the metropolitan Minneapolis-St. Paul area during 1969 to 1971. An attempt was made to demonstrate that these excess cases could be explained by known risk factors for breast cancer, such as age at first birth, parity, age at menarche and menopause, body mass index,

history of benign breast disease, and familial history and had no association with environmental exposure variables (Dean et al. 1988). The authors presented a method to adjust the breast cancer morbidity in St. Louis Park using data from a larger population with documented risk factors for breast cancer ("standard population"). These more stable rates based on breast cancer risk factors were determined in a larger study conducted by Helmrich et al. (1983). Dean et al. (1988) determined that the attributable risk due to the risk factors was higher for the breast cancer cases in St. Louis Park (0.598) than in the metropolitan Minneapolis-St. Paul area (0.311). They then used these attributable risks to calculate an adjusted morbidity ratio to estimate expected numbers of breast cancer cases in the community. After this adjustment, there appeared to be a higher expected number of breast cancer cases (n=134) than the observed number (113) in St. Louis Park, thereby negating any association with creosote in the water supply. It is necessary when using any standardization method in adjusting rates to ensure comparability among the groups in the study population that are being compared and between the study population and the standard population. It would appear that differences do exist between women in St. Louis Park, the metropolitan Minneapolis-St. Paul area, and the larger cohort studied by Helmrich et al. (1983). These differences were not thoroughly examined by Dean et al. (1988) and could include differences in demographic, economic, and/or environmental factors. However, Dean et al. (1988) did note a difference in religious backgrounds between the study population described by Helmrich (1983) and that of the St. Louis Park area. These dissimilarities indicate that the populations are not directly comparable and therefore the adjustment of rates is not appropriate. The authors did not attempt to incorporate creosote contamination of the water as an independent variable in their analysis.

The Minnesota Department of Health (1985) also reviewed the St. Louis Park data and concluded that this study did not provide adequate evidence to associate breast cancer with creosote-contaminated groundwater. They supported this conclusion with the following observations. It is not possible to classify individuals or residences within St. Louis Park according to their relative degree of historical exposure to PAH contaminants in drinking water because the pattern and history of municipal well contamination are not known; contaminant levels were measured at the well head and not at the tap; water treatment, storage, and distribution effects on contaminant concentration are not known; and much of the water distribution system is lined with coatings made of coal-tar or asphalt. Furthermore, given the ubiquitous nature of PAHs, it is probable that exposures to PAHs from food would significantly exceed exposures from contaminated St. Louis Park well water. In addition, it was found that the specific PAHs that have been shown to induce mammary tumors in rodents were either not present in contaminated wells or were detected very rarely even in the most highly contaminated wells, and the many published case-control and cohort studies of breast cancer have not demonstrated clear-cut evidence of an association between breast cancer and smoking, which is a significant source of exposure to PAHs. These studies have also identified a number of risk factors that account for some of the observed variations in

rates among different groups of women, and the women of St. Louis Park differ from those in the general Metro area with respect to several of the factors that are known to influence breast cancer rates.

Dietary exposure of male and female mice to beechwood creosote at concentrations up to 532 mg/kg/day (which induced signs of toxicity) for 52 weeks induced no treatment-related increase in the incidence of tumors (Miyazato et al. 1984a). This study is limited in that 52 weeks may not be a sufficient treatment duration to observe an increase in the incidence of tumors in mice. However, these same authors reported that dietary exposure of male and female rats to 394 mg/kg/day beechwood creosote (which induced signs of toxicity) for 96 weeks also failed to result in any treatment-related increase in the incidence of tumors (Miyazato et al. 1984b). Based on these results, there is no evidence that ingested beechwood creosote is carcinogenic to mice or rats.

2.2.3 Dermal Exposure

Table 2-2 describes the health effects observed in laboratory animals associated with dermal exposure to coal-tar creosote. Coal-tar creosote exerts its toxic effects primarily via dermal exposure. Several reports were found which describe the occurrence of dermal and ocular irritation, burns, and "warts" (i.e. squamous papillomas) following acute or prolonged skin contact with coal-tar creosote. Coal-tar creosote also induces phototoxicity of the skin, and has been demonstrated to be a skin carcinogen in animals.

2.2.3.1 Death

No studies were located regarding death in humans following dermal exposure to creosote. The dermal LD_{50} in rabbits has been estimated to be greater than 7.95 g/kg following a 24-hour application of coal-tar creosote to both intact and abraded skin (Pfitzer and Gross 1964).

2.2.3.2 Systemic Effects

~~The skin is the target organ for creosote toxicity following dermal~~ exposure. No studies were located regarding respiratory, cardiovascular, hematologic, musculoskeletal, hepatic, or renal effects in humans or animals following dermal exposure to creosote.

Gastrointestinal Effects. No studies were located regarding gastrointestinal effects in humans following dermal exposure to creosote. Rabbits that died following single dermal applications of undiluted coal-tar creosote exhibited hyperemia of the intestines (Pfitzer and Gross 1964).

Dermal/Ocular Effects. Burns and irritation of the skin and eyes are the most frequent manifestations of coal-tar creosote toxicity following

TABLE 2-2. Levels of Significant Exposure to Creosote - Dermal

Figure Key	Species	Exposure Frequency/ Duration	Effect	NOAEL	LOAEL (Effect) Less Serious	LOAEL (Effect) Serious	Reference	Form
ACUTE EXPOSURE								
Death								
1	Rabbit	1 d 1x/d				> 7.95 g/kg (LD50)	Pfitzer and Gross 1964	coal
Systemic								
2	Mouse	7-21 d 7d/wk 1x/d	Derm	5% in paraffin	(irritation)		Wrench and Britten 1975	coal
INTERMEDIATE EXPOSURE								
Cancer								
3	Mouse	8 mo 2x/wk	Derm			0.25ml (CEL)	Roe et al. 1958	coal
4	Mouse	44 wk 2x/wk	Derm			0.25ml (CEL)	Boutwell and Bosch 1958	coal
CHRONIC EXPOSURE								
Cancer								
5	Mouse	70 wk 2x/wk	Derm			1 drop (CEL) undiluted	Lijinsky et al. 1957	coal
6	Mouse	Life 3x/wk	Derm			20% (CEL)	Poel and Kammer 1957	coal

d = day(s); wk = week(s); x/d = times per day; x/wk = times per week; Derm = dermal; Resp = respiratory; CEL = cancer effect level; ml = milliliters; > = greater than.

dermal exposure. Creosote burns were observed in construction workers who handled wood treated with creosote (presumably coal-tar creosote) (Jonas 1943). Exposure levels were not specified. It was found that 70% of the burn cases were mild and were characterized by erythema of the face. These symptoms were more marked on the cheeks, nose, forehead, and posterior part of the neck. The remainder of the burn cases (30%) were more severe and were characterized by intense burning, itching, and considerable subsequent pigmentation followed by desquamation. There is no way to determine, given the information provided, whether this response was due to primary irritation or an allergenic response. Conjunctivitis was seen in 15% of the men, with 3% of these showing corneal injuries. Exposure to the sun exacerbated these effects. The skin injuries were reversed with thorough washing, application of Foille solution (which contains various calcium salts, benzocaine, sulphur and vegetable oil base), and cessation of exposure.

Other studies confirm that coal-tar creosote is capable of inducing phototoxicity of the skin. Phototoxicity is an exaggerated response to sun exposure characterized by excessive sunburn. The usual sunburn is produced by UVB light, whereas a phototoxic skin response occurs following exposure to UVA light (Baker and Fannick 1981). Coal-tar creosote exposure was evaluated in six dock builders, all male of Scandinavian descent with fair features and an average of 16.6 years spent as pile-drivers (Baker and Fannick 1981). It was found that the dermal and ocular burning and irritation experienced by these workers upon dermal contact with wood treated with coal-tar creosote was exacerbated on hot or sunny days. Skin examinations of these dermally exposed workers revealed erythema and dry peeling skin on the face and neck with irritation and folliculitis on the forearms. These symptoms were worse on hot or sunny days, at which time red, swollen, and puffy eyes were observed. Thus, phototoxicity compounds the irritative response of the skin to coal-tar creosote. No skin tumors were observed. Exposure levels of coal-tar pitch volatiles measured were considered to represent the minimum ambient air exposure in the barge area because of unusual environmental sampling conditions. These levels ranged from below the detectable limit to 0.06 mg/m^3 for breathing zone samples and from below the detectable limit to 0.02 mg/m^3 for area samples.

Coal-tar creosote has been reported to produce other types of noncancerous skin lesions as well as burns and irritation following dermal exposure. Haldin-Davis (1935) described the case of a man employed in the activity of dipping wood in creosote tanks who received "heavy" dermal exposure to creosote (level not determined) on the face, trunk, and thighs. He subsequently developed a number of lesions on the hands, forearms, and thighs. One of these lesions was excised and examined and classified as a (benign) squamous cell papilloma.

The National Institute for Occupational Safety and Health (NIOSH) was called in to investigate potential employee-related health effects in mixers and laborers exposed to coal-tar products in a factory (Chrostek 1980). Six

of seven environmental samples collected exceeded the NIOSH Permissible Exposure Limit (PEL) for coal-tar products (cyclohexane solubles, which includes creosote) of 0.1 mg/m^3. Exposures were reported to be as high as 1.42 mg/m^3. Because environmental levels significantly exceeded the PEL, it is likely that considerable inhalation exposure occurred. One worker reported the need for medical treatment when creosote splashed in his eye, and another claimed that he was hospitalized for 3 days after experiencing convulsions following an incident where he was splashed with creosote. The medical records for these two men were not reviewed.

Skin irritation is also observed in laboratory animals following dermal exposure to creosote. Rabbits given single dermal applications of undiluted coal-tar creosote exhibited slight to moderate erythema and moderate edema followed by severe hyperkeratosis (Pfitzer and Gross 1964). These same investigators also found that instillation of 0.1 mL undiluted coal-tar creosote in the eyes of rabbits produced a redness of the conjunctiva with congested vessels that resolved within seven days (Pfitzer and Gross 1964). The effects of dermally applied coal-tar fractions, derived from creosote and anthracene oils by high-temperature boiling, were studied in mouse tail skin at concentrations of 5% and 10% (acids) in paraffin by Wrench and Britten (1975). Several of the fractions caused irritation, and some caused peeling and epidermal thickening. The authors concluded that the acids that boiled in the range from 280° to 340°C have a more specific action in inducing granular layers than the parent tars, oils, or whole acids at similar concentrations. This study is of limited value because the chemical composition of the acid fractions was not defined, and no dose levels could be quantified. It can only be concluded that certain fractions of coal-tar creosote irritate mouse skin.

Creosote also irritates other types of tissue. The effects of beechwood creosote (dose not specified) on the periapical tissue (the connective tissue surrounding the apex of the tooth) were studied in 10 teeth from 4 different dogs 7 days after its application following root canal surgery (Attalla 1968). Beechwood creosote application resulted in localized inflammatory changes and occasional abscess formation in the periapical region, presumably due to tissue damage caused by coagulation of proteins. Bone resorption was also observed in the alveolar process. The authors concluded that the beneficial disinfectant properties of creosote may be outweighed by its irritant effect following root canal surgery.

In summary, dermal application of either coal-tar or beechwood creosote results in mild-to-severe irritation of the skin, connective tissue, and eyes, as well as benign skin lesions in both humans and animals. Coal-tar creosote also induces phototoxicity, so exposure to the sun exacerbates its irritant effects. This has important implications for individuals living in areas surrounding hazardous waste sites who may come in contact with creosote-contaminated soils.

2.2.3.3 Immunological Effects

Several cases of acute allergic dermatitis have been reported following contact with creosote bush resin. Smith (1937) described the case of a patient who presented with erythematous and vesicular dermatitis of the face, the upper part of the neck, and the backs of the hands after collecting creosote bush. Patch tests confirmed the existence of an allergy to this plant. Leonforte (1986) reported six cases of acute allergic dermatitis subsequent to contact with a creosote bush and confirmed by a patch test. Two cases were a result of "casual occupations," two were a result of household remedies, and two were a result of burning the bush. Based on his findings, the author concluded that the allergens are probably contained in the plant's perfume, are volatile, and are not destroyed by heat. The relevance of these findings to individuals who live in areas surrounding hazardous waste sites and who will most likely be exposed to coal-tar creosote is questionable. Creosote bush resin differs from creosote extracted from coal and wood tar, but all contain phenolic derivatives. It is not known whether these derivatives are the allergens in creosote bush resin.

2.2.3.4 Neurological Effects

A worker who was splashed with creosote in a refinery claimed that he was hospitalized for 3 days after experiencing convulsions (Chrostek 1980). The medical records for this man were not reviewed, so it cannot be concluded that creosote exposure was responsible for his convulsions.

No studies were located regarding neurologic effects in animals following dermal exposure to creosote.

2.2.3.5 Developmental Effects

No studies were located in the literature regarding developmental effects in humans following dermal exposure to creosote.

The only available study in animals reported that dermal contact with creosote-treated wood produced fetotoxic effects in pregnant sows (Schipper 1961). Four sows were confined to wooden farrowing crates for 2-10 days before delivery. The platforms of the crates were coated with 3 brush applications of a commercial wood preservative containing 98.5% coal-tar creosote. Following this gestational exposure to creosote, 24 of the 41 pigs delivered were dead at birth, and 11 pigs died by day 3 post-farrowing. The surviving pigs had rough skin and suffered from dehydration and severe diarrhea. The pigs failed to gain weight until they were 5-6 weeks old. No toxic effects on the sows were reported. On the contrary, four sows confined to untreated lumber crates at least 24 hours before farrowing delivered 36 pigs; 1 died within 24 hours and 3 died post-farrowing. No toxic effects were noted in mothers or baby pigs. The study limitations include unequal duration of exposure between treated and untreated groups, and the lack of

statistical analysis of the reported results. Moreover, although creosote was absorbed in sufficient quantities via dermal contact by pregnant sows, the actual dose producing toxic effects in pigs cannot be determined. Therefore, neither dose-response nor NOAEL and LOAEL values for the developmental toxicity of creosote for pigs can be determined.

2.2.3.6 Reproductive Effects

No studies were located regarding reproductive effects in humans or animals following dermal exposure to creosote.

2.2.3.7 Genotoxic Effects

No studies were located regarding genotoxic effects in humans or animals following dermal exposure to creosote. The mutagenic activity of urine samples taken from workers briefly exposed to coal-tar creosote vapors in a wood preserving factory was investigated (Bos et al. 1984a, see Section 2.2.1.7, "Inhalation Exposure, Genotoxic Effects"). However, the possibility of dermal exposure by contact with residual surface creosote cannot be excluded in this study. The urine samples were negative for mutagenic activity following exposure at work. The data are not sufficient to draw a conclusion regarding the genotoxic potential of dermal contact with creosote vapors in humans, but they do suggest that extrapolation of mutagenicity tests on a single component (i.e., PAHs) may not predict the action of the mixture.

2.2.3.8 Cancer

Various case reports and the results of cross-sectional occupational surveys associate chronic occupational creosote exposure with the development of skin cancer (Cookson 1924; Henry 1947; Lenson 1956; MacKenzie 1898; O'Donovan 1920). These papers reported a similar disease etiology for different groups of workers exposed to creosote that included the development of dermatoses, such as squamous papillomas, that progressed to carcinoma, usually squamous-cell carcinoma. The latency period for the development of dermatoses, such as squamous papillomas, was usually 20-25 years (Cookson 1924; Henry 1946, 1947; O'Donovan 1920). The latency period for the development of carcinoma averaged 25 to 30 years (Cookson 1924; Henry 1946, 1947; O'Donovan 1920). Worker exposure in the past was much greater than it now is because of less-sophisticated industrial practices used in the past, the lack of knowledge concerning occupational hygiene, and the current recognition of the dangers of excessive exposure to the health of workers. Other factors that should be considered when extrapolating the findings of this older literature to present conditions are the role of exposure to ultraviolet radiation in the form of sunshine in these workers (ultraviolet radiation is now known to be a major cause of skin cancer), the composition of the creosote products, and other health factors that differ in Great Britain prior to 1940 and the present. Although these studies lack information concerning specific exposures and did not consider other risk factors for the

development of skin cancer, when taken as a group, they present convincing evidence of a relationship between chronic creosote exposure, phototoxicity, and the development of skin carcinoma in humans.

Creosote exposure has also been associated with multiple myeloma in a case/referent study of a Swedish population (Flodin et al. 1987, see Section 2.2.1.8). This relationship needs to be investigated further by more sophisticated studies.

On the other hand, several studies are available that suggest that there is no association between exposure to creosote or other coal-tar products and cancer in humans. No increased incidence of non-melanoma skin cancer was observed in 426 patients 25 years after they had undergone 4 years of coal-tar medicinal therapy in combination with ultraviolet light for the treatment of atopic dermatitis and neurodermatitis (Maugham et al. 1980). This study is limited in that follow-up occurred in only 72% of the patients, and there was no discussion of recall bias or of the effects of mobility (i.e., relocation of the study participants) on the results. In a 25-year retrospective study of 280 psoriatic patients treated with crude coal-tar in combination with ultraviolet radiation at the Mayo clinic, it was found that the incidence of skin cancer in these patients was not significantly increased above the expected incidence for the general population (Pittelkow et al. 1981). However, it should be noted that in investigations on populations using therapeutic coal-tar skin products, exposure was to a different coal tar mixture. Creosote is a lower boiling distillate fraction of crude coal-tar than the components contained in the skin products, and creosote does not contain the concentrations of putative carcinogenic PAH compounds that are present in the coal-tars contained in the skin products.

Another study was located that reported that there was no increase in the risk of skin, bladder, or lung cancer in wood treatment plant workers (Tabershaw Occupational Medicine Associates 1980). Limitations in this study include: the study population was small; the study population was comprised of 46.5% blacks who experience a very low incidence of skin cancer as compared to whites, thus biasing the results; the exposure and follow-up periods did not allow a long enough latency period for tumor development; and there was no verification provided that those studied were actually exposed to creosote or coal-tar.

A large body of evidence exists that coal-tar creosote is carcinogenic when applied to the skin of laboratory animals. Many of the early studies are limited in that they lack appropriate negative control data, the dose of creosote and the chemical composition of the fractions studied were not quantified, and no other tissues were generally examined. The results from later studies that include appropriate control groups are consistent with the earlier studies that found that creosote is carcinogenic following dermal application to rodent skin. Six representative dermal carcinogenicity studies

are reviewed below, and the relevant cancer effect levels are presented in Table 2-2.

The tumor-promoting potential of creosote was evaluated by applying various fractions (e.g., basic, phenolic, and neutral) to the skin of mice in conjunction with benzo(a)pyrene (B[a]P) (Cabot et al. 1940). The various fractions of creosote oil were prepared by distillation and separation. Ninety percent of the creosote oil distilled between 160° and 300°C. The basic fraction was removed with aqueous hydrochloric acid. The phenolic fraction was removed with aqueous sodium hydroxide. The remaining neutral fraction was then steam distilled. The composition of the various fractions was not specified. Four of the test solutions antagonized the tumorigenic effects of B[a]P, but in three instances this antagonistic effect was considered to be secondary to skin damage. Only the phenolic fraction seemed to exhibit a primary antagonistic effect. Three fractions (basic, neutral, and neutral distillate) exhibited apparent promoting effects.

The potential of basic fractions of creosote to accelerate tumor induction by known carcinogens was evaluated by Sall and Shear (1940). A 1% solution of the basic fraction of creosote oil in benzene was dermally applied to female strain A mice alone or in conjunction with 0.05% or 0.02% B[a]P. The basic fraction alone did not induce skin tumors, but when applied in conjunction with either concentration of B[a]P, skin tumors appeared more rapidly than when B[a]P alone was applied. Maximum tumor induction was seen between 28 and 42 weeks; 19 or 20 mice developed tumors. The composition of the basic fraction was not specified, but it is reported to be noncarcinogenic.

The ability of creosote to induce lung tumors after dermal application to mice was studied when it was observed that mice housed in creosote-treated wooden cages had a high incidence of lung tumors (Roe et al. 1958). Dermally applied creosote (0.25 mL undiluted twice weekly for 8 months) induced 5.8 lung adenomas/mouse in mice that were reared in stainless steel cages. Creosote treatment following the same regimen in mice reared in creosote-treated cages induced 10.8 lung adenomas/mouse. Untreated controls reared in untreated cages exhibited 0.5 lung adenomas/mouse. A high incidence of skin tumors was also observed in the creosote-treated mice reared in either type of cage. In a second experiment, topical application of "one drop" of creosote twice a week for only 4 weeks induced lung adenomas but not skin tumors in mice reared in stainless steel cages. This study demonstrated that creosote induces tumors in the lungs and skin of mice when dermally applied. Rearing animals in creosote-treated wooden cages exacerbated the tumorigenic effect of dermally applied creosote. Based on this study, lung tumors may be a more sensitive end point of creosote tumorigenic activity than skin tumors.

Seven groups of thirty female albino mice each were treated with dimethylbenzanthracene (DMBA) and creosote (0.25 mL of undiluted creosote oil), alone and combinations of the two to evaluate the carcinogenic,

initiating, and promoting activity of creosote on mouse skin (Boutwell and Bosch 1958). Creosote alone, DMBA and creosote, and creosote with croton oil all induced the development of papillomas and carcinomas. Tumors first appeared at 10-20 weeks of application. DMBA pretreatment shortened the latent period and increased the tumor yield of creosote treatment, but since almost a nearly maximal tumor induction response (i.e., percent of mice with papillomas was just below 100) was seen with creosote alone, tumor-promoting activity of creosote could not be definitely proven. The initiating activity of creosote was demonstrated by its ability to induce tumors when applied prior to croton oil treatment (croton oil alone was without effect). Creosote alone or in combination with DMBA or croton oil induced papilloma formation more slowly, and carcinomas appeared by 14 weeks and accumulated more rapidly than in the DMBA plus croton oil group. Thus, this study demonstrated the carcinogenic and tumor-initiating activity of creosote on mouse skin.

The complete carcinogenic and tumor-promoting activity of undiluted creosote, a 10% solution of creosote oil, and 2% solution of the basic fraction of creosote was studied when dermally applied to mice (Lijinsky et al. 1957). Undiluted creosote alone induced 23 skin tumors (16 malignant) in 13 of 26 treated mice with a latent period of 50 weeks. The authors concluded that creosote alone has a carcinogenic activity comparable to a 0.01% solution of dimethylbenzanthracene (DMBA). When applied as a promoter following a single application of DMBA, 32 skin tumors (26 malignant) were observed in 17 of 30 mice with a latent period of 39 weeks. The basic fraction did not act as a tumor promoter when administered after a single application of DMBA. Thus, creosote appeared to enhance the carcinogenic activity of DMBA, but the promoting effect was not strong, when the results were compared to DMBA positive controls.

The carcinogenic activity of two high-temperature-derived creosote oils ("light" and "blended") was studied by Poel and Kammer (1957). The principal components of light oil are benzene, toluene, xylene and solvent naphtha. Blended oil is a mixture of creosote oil, anthracene oil and the oil drained from the naphthalene recovery operation. Its principal components are methylated naphthalenes, acenaphthene, fluorene, phenanthrene, anthracene and carbazole. The oils were applied by drops to the skin of mice at concentrations of 20%, 50%, or 80% three times a week for life. Both oils induced skin tumors in every exposed mouse by 21 to 26 weeks of application. Several mice exhibited metastases to the lungs or regional lymph nodes. The fractions tested did not contain B[a]P, so the authors concluded that the carcinogenic activity of creosote was not due to B[a]P.

In conclusion, the results of these studies indicate that coal-tar creosote and several of its fractions are carcinogenic when applied to the skin of mice. Dermally applied creosote can also act as a tumor-initiating agent when applied prior to croton oil treatment and can enhance and accelerate tumor induction by B[a]P. Thus, it is likely that individuals whose skin comes into contact chronically with creosote would be at higher

risk for cancer, particularly when exposure to other carcinogenic substances also occurs, as is a likely scenario in areas surrounding hazardous waste sites.

2.3 TOXICOKINETICS

Specific information regarding the toxicokinetics of creosote is limited. Several compounds have been detected in creosote, yet there are no definitive data on which of these compounds people are exposed to in wood-treatment plants or at hazardous waste sites. Analyses have revealed that PAHs are the major components of the creosote mixture (EPA 1981a). Hence, pharmacokinetic studies on PAHs can be used as surrogates for creosote. However, this is only speculative given the possible toxicokinetic interactions that occur among the PAHs and other components in the creosote mixture, and will be used only when data on creosote are not available. For more information on the toxicokinetics of PAHs, please refer to the ATSDR Toxicological Profile for Polycyclic Aromatic Hydrocarbons (ATSDR 1990).

2.3.1 Absorption

2.3.1.1 Inhalation Exposure

No studies were located in humans or animals regarding the direct analysis of the extent or rate of creosote absorption following inhalation exposure. However, there is evidence to suggest that inhalation absorption occurs. Employees of a creosote-impregnating plant excreted 1-hydroxypyrene, a metabolite of the creosote component, pyrene, in their urine (Jongeneelen et al. 1985). The presence of this metabolite in the urine suggested that creosote components were absorbed and metabolized following inhalation exposure. However, it is also possible that some dermal exposure may have occurred as well.

PAHs extracted from coal fly ash were intratracheally administered to pregnant rats at a dose of 20 mg/kg. The presence of the PAHs in the maternal and fetal lungs and livers indicated that pulmonary absorption occurred (Srivastava et al. 1986).

2.3.1.2 Oral Exposure

No studies were located in humans and animals regarding the direct analysis of the extent or rate of creosote absorption following oral exposure. However, the presence of creosote metabolites in the urine of humans and rabbits receiving calcium creosotate (a calcium salt of creosote) tablets was evidence that creosote was absorbed following ingestion (Fellows 1937, 1939b). Furthermore, evidence exists that certain PAHs found in creosote such as anthracene (Rahman et al. 1986), benzo(a)pyrene (Hecht et al. 1979; Rahman et al. 1986; Rees et al. 1971; Yamazaki et al. 1987), chrysene (Chang 1943;

Modica et al. 1983), and phenanthrene (Rahman et al. 1986) are absorbed following oral administration in animals.

2.3.1.3 Dermal Exposure

No studies were located in humans and animals regarding the direct analysis of the extent or rate of creosote absorption following dermal exposure. However, reports of workers who developed cancer subsequent to dermal exposure suggested that creosote was absorbed through the skin (Cookson 1924; Henry 1946, 1947; Lenson 1956). It can also be concluded that dermal absorption occurred as evidenced by the development of skin tumors (Boutwell and Bosch 1958; Lijinsky et al. 1957; Poel and Kammer 1957; Roe et al. 1958) and lung tumors (Roe et al. 1958) in mice following the dermal application of creosote. Based on these occupational exposures and animal toxicity studies, it would appear that dermal absorption of creosote occurs.

2.3.2 Distribution

2.3.2.1 Inhalation Exposure

No studies were located in humans or animals regarding the distribution of the creosote mixture following inhalation exposure. However, an occupational study indicated that creosote is absorbed and metabolized as evidenced by the appearance of 1-hydroxypyrene (a metabolite of pyrene, a component of creosote) following inhalation exposure (Jongeneelen et al. 1985). Because creosote is composed of hydrocarbons, creosote is likely to distribute to lipid-rich tissues. Creosote is also likely to distribute to the liver as evidenced by the presence of metabolites in the urine.

When [^{3}H]-benzo[a]pyrene was administered intratracheally to rats at a dose of 0.001 mg/kg, radioactivity was distributed to all tissues. During the 6 hours following administration, more than 20% of the dose was detected in the carcass. The activity steadily increased in the intestine and the intestinal contents over the 6 hours. Levels of activity in the liver and lung were moderate and declined over time. Trace amounts of activity were detected in other tissues (Weyand and Bevan 1987).

Intratracheal administration of [^{3}H]-benzo[a]pyrene along with the benzene extract of coal fly ash to pregnant rats (20 mg/kg/day) on days 18 and 19 of gestation resulted in their distribution to the maternal lung and liver. The amount of radioactivity found in the maternal liver was approximately 68% of the amount of radioactivity found in the maternal lung. The amount of radioactivity found in the placenta, fetal lung, and fetal liver was approximately 4%, 1.9%, and 1.4%, respectively, of the amount of radioactivity found in the maternal lung (Srivastava et al. 1986). Much of the radioactivity was attributable to metabolites. These results suggest that components of creosote and their metabolites can pass through the placenta and distribute to fetal tissue.

2.3.2.2 Oral Exposure

No studies were located in humans or animals regarding the distribution of creosote following ingestion. Based on chemical structure, it is likely that PAHs would have a strong affinity for adipose tissue. Benz[a]anthracene, chrysene, and triphenylene distributed to all tissues following oral administration (22.8 mg/kg) to female rats, but its greatest distribution was to adipose tissue. In this study, benz[a]anthracene concentrations in adipose were 10 times higher than in other tissues (Bartosek et al. 1984).

The distribution of nonmetabolized PAHs is dependent on their water-solubility. The more water-soluble PAHs, like triphenylene, are generally more available to tissues other than fat (Bartosek et al. 1984). In humans, distribution of creosote following ingestion is likely to be qualitatively similar to that seen in the animal studies. The lipophilicity of PAHs allows the chemicals to be readily absorbed and preferentially accumulated in fatty tissues. Furthermore, PAHs are likely to be present in adipose and highly perfused organs such as the lungs and liver.

2.3.2.3 Dermal Exposure

No studies were located in humans or animals regarding the distribution of creosote following dermal exposure. Distribution of creosote in humans following dermal exposure is expected to be qualitatively similar to that seen in animals or in humans following any route of exposure.

2.3.3 Metabolism

Generally, the PAH components of creosote are metabolized by oxidative enzymes to generate active metabolites that can bind to macromolecules. The metabolic profiles vary among species and compounds, but the components follow the same reaction pathways. Hence, the metabolites are structurally very similar. The proposed metabolic scheme for a representative PAH, benzo(a)pyrene is presented in Figure 2-2. The principal products include phenols, dihydrodiols, quinones, anhydrides and conjugates of these products (Autrup and Seremet 1986; Dahl et al. 1985; Geddie et al. 1987; Hopkins et al. 1962; Jongeneelen et al. 1985; Petridou-Fischer et al. 1988; Povey et al. 1987; Rice et al. 1986; Weyand and Bevan 1987).

2.3.3.1 Inhalation Exposure

Workers in a creosote-impregnating plant were exposed to creosote by inhalation. The creosote that these employees inhaled contained 19.8 mg pyrene/g creosote (approximately 2%). A metabolite of pyrene, 1-hydroxypyrene, was detected in their urine at levels that were above the mean values of controls (Jongeneelen et al. 1985). The identification of PAH metabolites in the urine could serve as a method of biological monitoring of

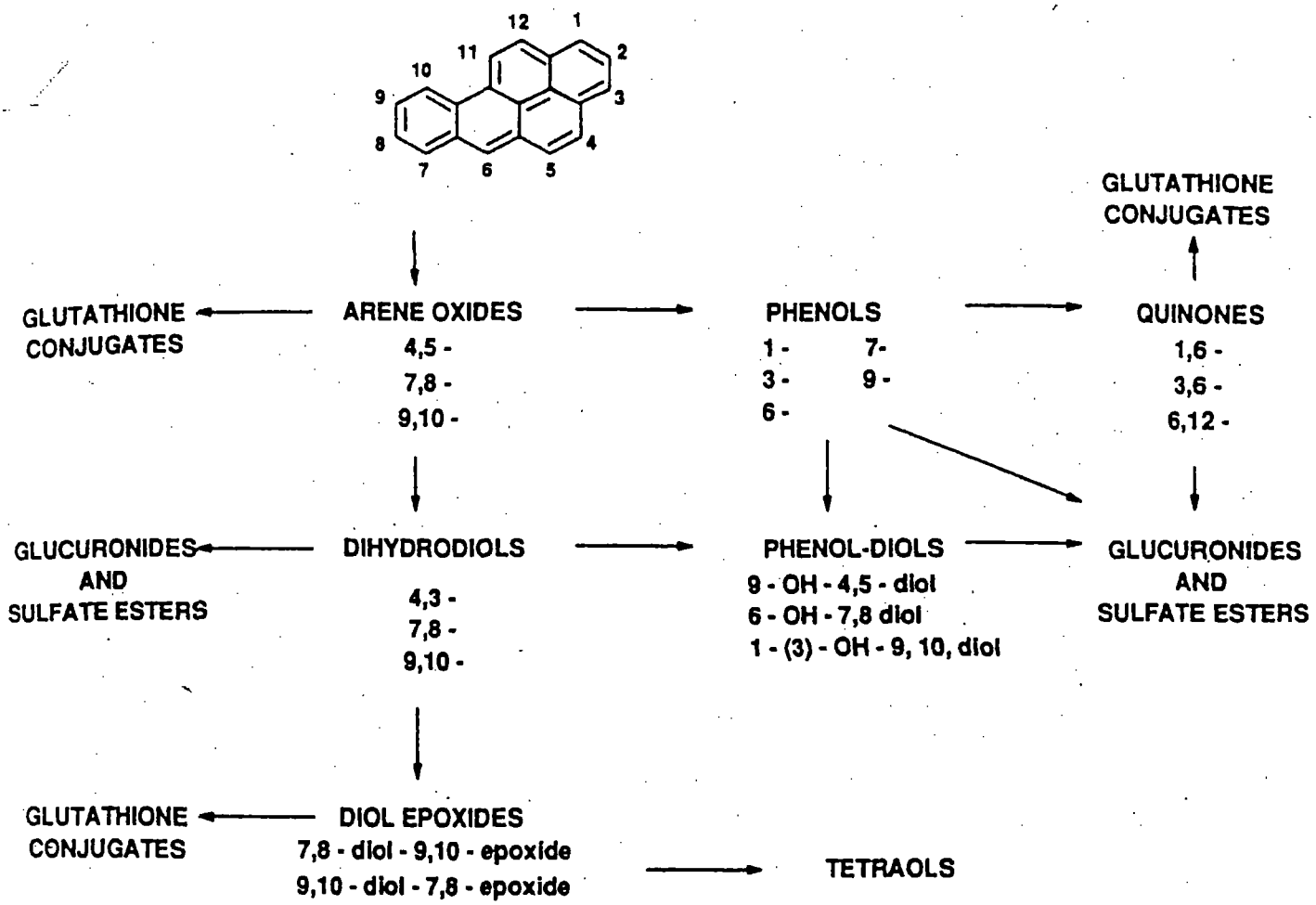

FIGURE 2-2. Proposed Metabolic Scheme for Benzo(a)pyrene

exposed workers, and possibly individuals living in the vicinity of hazardous waste sites where creosote has been detected.

2.3.3.2 Oral Exposure

Calcium creosotate was orally administered to humans at daily doses of 7-30 mg/kg for 3 days. Calcium creosotate phenols were excreted in the urine. Also, large unspecified doses of calcium creosotate were orally administered to rabbits. Analysis of the rabbit urine revealed that free and conjugated phenols were excreted (Fellows 1939b).

Rats receiving a single dose of either 0.0002, 0.002, 0.02, 0.2, or 2.0 mg pyrene/kg by gavage in olive oil excreted 1-hydroxypyrene in the urine in a dose-dependent manner. This metabolite could be detected up 96 hours after administration. No pyrene was excreted (Jongeneelen et al. 1985).

It is evident in both human and animal studies that hydroxylation is a principal oxidative pathway of PAH metabolism, and consequently, creosote metabolism. In these studies, there were no discussions to suggest that the researchers attempted to identify other metabolites.

2.3.3.3 Dermal Exposure

Two patients suffering from eczema on the arms and legs were treated for several days with an ointment containing 10% pix lithanthracis dermata (coal-tar). The daily dermal dose was approximately 1 mg/kg. Analysis of the urine samples collected from these patients prior to treatment and in the morning and evening of the first three days of treatment showed that 1-hydroxypyrene (a metabolite of pyrene which is a PAH component of coal-tar) was excreted at levels 200 times that which was detected before the treatment started (Jongeneelen et al. 1985). Thus, based on these results, it appears that PAH components of coal-tar creosote are metabolized following dermal exposure in humans.

2.3.4 Excretion

Excretion of the PAH compounds of creosote is controlled by their rate of metabolism. Excretion of these metabolites or any remaining parent compound is primarily in the bile and the feces. Weyand and Bevan (1987) demonstrated this by cannulating the bile ducts of rats that received [^{3}H]-benzo[a]pyrene intratracheally. Those rats with the biliary cannulas had significantly lower levels of activity in their intestines, intestinal contents and stomach than rats without biliary cannulas. Sanders et al. (1986) showed that PAHs were primarily removed in the feces after dermal administration of [^{14}C]-benzo[a]pyrene and [^{14}C]-7,12-dimethylbenz[a]-anthracene, suggesting hepatobiliary excretion. Urinary excretion also occurs, but to a lesser extent than the other routes.

2.3.4.1 Inhalation Exposure

No studies were located in humans or animals regarding the excretion of creosote following inhalation exposure.

2.3.4.2 Oral Exposure

No studies were located in humans or animals regarding the excretion of creosote following oral exposure.

2.3.4.3 Dermal Exposure

No studies were located in humans or animals regarding the excretion of creosote following dermal exposure.

2.4 RELEVANCE TO PUBLIC HEALTH

Creosote is a complex mixture of organic substances. It can be derived by distillation from coal (coal-tar creosote) or wood (beechwood creosote). Another form is a resin from the leaves of the creosote bush. The chemical composition of creosote varies considerably depending on the source of the coal, wood, or plant and the design and attendant operating conditions (temperature, gas distillation systems, etc.) used to produce the creosote. Coal-tar creosote is reported to contain over 300 compounds (EPA 1978), the major components of which are PAHs, tar acids (phenol, cresols and xylenols), and tar bases (pyridine and lutidine derivatives). Coal-tar creosote is used primarily as a wood preservative. Beechwood creosote consists mainly of phenol, cresol, guaiacol, xylenol and creosol. It has been used therapeutically as an expectorant and a disinfectant. Creosote bush resin consists of phenolics (which account for 83-91% of the total resin), neutrals (e.g., waxes), basics (e.g., alkaloids), and acidics (e.g., phenolic acids). Given the current widespread use of coal-tar creosote as a wood preservative and its past pesticidal applications, it is the form of creosote most likely to be present at hazardous waste sites.

There is relatively little information available regarding the systemic effects of ingested creosote. However, oral exposure via ingestion of contaminated drinking water is most likely not a highly significant route of exposure to creosote at hazardous waste sites, given its low solubility in water. Most of the available recent information on the adverse effects of ingested creosote in both humans and animals is on beechwood creosote. These studies indicate that the liver, kidney, central nervous system, and cardiovascular system may be adversely affected by beechwood creosote following primarily acute exposure, although the mechanism of action for these effects is not known. The relevance of these findings in animals with exposure to beechwood creosote to humans exposed to coal-tar creosote is not known. Although the two forms of creosote contain some components in common

(e.g., phenolic derivatives) it is not known whether the toxic effects observed after exposure to beechwood creosote can be attributed to the phenol components and thus, extrapolated to coal-tar creosote. Coal-tar creosote exerts its acute toxic effects primarily via dermal exposure, causing architectural damage to the tissues that it comes in contact with, such as the skin and eyes. Acute ingestion of coal-tar creosote appears to affect primarily the kidney and liver. The mechanism of action for coal-tar creosote-induced toxicity is not defined, but is most likely due to the activity of the PAH components.

Much of the information available on the health effects of coal-tar creosote must be inferred from experimental animal and in vitro data on the components of the creosote mixture (i.e., PAHs). Extrapolation of these results to possible human health effects following exposure to creosote must consider the possible interactions of the mixture, such as co-carcinogenicity, co-mutagenicity, additivity, promotion, and antagonism. The extent to which these interactions modify the expression of creosote toxicity in humans is not known.

Death. No information was available on the lethal effects of creosote following inhalation or dermal exposure in humans. No deaths were observed in rats exposed to near saturated vapors of coal-tar creosote for one hour (concentration estimated to be less than 0.033 mL/L) (Pfitzer and Gross 1964). The exposed animals showed signs of slight eye and nose irritation and slight dyspnea. All rats exhibited weight gains comparable to the control animals and there were no treatment-related lesions observed at necropsy. The dermal LD_{50} in rabbits has been estimated to be greater than 7.95 g/kg (Pfitzer and Gross 1964).

Ingestion of creosote can be fatal to both humans and animals. In the case reported by Bowman et al. (1984), death following ingestion of creosote (form and quantity not specified) was attributed to multi-organ failure. Death has been reported to occur in adults and children 14 to 36 hours after the ingestion of about 7 g or 1-2 g creosote, respectively (Clayton and Clayton 1981). The latter anecdotal information is of limited value because it was obtained from a secondary source that provided no supporting documentation. The oral LD_{50} for coal-tar creosote is reported to be 433 mg/kg in the mouse and 725 mg/kg in the rat (RTECS 1988). However, another study reported an acute oral LD_{50} of 1700 mg/kg in the rat (Pfitzer and Gross 1964). The reasons for this discrepancy in LD_{50} values are not known. Based on these data, coal-tar creosote can be classified as mildly to moderately toxic. Beechwood creosote is lethal to animals, although the doses required to produce death are relatively high (300-525 mg/kg). Death is preceded by signs of central nervous system intoxication following acute exposure in both humans and animals. Given the relatively high oral doses required to cause death following acute exposure in both humans and animals, individuals living

in areas surrounding hazardous waste sites contaminated with creosote may not be at high risk for death due to acute ingestion of creosote.

Systemic Effects. A slightly higher incidence of bronchitis or thickening of the tracheal mucous membrane was observed in mice fed beechwood creosote for 52 weeks. This effect was considered secondary to irritation resulting from long-term inhalation exposure to volatile (but unidentified) components of creosote in the feed. No toxic respiratory effects have been reported following coal-tar creosote exposure in either humans or animals. The airborne component chemicals in coal-tar creosote have not been well defined. However, based on the results discussed above, it can be assumed that some components of beechwood creosote, that may be common to coal-tar creosote are irritating to the respiratory tract.

A report was found in the older literature that described the case of a woman who experienced hypertension attributed to creosote exposure by "self-medication" for chronic bronchitis (Robinson 1938). Cardiovascular collapse has also been reported to occur following the ingestion of lethal doses of coal-tar creosote in humans (Clayton and Clayton 1981). These cases are anecdotal and occur in isolated instances. There is often a lack of exposure data, and the possibility of confounding factors limit the usefulness of these findings. Furthermore, adverse creosote-induced cardiovascular effects have not been reported in animals. Thus, it is not likely that the cardiovascular system is a major target organ of toxicity from creosote exposure.

Ulceration of the oropharynx and petechial hemorrhages over the gastrointestinal serosal surfaces were noted at autopsy in the case of a 70-year-old man who died following the ingestion of "industrial" creosote (Bowman et al. 1984). This acute tissue damage was attributed to a corrosive action of phenol (a component of creosote) via its ability to denature and precipitate proteins. Animals that died following the administration of single gavage doses of coal-tar creosote in an acute range-finding study (doses ranged from 2.52-5.00 mg/kg) exhibited hyperemia and distention of the stomach upon necropsy. Similarly, rabbits that died following single dermal applications of undiluted coal-tar creosote exhibited hyperemia of the intestines (Pfitzer and Gross 1964). The toxicological significance of these changes is not known. Thus, given that gastrointestinal lesions were observed in only one isolated instance in humans, and the fact that only mild creosote-induced gastrointestinal effects of unknown toxicological significance have been reported in animals, it is likely that the gastrointestinal system is a target organ of toxicity only after the ingestion of relatively high doses of creosote.

Various hematological and clinical chemistry parameters have been observed to be altered by dietary exposure to beechwood creosote in rats and mice (Miyazato et al. 1981, 1984a,b). The only effect considered to be treatment-related by the authors was an increase in serum cholesterol in both

rats and mice. The toxicological significance of this change is not known, particularly with regard to individuals exposed to coal-tar creosote in areas surrounding hazardous waste sites. No adverse hematological effects have been reported in humans exposed to creosote.

Degeneration and necrosis of hepatocytes were observed at autopsy in the case reported by Bowman et al. (1984). Given the advanced age of this man, the possibility of confounding factors, and the lack of comparison data, it is not possible to definitively attribute these effects to creosote ingestion. Dietary exposure to beechwood creosote induces changes suggestive of liver injury in rats and mice (increase relative liver weights and increased liver enzymes). However, no treatment-related changes were observed at histological evaluation (Miyazato et al. 1981, 1984a,b), and the toxicological significance of these changes with regard to individuals exposed to coal-tar creosote in areas surrounding hazardous waste sites is not known.

Observations made in both humans and animals suggest that creosote has the potential to induce adverse effects in the kidney. Prior to death, the patient described by Bowman et al. (1984) became acidotic and anuric, indicating kidney failure. Acute renal tubular necrosis was revealed at necropsy. However, the acute tubular necrosis may have been due to vascular insufficiency rather than a direct toxic effect on the kidney. Male rats chronically exposed to beechwood creosote in the diet exhibited an exacerbation of the spontaneously occurring chronic nephrosis normally seen in aging male rats (Miyazato et al. 1984b). Thus, the kidney may be adversely affected by both acute high-level exposure (e.g., following an accidental spill) to coal-tar creosote and chronic low-level exposure to beechwood creosote.

Burns, irritation and benign lesions of the skin (e.g., squamous papillomas), and conjunctivitis of the eyes are the most frequent manifestations of coal-tar creosote toxicity following dermal exposure in both humans and animals. These effects consist of mild-to-severe erythema, intense burning, itching, and subsequent pigmentation followed by desquamation. Involvement of the skin, connective tissue, and eye are often seen. Creosote is also capable of inducing phototoxicity of the skin, so exposure to sun exacerbates its irritant effects. This has important implications for individuals living in areas surrounding hazardous waste sites who may come in contact with creosote-contaminated soils.

Immunological Effects. No adverse immunologic effects have been reported in either humans or animals following exposure to coal-tar or beechwood creosote. Several cases of acute allergic dermatitis have been reported following contact with creosote bush resin. The relevance of these findings to individuals who live in areas surrounding hazardous waste sites and will most likely be exposed to coal-tar creosote is not known. Creosote bush resin differs from creosote extracted from coal and wood tar, but all

contain phenolic derivatives. It is not known whether these derivatives are the allergens in creosote bush resin.

Neurological Effects. Adverse neurologic effects have been reported in both humans and animals following the acute ingestion of high doses of coal-tar or beechwood creosote. Such effects include salivation, vomiting, respiratory distress, thready pulse, vertigo, headache, loss of pupillary reflexes, hypothermia, cyanosis, muscle twitching, and convulsions. These observations suggest that creosote may be a general central nervous system stimulant following acute high-level exposure. However, the possibility exists that some of the effects observed in animals that licked treated utility poles may have been due to ingestion of pentachlorophenol. Pentachlorophenol, like creosote, is an oil-borne wood preservative with extensive use in the public utility industry for treatment of utility poles. The neurotoxic effects observed in cattle that licked treated utility poles are more compatible with the metabolic effects (i.e., uncoupling of phosphorylative oxidation) associated with pentachlorophenol (for more information on the effects of pentachlorophenol, please refer to the ATSDR Toxicological Profile for Pentachlorophenol, ATSDR 1989a). Thus, it is not possible to determine conclusively whether creosote is toxic to the central nervous system of animals based on this report. However, no information was found to suggest that chronic low-level exposure to creosote by individuals in areas surrounding hazardous waste sites would result in neurotoxicity.

Developmental and Reproductive Effects. The only available study in animals reported that dermal exposure to creosote-treated wood produced fetotoxic effects in pregnant sows (Schipper 1961). This study was severely limited by lack of exposure data, unequal duration of exposure between treated and untreated groups, and the lack of statistical analysis of the results. No information on adverse developmental or reproductive effects in humans following exposure to coal-tar creosote was found. An increase in relative testis weight was observed in rats administered beechwood creosote in the diet for 3 months (Miyazato et al. 1981). There were no accompanying gross or histopathological lesions of the testes in these animals, so the toxicological significance of this change is not known. Based on these limited data, it is not possible to ascertain the developmental or reproductive risk to humans of exposure to creosote.

Genotoxic Effects. The genotoxic potential of coal-tar creosote has been investigated using exclusively *in vitro* assays (Bos et al. 1984a,b, 1985, 1987; Mitchell and Tajiri 1978; Simmon and Shepherd 1978). Results of these studies are summarized in Table 2-3. The available genotoxicity data indicate that creosote is an indirect mutagen (i.e., requiring the presence of an exogenous mammalian metabolic system) and induces gene mutation in bacteria and mouse lymphoma cells. The mutagenicity of creosote observed in the conventional *S. typhimurium* assay is at least partially contributed to by the

TABLE 2-3. Genotoxicity of Creosote *In Vitro*

End Point	Species (Test System)	Result: With Activation	Result: Without Activation	Reference
Prokaryotic organisms:				
Gene mutation	*Salmonella typhimurium* (histidine auxotrophs)	+	-	Simmon and Shepherd 1978[a]
	S. typhimurium	+	-	Bos et al. 1985, 1987
		+	No data	Bos et al. 1984b
	S. typhimurium (taped-plate assay; vapor exposure)	+	-	Bos et al. 1985, 1987
	Escherichia coli WP2(TK+/-), (tryptophan auxotroph)	-	-	Simmon and Shepherd 1978[a]
Mammalian cells:				
Gene mutation	Mouse lymphoma cells	+	-	Mitchell and Tajiri 1978
Mammalian body fluids:				
Gene mutation	*S. typhimurium* (rat urine sample)	+	No data	Bos et al. 1984a
	S. typhimurium (human urine sample; occupational exposure)	-	No data	Bos et al. 1984a

[a]*S. typhimurium* strains TA1537, TA98 and TA100 showed increases in frameshift mutation; strain TA1535 and *E. coli* straub WP2 showed no increase in base-pair substitutions. Creosote P1 is a creosote mixture American Wood Preserver's Association (AWPA) specification P-1 product used for foundation piles, freshwater piles, telephone poles, utility poles, fence posts, and other land and fresh-water uses.

+ = positive result; - = negative result

PAHs such as B[a]P and benzanthracene (Bos et al. 1984b). More recently Bos et al. (1987) identified fluoranthene as one of the major volatile components of creosote responsible for the genotoxicity observed in S. typhimurium strains.

In a wood-preserving factory, spot samples collected from the contaminated surfaces including that of creosote-treated wood showed mutagenic activity in S. typhimurium strains TA98 and TA100 (Bos et al. 1984a). Despite the contamination of the work area, no increase in mutagenic activity was detected in the urine samples of workers who inhaled creosote vapors and possibly had skin contact with the residual surface creosote. This negative mutagenic response was probably a result of a low level of creosote exposure or the fact that the components present in the workers' urine were not mutagenic (Bos et al. 1984a). In the same study, mutagenic activity was detected in the urine samples of rats injected intraperitoneally with 25 mg/kg creosote in olive oil.

Coal-tar creosote (type P1[1]) was mutagenic in the mouse lymphoma assay (Mitchell and Tajiri 1978). A dose-related increase in the number of forward mutations was observed in L5178Y mouse lymphoma cells following metabolic activation. Simmon and Shepherd (1978) found that creosote (type P1) produced a mutagenic dose-response and a doubling above background mutation rate in S. typhimurium strains TA1537, TA98 and TA100. S. typhimurium strain TA1535 and Escherichia coli WP2 strain did not demonstrate a positive response with metabolic activation. These results indicate that the genetic mode of action of creosote in S. typhimurium is by frameshift mutation. In recent studies Bos et al. (1984b) examined the mutagenic potential of several fractions of creosote (type P1) in strains TA98 and TA1537. The mutagenicity of creosote was found to be associated at least partially with PAHs (B[a]P and benzanthracene) which were detected in concentrations of 0.18% and 1.1%, respectively (Bos et al. 1983, 1984b). Both compounds, although mutagenic in conventional Ames assay, showed no activity in a S. typhimurium taped-plate assay, probably because of their low volatility (Bos et al. 1985). When creosote samples were further tested for the presence of "volatile mutagens," vapors escaping from creosote increased the number of revertants per plate in the presence of exogenous mammalian metabolic activation system (S9 mix) (Bos et al. 1985). Results of the study suggest that the volatile components of creosote may also contribute to the genotoxic risk from occupational exposure to creosote. In a recent study, Bos et al. (1987) found that creosote contained mutagens which were volatile at 37°C. These were present in the

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[1]Creosote is classified according to a set of standards regarding physical property specifications for creosote that must be met for certain uses of creosote. These specifications are presented in Table 3-4. Type P1/P13 creosote is straight creosote distillate and is used in ground contact, land, and fresh and marine water applications. Type P2 creosote is used by the railroad industry in the treatment of railroad crossties.

distillation fraction having the highest boiling range (more than 360·C). Upon further high-pressure liquid chromatography (HPLC) and ultraviolet spectroscopic analysis of the fraction and mutagenicity tests, the mutagenic response observed was correlated with the presence of fluoranthene (5.2%) in the creosote samples. The commercially available fluoranthene also tested positive in the taped-plate assay. The available genotoxicity data suggest that creosote has a potential to induce gene mutation in humans exposed via inhalation, and perhaps other routes as well, at hazardous waste sites. However, much of the data discussed above describes the mutagenic activity of selected PAHs. It is not yet known how the various PAHs contained in the coal-tar creosote mixture interact, and what the effects of these possible interactions are on the ultimate genotoxic expression of the mixture.

Cancer. Various case reports and the results of cross-sectional occupational surveys associate chronic occupational creosote exposure with the development of skin cancer (Cookson 1924; Henry 1946, 1947; Lenson 1956; O'Donovan 1920). These papers reported a similar disease etiology for different groups of workers exposed to creosote that included the development of dermatoses, such as squamous papillomas, that progressed to carcinoma, usually squamous-cell carcinoma. The latency period for the development of dermatoses, such as squamous-papillomas, was usually 20-25 years (Cookson 1924; Henry 1946, 1947; O'Donovan 1920). The latency period for the development of carcinoma was on average 25 to 30 years (Cookson 1924; Henry 1946, 1947; O'Donovan 1920). Worker exposure in the past was much greater than it now is because of less-sophisticated industrial practices used in the past, the lack of knowledge concerning occupational hygiene, and the current recognition of the dangers of excessive exposure to the health of workers. Other factors that should be considered when extrapolating the findings of this older literature to present conditions are the role of exposure to ultraviolet radiation in the form of sunshine in these workers (ultraviolet radiation is now known to be a major cause of skin cancer), the composition of the creosote products, and other health factors that differ in Great Britain prior to 1940 and the present. Although these studies lack information concerning specific exposures and did not consider other risk factors for the development of skin cancer, when taken as a group, and in view of the presence of carcinogenic PAHs, they present convincing evidence of a relationship between chronic creosote exposure and the development of skin carcinoma in humans.

On the other hand, several studies are available that suggest that there is no association between exposure to creosote or other coal-tar products and cancer in humans. No increased incidence of non-melanoma skin cancer was observed in 426 patients 25 years after they had undergone 4 years of coal-tar medicinal therapy in combination with ultraviolet light for the treatment of atopic dermatitis and neurodermatitis (Maugham et al. 1980). This study is limited in that follow-up occurred in only 72% of the patients, and there was no discussion of recall bias or of the effects of mobility (i.e. relocation of

the study participants) on the results. In a 25-year retrospective study of 280 psoriatic patients treated with crude coal-tar in combination with ultraviolet radiation at the Mayo clinic, it was found that the incidence of skin cancer in these patients was not significantly increased above the expected incidence for the general population (Pittelkow et al. 1981). In investigations on populations using therapeutic coal-tar skin products, exposure was to a different coal tar mixture. Creosote is a lower boiling distillate fraction of crude coal-tar than the components contained in the skin products, and does not contain the concentrations of putative carcinogenic PAH compounds that are present in the tars (Wright et al. 1985).

Another study was located that reported that there was no increase in the risk of skin, bladder, or lung cancer in wood treatment plant workers (Tabershaw Occupational Medicine Associates 1980). Limitations in this study include: the study population was small; the study population was comprised of 46.5% blacks who experience a very low incidence of skin cancer as compared to whites, thus biasing the results; the exposure and follow-up periods did not allow a long enough latency period for tumor development; and there was no verification provided that those studied were actually exposed to creosote or coal-tar. However, it is possible that because black people are less sensitive to ultraviolet light-induced cancer, their prominence in this study might serve to help isolate the effects of creosote alone from those of ultraviolet light or ultraviolet light plus creosote.

A large body of evidence exists indicating that coal-tar creosote and several of its fractions are carcinogenic when applied to the skin of laboratory animals. Many of the early studies that reported that coal-tar creosote is carcinogenic when dermally applied to rodent skin are limited in that they lack appropriate negative control data, the dose of creosote and the chemical composition of the fractions studied were not quantified, and no other tissues were examined. The results from later studies that include appropriate control groups are consistent with the findings of the earlier studies. Dermally applied creosote can also act as a tumor-initiating agent when applied prior to croton oil treatment, and can enhance and accelerate tumor induction by B[a]P. IARC (1985) has classified creosote as a Group 2A, probable human carcinogen based on limited human evidence and sufficient animal evidence of carcinogenicity. Thus, based on the human and animal data summarized above, it is possible that individuals who chronically come in skin contact with creosote may be at an elevated risk for developing skin cancer, particularly when exposure to other carcinogenic substances occurs, as is a likely scenario in areas surrounding hazardous waste sites.

2.5 BIOMARKERS OF EXPOSURE AND EFFECT

Biomarkers are broadly defined as indicators signaling events in biologic systems or samples. They have been classified as markers of exposure, markers of effect, and markers of susceptibility (NAS/NRC 1989).

2. HEALTH EFFECTS

A biomarker of exposure is a xenobiotic substance or its metabolite(s) or the product of an interaction between a xenobiotic agent and some target molecule or cell that is measured within a compartment of an organism (NAS/NRC 1989). The preferred biomarkers of exposure are generally the substance itself or substance-specific metabolites in readily obtainable body fluid or excreta. However, several factors can confound the use and interpretation of biomarkers of exposure. The body burden of a substance may be the result of exposures from more than one source. The substance being measured may be a metabolite of another xenobiotic substance (e.g., high urinary levels of phenol can result from exposure to several different aromatic compounds). Depending on the properties of the substance (e.g., biologic half-life) and environmental conditions (e.g., duration and route of exposure), the substance and all of its metabolites may have left the body by the time biologic samples can be taken. It may be difficult to identify individuals exposed to hazardous substances that are commonly found in body tissues and fluids (e.g., essential mineral nutrients such as copper, zinc, and selenium). Biomarkers of exposure to creosote are discussed in Section 2.5.1.

Biomarkers of effect are defined as any measurable biochemical, physiologic, or other alteration within an organism that, depending on magnitude, can be recognized as an established or potential health impairment or disease (NAS/NRC 1989). This definition encompasses biochemical or cellular signals of tissue dysfunction (e.g., increased liver enzyme activity or pathologic changes in female genital epithelial cells), as well as physiologic signs of dysfunction such as increased blood pressure or decreased lung capacity. Note that these markers are often not substance specific. They also may not be directly adverse, but can indicate potential health impairment (e.g., DNA adducts). Biomarkers of effects caused by creosote are discussed in Section 2.5.2.

A biomarker of susceptibility is an indicator of an inherent or acquired limitation of an organism's ability to respond to the challenge of exposure to a specific xenobiotic substance. It can be an intrinsic genetic or other characteristic or a preexisting disease that results in an increase in absorbed dose, biologically effective dose, or target tissue response. If biomarkers of susceptibility exist, they are discussed in Section 2.7, "POPULATIONS THAT ARE UNUSUALLY SUSCEPTIBLE."

2.5.1 Biomarkers Used to Identify or Quantify Exposure to Creosote

No method is currently available to measure the parent creosote mixture in human tissues or fluids. However, the PAH components of the creosote mixture and their metabolites can be measured in the urine of exposed individuals. For example, Jongeneelen et al. (1985) found a metabolite of creosote, 1-hydroxypyrene, in concentrations of 1-40 μg/g creatinine in urine samples taken from workers who handled approximately 2,400 g creosote/day. The amount of 1-hydroxypyrene detected in urine samples taken during the weekend was less than that detected during the weekdays, when the exposure was

presumably higher than on the weekends. No correlation was found between occupational exposure levels and urine levels, so it is not known whether urine metabolites could be detected following exposure to low levels of creosote. The identification of PAH metabolites in the urine could serve as a method of biological monitoring of exposed workers, and possibly individuals living in the vicinity of hazardous waste sites where creosote has been detected following both short- and long-term exposure. However, because of the ubiquitous nature of PAHs in the environment, detection of PAH metabolites in the body tissues or fluids is not specific for exposure to creosote. PAH exposure can occur from a variety of sources, and there is no way to determine if creosote was the source.

PAHs form DNA adducts that can be measured in body tissues or blood following exposure to creosote that contains PAHs. Again, these PAH-DNA adducts are not specific for coal-tar creosote, and the adducts measured could have been from exposure to other sources of PAHs.

2.5.2 Biomarkers Used to Characterize Effects Caused by Creosote

The available genotoxicity data indicate that creosote is an indirect mutagen (i.e., requiring the presence of an exogenous mammalian metabolic system) and induces gene mutation in bacteria and mouse lymphoma cells. The mutagenicity of creosote observed in the conventional S. typhimurium assay is at least partially contributed to by the PAHs such as B[a]P and benzanthracene. However, because these results are exclusively from in vitro tests and the limited genotoxicity tests conducted on urine obtained from humans exposed to creosote have been negative, these changes cannot be considered specific biomarkers of effects caused by creosote, nor is it possible to distinguish whether the genotoxic effects result from either acute or chronic exposure to either low or high levels of creosote because all of the data were from in vitro studies. Furthermore, because the mutagenicity of creosote is at least partially due to its PAH components, exposure to PAHs from other sources could produce the same results. Coal-tar creosote exerts its acute toxic effects primarily via dermal exposure, causing architectural damage to the tissues with which it comes in contact. Therefore, burns and irritation of the skin and eyes are the most frequent manifestations of coal-tar creosote toxicity following acute dermal exposure to high levels. However, damage to the skin is not specific to creosote, and can be seen with other corrosive or photosensitizing agents. No other biomarkers (specific or otherwise) have been identified following exposure to creosote.

2.6 INTERACTIONS WITH OTHER CHEMICALS

The primary interactions known to occur between coal-tar creosote and other substances involve the induction of cancer. Coal-tar creosote is a complex mixture of organic substances consisting predominantly of liquid and solid aromatic hydrocarbons. Several of these components of coal-tar creosote

are known carcinogens as well as cocarcinogens, initiators, promoters, potentiators, or inhibitors of carcinogenesis. As discussed in Section 2.2.3.8 (Dermal Exposure, Cancer), coal-tar creosote and several of its fractions are carcinogenic when applied to the skin of mice. Dermally applied creosote can also act as a tumor-initiating agent when applied prior to croton oil treatment, and can enhance and accelerate tumor induction by B[a]P. Thus, the risk of cancer following dermal exposure to creosote is likely to be enhanced when concurrent exposure to other potential cocarcinogens, tumor promoters, initiators, and potentiators occurs. Due to the ubiquitous nature of PAHs and other carcinogenic substances in the environment, particularly at hazardous waste sites, the likelihood that these types of synergistic interactions with creosote will occur is good.

Pentachlorophenol and arsenical compounds are also used in wood preserving. For this reason, it is likely that they will be found with creosote at hazardous waste sites. However, there is no information available on the potential interactions of creosote with pentachlorophenol or arsenical compounds.

2.7 POPULATIONS THAT ARE UNUSUALLY SUSCEPTIBLE

Data indicate that the population in general may be at increased risk of developing skin cancer following prolonged dermal exposure to creosote. Data also indicate that subsections of the human population may be unusually susceptible to the toxic effects of creosote. These include people with a history of excessive sun exposure, people with skin diseases, and people with exposure to other substances that act as cocarcinogens, tumor promoters, initiators, and potentiators. There is some limited evidence, based on animal studies and the known health effects of the PAH constituents of creosote, that indicates that additional subsections of the population may be susceptible to the toxic effects of creosote. These include fetuses, people with kidney or liver disease, people with deficient immune systems due to disease or advanced age, and people with the genetic trait of inducible aryl hydrocarbon hydroxylase (AHH). AHH is an enzyme contained in the microsomal fraction of the cell that is responsible for the biotransformation of aryl compounds, such as PAHs. When this enzyme is induced, the rate at which aryl compounds are biotransformed into toxic intermediates is increased, rendering these individuals at higher risk. Genetic polymorphism does exist in the general population with regard to the rates of aryl hydrocarbon hydroxylation (i.e., differences in the P-450 and P-448 enzymes).

The results of occupational studies (Henry 1946, 1947), case reports (Cookson 1924; Lenson 1956; O'Donovan 1920), and experimental animal studies (Boutwell and Bosch 1958; Poel and Kammer 1957; Roe et al. 1958) indicate that the general population may be at risk of developing skin cancer following prolonged dermal exposure to creosote. People with skin damaged from excessive sun exposure, disease, or exposure to other substances that potentiate the carcinogenic effect of creosote (Cabot et al. 1984; Lenson

1956; Lijinsky et al. 1956; Sall and Shear 1940) are at an increased risk of developing skin disease, including cancer, from creosote exposure.

Limited evidence from experimental studies of pregnant pigs (Schipper 1961) and pregnant rats (Srivastava et al. 1986) indicate that components of creosote, such as PAHs, cross the placenta following maternal inhalation and may cause fetotoxic effects. Data from a human case report (Bowman et al. 1984) and experimental animal studies (Miyazato et al. 1981, 1984a,b) indicate that kidney or liver disease may increase the risk of developing adverse health effects following ingestion of creosote.

Two other subpopulations may be susceptible to certain components of creosote, such as PAHs; one would be people with deficient immune systems as a result of disease or advanced age, and the second would be people who carry the genetic trait of inducible AHH, one of the mixed-function oxidases. Calabrese (1978) reported that people with deficient immune systems may be at high risk of developing adverse health effects due to exposure to carcinogens, such as PAHs (Stjernsward 1966, 1969; Szakal and Hanna 1972). PAHs are metabolized to reactive intermediates, which are thought to cause cell transformation, mutagenicity, and cytotoxicity. It has been proposed that genetically expressed AHH inducibility is related to the development of bronchogenic carcinoma in persons exposed to PAHs contained in tobacco smoke. Approximately 45% of the general population are considered to be at high risk, and 9% of the 45% are considered to be at very high risk of developing bronchogenic carcinoma following exposure to PAHs (Calabrese 1978). These percentages were estimated from the population frequency of genetically controlled AHH induction (Calabrese 1978).

2.8 ADEQUACY OF THE DATABASE

Section 104(i)5 of CERCLA directs the Administrator of ATSDR (in consultation with the Administrator of EPA and agencies and programs of the Public Health Service) to assess whether adequate information on the health effects of creosote is available. Where adequate information is not available, ATSDR, in cooperation with the National Toxicology Program (NTP), is required to assure the initiation of a program of research designed to determine the health effects (and techniques for developing methods to determine such health effects) of creosote.

The following categories of possible data needs have been identified by a joint team of scientists from ATSDR, NTP, and EPA. They are defined as substance-specific informational needs that, if met would reduce or eliminate the uncertainties of human health assessment. In the future, the identified data needs will be evaluated and prioritized, and a substance-specific research agenda will be proposed.

2. HEALTH EFFECTS

2.8.1 Existing Information on the Health Effects of Creosote

The existing data on health effects of inhalation, oral, and dermal exposure of humans and animals to creosote are summarized in Figure 2-3. The purpose of this figure is to illustrate the existing information concerning the health effects of creosote. Each dot in the figure indicates that one or more studies provide information associated with that particular effect. The dot does not imply anything about the quality of the study or studies. Gaps in this figure should not be interpreted as "data needs" information. The vast majority of literature reviewed concerning the health effects of coal-tar creosote in humans described case reports of workers exposed predominantly via the dermal route, with a few older reports describing the consequences of accidental or intentional ingestion of creosote. Despite the limitations inherent in these types of studies, an association between dermal exposure to coal-tar creosote and dermal irritation, phototoxicity, and cancer in humans is evident.

The database for the health effects of creosote in experimental animals is lacking, and consists primarily of acute lethality studies or old animal studies that would be considered inadequate by current standards. The systemic effects of ingested creosote have only been well described for beechwood creosote. Little information is available on the effects of creosote following inhalation exposure. However, dermal exposure to coal-tar creosote has been shown in numerous studies to induce skin and lung tumors in mice. Since coal-tar creosote is a complex mixture consisting primarily of PAHs, the toxic effects of coal-tar creosote may be inferred from available information on these constituents. However, given the fact that many of these constituents are known cocarcinogens, initiators, promoters, and potentiators of carcinogenesis, the possibility for the occurrence of synergistic interactions in creosote cannot be ruled out. Thus, information on the toxicity of the various components of coal-tar creosote cannot take the place of sound data on the toxic effects of the creosote mixture itself.

2.8.2 Identification of Data Needs

Acute-Duration Exposure. Information is available on the effects of acute-duration exposures to creosote in humans and animals (oral and dermal). The type of information available includes LD_{50}s and acute toxicity in animals (coal-tar and beechwood creosote), and acute toxicity following accidental or intentional ingestion or dermal exposure in humans (coal-tar creosote). Coal-tar creosote exerts its acute toxic effects primarily via dermal exposure, causing architectural damage to the tissues with which it it comes in contact, such as the skin and eyes. Acute ingestion of coal-tar creosote appears to affect primarily the kidney and liver. Thus, the toxic effects of coal-tar creosote on the skin following single-dose dermal exposure in humans are well characterized, but little else is known regarding the systemic effects of this form of creosote in either humans or animals. The available information is

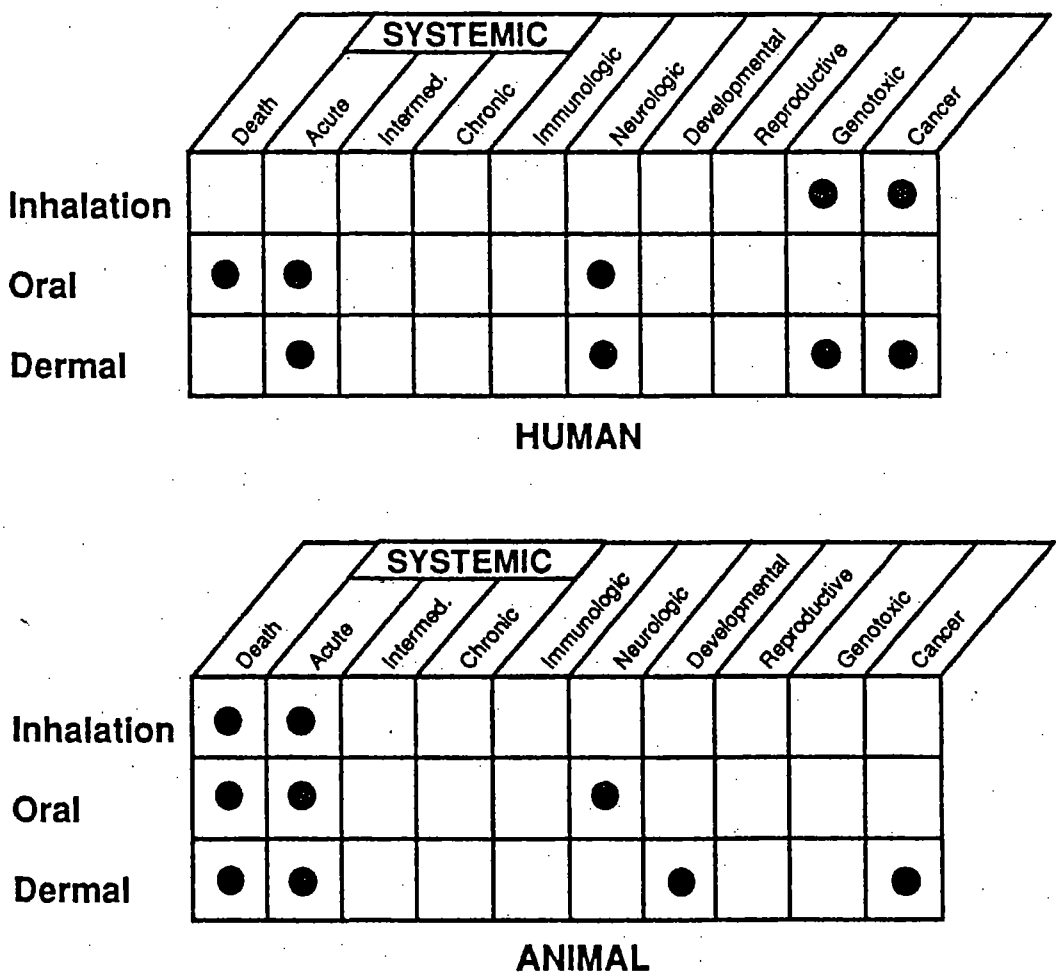

FIGURE 2-3. Existing Information on Health Effects of Coal Tar Creosote

insufficient to derive either an acute oral or inhalation MRL for coal-tar creosote because human reports that identified target organs lacked exposure information, and no short-term animal studies exist that describe effects other than death. Identification of target organs from short-term animal studies following oral and dermal exposure would be useful in assessing the risk associated with the acute ingestion or skin contact by humans of coal-tar creosote contaminated water or soils. The pharmacokinetic data on coal-tar creosote are insufficient to determine whether similar effects may be expected to occur across different routes of exposure. However, since creosote appears to cause route-of-entry adverse effects (e.g., damage to the skin following dermal contact), it may not be possible to predict effects following exposure by one route based on effects observed following exposure by another route.

Intermediate-Duration Exposure. Information is available on the effects of intermediate-duration dermal exposures to coal-tar creosote in humans and the effects of intermediate-duration exposures to beechwood creosote (oral) and coal-tar creosote (dermal) in animals. The exact duration and level of exposure in the human studies generally cannot be quantified because the information is derived from anecdotal case reports rather than controlled epidemiological studies. The animal studies with beechwood creosote describe predominantly hepatic and renal end points, and those conducted with coal-tar creosote describe dermal, but very rarely systemic, effects. Little or no reliable information on respiratory, cardiovascular, gastrointestinal, hematological, or musculoskeletal effects in animals is available. The available information is insufficient to derive either an intermediate oral or inhalation MRL for coal-tar creosote because no intermediate-duration animal studies exist that describe effects other than on the skin. Given the widespread use of coal-tar creosote as a wood preservative, and the fact that beechwood creosote is rarely used today, more information on the systemic effects of intermediate-duration exposures to coal-tar creosote by the oral and dermal routes (by conducting 90-day subchronic toxicity studies) would be useful to identify target organs in animals in order to assess the risk associated with the intermediate-duration ingestion or skin contact by humans of coal-tar creosote contaminated water or soils. The pharmacokinetic data on coal-tar creosote are insufficient to determine whether similar effects may be expected to occur across different routes of exposure. However, since creosote appears to cause route-of-entry adverse effects (e.g., damage to the skin following dermal contact), it may not be possible to predict effects following exposure by one route based on effects observed following exposure by another route.

Chronic-Duration Exposure and Cancer. Information is available on the effects of chronic-duration dermal exposures to coal-tar creosote in humans and the effects of chronic-duration exposures to beechwood creosote (oral) and coal-tar creosote (dermal) in animals. The exact duration and level of exposure in the human studies generally cannot be quantified because the information is derived from anecdotal case reports rather than controlled

epidemiological studies. The animal studies with beechwood creosote describe predominantly hepatic and renal end points, and those conducted with coal-tar creosote describe dermal, but very rarely systemic, effects. Little or no reliable information on respiratory, cardiovascular, gastrointestinal, hematological, or musculoskeletal effects in animals is available. The available information is insufficient to derive either a chronic oral or inhalation MRL for coal-tar creosote because no chronic-duration animal studies exist that describe effects other than on the skin. Given the widespread use of coal-tar creosote as a wood preservative, and the fact that beechwood creosote is rarely used today, more information on the systemic effects of chronic-duration exposures to coal-tar creosote by the oral and dermal routes would be useful to identify target organs in animals in order to assess the risk associated with the chronic-duration ingestion or skin contact by humans of coal-tar creosote contaminated water or soils. The pharmacokinetic data on coal-tar creosote are insufficient to determine whether similar effects may be expected to occur across different routes of exposure. However, since creosote appears to cause route-of-entry adverse effects (e.g., damage to the skin following dermal contact), it may not be possible to predict effects following exposure by one route based on effects observed following exposure by another route.

Various older case reports and the results of cross-sectional occupational surveys associate chronic occupational creosote exposure with the development of skin cancer. However, several newer studies are available that suggest that there is no association between exposure to creosote or other coal-tar products and cancer in humans. Several skin painting studies have been conducted in animals using coal-tar creosote and its various fractions. Although many of these studies would be considered inadequate by current standards, the results nevertheless indicate that coal-tar creosote and its constituents can induce skin tumors as well as act as tumor initiators and promoters. Although carcinogenicity studies have been conducted with beechwood creosote by the oral route, the relevance of the findings to coal-tar creosote is not known. More information on the carcinogenic potential of chronically ingested coal-tar creosote (e.g., an oral bioassay) would be useful. The pharmacokinetic data on coal-tar creosote are insufficient to determine whether similar effects may be expected to occur across different routes of exposure. However, since creosote appears to cause route-of-entry adverse effects (e.g., skin tumors following dermal contact), it may not be possible to predict effects following exposure by one route based on effects observed following exposure by another route.

Genotoxicity. The genotoxic potential of coal-tar creosote has been investigated almost exclusively using <u>in vitro</u> assays. The limited genotoxicity tests that have been conducted on urine obtained from humans exposed to creosote have been negative. The available data indicate that creosote is an indirect mutagen and induces gene mutation in bacteria and mouse lymphoma cells. However, a substantial database exists on the genotoxic

effects of the PAHs found in the creosote mixture. More in vivo assays with creosote would be useful to more completely characterize the genotoxic potential of the creosote mixture.

Reproductive Toxicity. No information on the reproductive effects of coal-tar creosote in humans or animals is available. However, limited data available on benzo(a)pyrene indicate that this PAH has a potential to induce adverse reproductive effects. An increase in relative testis weight was observed in rats administered beechwood creosote in the diet for 3 months. There were no accompanying gross or histopathological lesions of the testes in these animals, so the toxicological significance of this change is not known. Given the widespread potential for exposure to coal-tar creosote, and the indication that certain PAH components of coal-tar creosote as well as beechwood creosote may be reproductive toxicants, reproductive organ pathology should be examined in any 90-day studies that may be conducted. If these preliminary data indicate that creosote may present a reproductive hazard, then a multi-generation reproductive toxicity studies should be conducted by the oral and dermal routes of exposure. The pharmacokinetic data on coal-tar creosote are insufficient to determine whether similar effects may be expected to occur across different routes of exposure. However, since creosote appears to cause route-of-entry adverse effects (e.g., skin tumors following dermal contact), it may not be possible to predict effects following exposure by one route based on effects observed following exposure by another route.

Developmental Toxicity. Information on the developmental effects of creosote in humans was not found. Data from one severely limited study in pigs indicate that coal-tar creosote has the potential to be fetotoxic. Limited information available on a few PAHs (mostly benzo[a]pyrene) indicate that ingested PAHs have a potential to induce adverse developmental effects in animals. Given the widespread potential for exposure to coal-tar creosote, and the suggestive data mentioned above, oral and dermal developmental toxicity studies in animals would be useful to assess the potential risk for creosote-induced adverse developmental effects. The pharmacokinetic data on coal-tar creosote are insufficient to determine whether similar effects may be expected to occur across different routes of exposure. However, since creosote appears to cause route-of-entry adverse effects (e.g., skin tumors following dermal contact), it may not be possible to predict effects following exposure by one route based on effects observed following exposure by another route.

Immunotoxicity. The only available information on the immunological effects of creosote describes the occurrence of acute allergic dermatitis following exposure to creosote bush resin. The relevance of these findings to exposure to coal-tar creosote is not known. However, since creosote bush resin and coal-tar creosote do contain some similar constituents (e.g., phenolic derivatives), and people with deficient immune systems may be at high risk of developing adverse health effects due to exposure to carcinogens, such

as the PAHs contained in creosote, more information on the immunologic effects of dermally applied coal-tar creosote would be useful to better characterize the toxic effects of exposure to coal-tar creosote. Preliminary information on the potential for creosote to induce immunotoxic effects may be obtained from 90-day studies that examine effects on lymphoid tissue and blood components. If adverse effects on these parameters are observed, then a full battery of immunotoxic tests may be warranted to further characterize the potential immunotoxicity of creosote.

Neurotoxicity. The available information describes neurological involvement in humans and animals following short-term high-level oral exposure to creosote (both beechwood and coal-tar). These effects are generally excitatory in nature (i.e., convulsions). No information is available on the long-term neurotoxic effects of low-level exposure to coal-tar creosote in humans and animals. Long-term neurotoxicity studies in animals, using sensitive functional and neuropathological tests, would be useful in determining if coal-tar creosote is a neurotoxic agent.

Epidemiological and Human Dosimetry Studies. Few controlled epidemiological studies have been conducted in humans on the effects of exposure to coal-tar creosote. In particular, epidemiological studies of workers in creosote treatment plants would be useful to more fully assess the risk of inhalation and dermal exposure to coal-tar creosote. Most of the available information on the effects of coal-tar creosote in humans comes from cases of acute poisoning following the accidental or intentional exposure to coal-tar creosote and from occupational exposures in the wood-preserving and construction industries. Limitations inherent in these studies include unquantified exposure concentrations and durations, as well as concomitant exposure to other potentially toxic substances. The few available industrial surveys and epidemiological studies are limited in their usefulness because of small sample size, short follow-up periods, and brief exposure periods. Despite their inadequacies, studies in humans suggest that coal-tar creosote is a dermal irritant and a carcinogen following dermal exposure. Well-controlled epidemiological studies of people living in close proximity to areas where coal-tar creosote has been detected in surface and groundwater, near hazardous waste sites, and of people occupationally exposed could add to and clarify the existing database on creosote-induced human health effects. Particular effects to be examined include cancer (of the skin and other organs) and other adverse skin effects.

Biomarkers of Exposure and Effect. No method is currently available to measure the parent creosote mixture in human tissues or fluids. However, the PAH components of the creosote mixture and their metabolites (e.g., 1-hydroxypyrene) can be measured in the urine of exposed individuals following relatively high-level exposures of acute and chronic duration. The identification of PAH metabolites in the urine could serve as a method of biological monitoring of exposed workers, and possibly individuals living in

the vicinity of hazardous waste sites where creosote has been detected. However, because of the ubiquitous nature of PAHs in the environment, detection of PAH metabolites in the body tissues or fluids is not specific for exposure to creosote. PAH exposure can occur from a variety of sources, and there is no way to determine if creosote was the source. PAHs form DNA adducts that can be measured in body tissues or blood following exposure to creosote containing PAHs. Again, these PAH-DNA adducts are not specific for coal-tar creosote, and the adducts measured could have been from exposure to other sources of PAHs. Therefore, a biomarker of exposure specific to creosote would be useful to monitor exposure to this mixture.

The formation of benzo(a)pyrene-DNA adducts has been demonstrated and may also serve as a biomarker of PAH-induced carcinogenicity. However, these adducts are not specific for coal-tar creosote exposure, as exposure to benzo(a)pyrene from sources other than coal-tar creosote can occur. Studies to identify and measure effects more diagnostic of coal-tar creosote-specific injury would be useful. Also, increasing the sensitivity of these tests would be valuable in evaluating the health status of individuals who have been exposed to low levels of creosote.

Absorption, Distribution, Metabolism, and Excretion. Studies monitoring the pharmacokinetics of the coal-tar creosote mixture are limited. Much of the information regarding the disposition of creosote is based on indirect evidence or the pharmacokinetic information available on a single class of components of creosote, the PAHs.

Absorption of creosote occurs following all routes of exposure. The presence of creosote components in tissues and the presence of metabolites in urine were evidence of its absorption. However, no studies are available that quantify the extent and rate of creosote absorption.

Studies in humans or animals regarding the distribution of creosote are not available. Its distribution is based on assumptions derived from studies that monitored the distribution of PAHs, components of creosote.

The metabolism of creosote has not been extensively studied, but preliminary results indicate that hydroxylation of the major PAH components is a principal degradation pathway in both humans and animals following all routes of exposure. 1-Hydroxypyrene is one metabolite that has been identified, but there were no studies available regarding the identification of other metabolites. Elucidation of additional biotransformation pathways and products is also important in examining potential toxic effects of creosote. Moreover, no studies were located regarding the rate or extent of creosote metabolism.

Studies regarding the excretion of creosote by humans or animals were not available. It is known that PAHs and their metabolites are primarily excreted

in the bile and the feces. However, direct excretion studies with creosote would be more useful. Information is available regarding the disposition of creosote's individual components, but no information is available regarding how these components interact to affect the overall disposition.

In summary, no data are available regarding the toxicokinetics of the creosote mixture and all information must currently be inferred from what is known about the PAH components of creosote. Interactions between the components of the creosote mixture could occur that could alter the rate and extent of absorption, distribution, metabolism, and excretion of creosote from what might be predicted based on what is known about the individual PAH components. Therefore, more information on the toxicokinetics of the creosote mixture itself would be useful to predict possible target organs of toxicity as well as allow for extrapolation of toxic effects across routes of exposure.

Comparative Toxicokinetics. The available information indicates that the absorption, distribution, metabolism, and excretion of creosote is qualitatively similar in humans and rodents. This general conclusion was primarily based on evidence derived from studies on the individual PAH components of creosote. Detailed pharmacokinetic studies in humans and animals specific to the creosote mixture would provide a better indication of species differences and indicate whether the ability to extrapolate across species may be possible in the future.

2.8.3 On-going Studies

Creosote is currently subject to an EPA Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) registration standard and data call-in, and the Creosote Council II is planning to conduct a research program that includes testing in subchronic inhalation, subchronic dermal, developmental, and reproductive toxicity.

3. CHEMICAL AND PHYSICAL INFORMATION

3.1 CHEMICAL IDENTITY

The chemical synonyms and identification numbers for coal-tar creosote are listed in Table 3-1. Creosote is a complex mixture of variable composition containing primarily aromatic ring compounds and condensed aromatic ring compounds. Therefore, it is not possible to represent the chemical formula and structure of the creosote mixture.

3.2 PHYSICAL AND CHEMICAL PROPERTIES

Important physical and chemical properties of coal-tar creosote are listed in Table 3-2.

Coal-tar creosote is defined by the American Wood Preserver's Association (1988) as:

> A distillate derived from coal-tar. As used in the wood preserving industry, creosote denotes a distillate of coal-tar produced by the high temperature carbonization of bituminous coal. Creosote consists principally of liquid and solid aromatic hydrocarbons and contains some tar acids and tar bases; it is heavier than water and has a continuous boiling range beginning at about 200°C.

It is thus a complex mixture typically composed of 85% PAHs and 2%-17% phenolics (Bedient et al. 1984). The composition of the mixture may also vary across lots and across manufacturers. The major PAH components of creosote are listed in Table 3-3 . Creosote is further classified according to a set of standards regarding physical property specifications for creosote that must be met for certain types of creosote. The physical property specifications for the different types of creosote are listed in Table 3-4. Type P1/P13 creosote is a straight creosote distillate and is used in ground contact, land, and fresh and marine water applications. Type P2 creosote is used by the railroad industry in the treatment of railroad crossties.

Coal-tar itself is produced by the carbonization, or coking of coal. Coal-tar is defined by Hawley (1977) as:

> A black, viscous liquid (or semi-solid), naphthalene-like odor, sharp burning taste; obtained by the destructive distillation of bituminous coal, as in coke ovens; 1 ton of coal yields 8.8 gallons of coal-tar. Combustible. Specific gravity 1.18-1.23 (66/60°F). Soluble in ether, benzene, carbon disulfide, chloroform; partially soluble in alcohol, acetone, methanol, and benzene; only slightly soluble in water.

To distinguish another product of coal-tar from creosote, coal-tar neutral oils are usually defined as a mixture of naphthalene, fluorene, anthracene, and other neutral hydrocarbons (Smale, 1977). Neutral hydrocarbons consist of those coal-tar hydrocarbons other than coal-tar acids (such as phenols, cresols, and cresylic acids), and coal-tar bases (such as pyridines, quinolines, and acridines).

Because of the variability in feedstock and manufacturing processes, presentation of exact values for various properties presented in Table 3-2 are not possible.

3. CHEMICAL AND PHYSICAL INFORMATION

TABLE 3-1. Chemical Identity of Coal-tar Creosote

	Value	Reference
Chemical name	Coal-tar creosote	AWPA 1988
Synonyms	Creosote Oil, Dead Oil, Brick Oil, Coal-tar Oil, Creosote P1, Heavy Oil, Liquid Pitch Oil, Wash Oil	Windholz 1983; Weiss 1986; HSDB 1988
Trade Names	Preserv-O-Sote	HSDB 1988
Chemical Formula	No data[a]	Windholz 1983 HSDB 1988
Chemical Structure	No data[a]	
Wiswesser Line Notation	UVCB	HSDB 1988
Identification Numbers:		
CAS Registry	8001-58-9	Weiss 1986
NIOSH RTECS	GF8615000	HSDB 1988
EPA Hazardous Waste	U051	HSDB 1988
OHM/TADS	No data	
DOT/UN/NA/IMCO shipping	DOT: 1933; IMCO: 3.2; IMCO/UN: 9/1993	Weiss 1986
HSDB	6299	HSDB 1988
NCI	No data	

[a] Creosote is a mixed compound composed primarily of polycyclic aromatic hydrocarbons including phenanthrene, acenaphthene, fluorene, anthracene, and pyridine.

AWPA = American Wood Preservers' Association
CAS = Chemical Abstracts Service
NIOSH = National Institute for Occupational Safety and Health
RTECS = Registry of Toxic Effects of Chemical Substances
DOT/UN/NA/IMCO = Department of Transportation/United Nations/North America/International Maritime Dangerous Goods Code
HSDB = Hazardous Substances Data Bank

TABLE 3-2. Physical and Chemical Properties of Coal-Tar Creosote

Property	Value	Reference
Molecular weight	No data	
Color	Translucent amber to brown to black liquid	Windholz 1983
Physical state	Liquid	Weiss 1988
Melting point	No data	
Boiling point	>180° C	Weiss 1986
	194-400° C	HSDB 1988
Density (g/cm3)	1.07 (20° C)	DOT 1985
Odor	Sharp odor	Windholz 1983
	Tarry, aromatic odor	Weiss 1986
	Smoky odor	HSDB 1988
Odor threshold:		
Water	No data	
Air	No data	
Solubility:		
Water	Practically insoluble	Windholz 1983
Organic solvents	Miscible with alcohol, ether, fixed or volatile oils	HSDB 1988
Partition coefficients	No data	
Vapor pressure	No data	
Henry's law constant	No data	
Autoignition Temperature	335° C	Windholz 1983
Flashpoint	75° C	Windholz 1983
Flammability limits	1.3-8%	HSDB 1988

TABLE 3-3. Major Chemical Components of Typical Wood Preservative Creosote*

Component	Percent P1/P13 Creosote**	Percent P2 Creosote
Indene	3.3	0.5
Methylbenzofurans and xylenol	1.0	
Naphthalene	14.3	8.7
Quinoline	0.9	0.7
2-Methylnaphthalene and indole	4.9	5.6
1-Methylnaphthalene	2.1	2.1
Biphenyl	1.3	1.5
Dimethylnaphthalenes	2.1	
Acenapthylene	0.8	
Acenaphthene	4.1	4.9
Dibenzofuran	3.5	3.4
Fluorene	4.7	4.5
Methyldibenzofurans	3.0	
Methylfluorenes	2.2	0.8
Dibenzothiophene	0.9	
Phenanthrene	12.7	16.9
Anthracene	5.6	5.3
Benzoquinolines	0.8	
Carbazole	0.9	2.2
2-& 3-Methylphenanthrenes	2.0	3.0
Fluoranthene	6.0	7.3
Pyrene	5.0	6.5
Benzofluorenes and methylfluoranthenes	3.0	
Methylpyrenes	1.9	
Chrysene	1.5	3.5
Methylchrysene and benzanthracenes	1.0	1.1

*These values are calculated averages which are representative of creosote. Actual concentrations of specific constitutents can vary. Naphthalene, for example, can range from five to twenty percent.

**See Table 3-4 for the physical property specifications for each type of creosote.

Source: Butala 1990

TABLE 3-4. Physical Property Specifications for Various Types of Creosote

Typical Physical Properties	Range of Properties: Creosote Distillate (P1/P13)	Range of Properties: Creosote/ Coal-tar Solution (P2)
Water, Percent by Volume	0.0-0.7	0.2-0.13
Specific Gravity at 38°C:		
Whole Fraction	1.059-1.102	1.083-1.121
235/315 Fraction	1.034-1.044	1.033-1.042
315/355 Fraction	1.098-1.125	1.094-1.122
Xylene Insoluble, Percent by Weight	0.06-0.40	0.80-1.90
Distillation, Percent by Weight		
to 210°C	0.0-0.9	0.9-1.1
to 235°C	3.0-10.0	1.6-6.6
to 270°C	15.0-35.6	13.8-36.9
to 315°C	43.4-58.0	37.6-54.2
to 355°C	70.0-76.6	60.0-71.1
Residue	23.7-27.5	27.4-40.0

Source: Butala (1990)

4. PRODUCTION, IMPORT, USE, AND DISPOSAL

4.1 PRODUCTION

Creosote refers to one of three complex mixtures of organic compounds. One mixture is derived from coal-tar (CAS Registry number 8001-58-9), one is produced from wood (e.g., beechwood) (CAS Registry number 8021-39-4), and the third is derived from the resin of the creosote bush (Larrea). Coal-tar creosote is produced from a distillation of coal-tar produced by high-temperature carbonization. Because coal-tar is a by-product of steel manufacturing, domestic production of coal-tar products is dependent on demand for steel (USITC 1987). Creosote production falls into two categories: distillate (100% creosote), and creosote in coal-tar solution. Annual production and sales figures for the years 1950 through 1987 are listed in Table 4-1. Distillate production in 1986 was 46.8 million gallons; creosote in solution was 31.6 million gallons (USITC 1987). Distillate production in 1987 was 47.3 million gallons. Production of creosote in solution in 1987 was not disclosed, but solution sales in 1987 were 34.3 million gallons (USITC 1988). The following organizations manufacture creosote domestically: Allied Corp, Morristown, New Jersey; Coopers Creek Chemical Corp, West Conshohocken, Pennsylvania; Koppers Co., Pittsburgh, Pennsylvania; Reilly Industries, Inc., Indianapolis, Indiana; Aristech Chemical Corp., Gary, Indiana; U.S. Steel Corp., Pittsburgh, Pennsylvania; Witco Chemical Corp., Woodcliff Lake, New Jersey; Crowley Tar Products Co., New York, New York; Los Angeles Chemical Co., South Gate, California; and Standard Tar Products Co., Milwaukee, Wisconsin (USITC 1988; HSDB 1988).

4.2 IMPORT

In 1984, 7.3 million gallons of creosote were imported into the U.S. (Bureau of Census 1984a), and 7.5 million gallons were exported from the U.S. (Bureau of Census 1984b). The is the most current data available regarding the import and export of creosote.

4.3 USE

Coal-tar creosote was used as a wood preservative in the United States for over 100 years. Wood preservation accounts for over 97% of current coal-tar creosote production (Santodonato 1985). Coal-tar creosote is applied to wood by commercial pressure treatment or by home and farm dipping or brushing, although this latter use is not significant since creosote is now a restricted use pesticide (EPA 1986b). Coal-tar creosote is a wood preservative and

4. PRODUCTION, IMPORT, USE, AND DISPOSAL

Table 4-1. U.S. Production of Creosote Oil[a]

Year	Creosote in Coal-Tar Solution[b] (100% creosote basis) (millions of gallons)		Distillate[b] (100% creosote basis)[c] (millions of gallons)	
1987	47.3		----	(34.3)
1986	46.8	(31.5)	31.6	(36.6)
1985	64.3	(40.0)	66.6	(42.3)
1984	42.2	(30.4)	40.8	(30.9)
1983	39.5	(24.7)	40.9	(27.7)
1982	36.3	(21.4)	44.3	(32.2)
1981	81.0	(61.5)	61.1	(44.5)
1980	60.6	(37.1)	----	
1979	80.5	(40.5)	27.2	(10.9)
1978	51.3	(36.3)	35.0	(26.3)
1977	47.0	(35.4)	36.0	(25.2)
1976	77.1	(51.9)	36.8	(26.4)
1975	79.2	(50.7)	35.7	(35.2)
1970	103.4		25.6	
1965	111.1		12.5	
1960	82.0		10.8	
1955	106.1		16.4	
1950	106.7		35.6	

[a]Source: Santodonato 1985; USITC 1987, 1988.
[b]Figures in parentheses are sales figures.
[c]Figures for 1982 and 1981 only are 100% solution basis.

water-proofing agent for railroad ties, telephone poles, marine pilings, and fence posts. In addition, coal-tar creosote prevents animals and vegetable growth on concrete marine pilings, and is a component of roofing pitch, fuel oil, and lamp black and a lubricant for die molds (HSDB 1988). Other uses include animal and bird repellent, insecticide, animal dip, and fungicide (IARC 1985).

Beechwood creosote and its compounds calcium creosotate, creosote carbonate, and creosote valerate were used in the past as antiseptics and expectorants (Windholz 1983). Treatments for leprosy (Samson and Limkako 1923), pneumonia (McKinlay 1933), and tuberculosis (Fellows 1939a) also involved ingestion of beechwood creosote. Beechwood creosote is rarely used for medicinal purposes today.

4.4 DISPOSAL

Creosote sludge generated from coal-tar creosote production can be fixed, solidified, and covered with clay in the settling lagoon used in treatment. This "disposal in place" requires groundwater monitoring for a 30-year period (Ball et al. 1985). Due to RCRA Land Disposal Restrictions, creosote can no longer be disposed in hazardous waste landfills unless treated to EPA-specified treatment standards (EPA 1990). Industrially used creosote-treated wood can be burned in an industrial incinerator or boiler (EPA 1986b). Treated wood used in the home or farm should be buried or disposed with household garbage, it should not be incinerated (American Wood Preservers Institute 1988).

5. POTENTIAL FOR HUMAN EXPOSURE

5.1 OVERVIEW

Creosote is a complex commercial mixture of some 300 organic constituents. The composition of the mixture varies from batch to batch depending on the coking process used. Creosote consists primarily of PAHs, and therefore the fate of much of the components of the mixture is similar to that of PAHs. The primary releases of creosote to the environment are in wastewater effluents from wood-treatment plants. Compared to releases to surface water and soil, creosote releases to the atmosphere are considered to be insignificant. Creosote has been found in at least 31 of the 1177 hazardous waste sites on the NPL (VIEW Database 1989). The frequency of these sites within the United States can be seen in Figure 5-1. Biotransformation by microbes is the primary process by which creosote constituents are degraded in soils, surface waters, and groundwater. The mixture is relatively stable and persistent in the environment; half-life data are not available.

Creosote has been widely used as a wood-treatment pesticide since the turn of the century. As a result of this widespread and long-term use, workers in the wood-preserving industry have been exposed to creosote for many years. Human exposure to creosote can occur by inhalation or direct dermal contact. Individuals working in wood-preserving facilities are one of the largest exposed groups. Exposure may also occur during handling and installation of treated wood products in structures such as bridges, piers, retaining walls, crossties, and fencing; as a result of burning treated scrap wood; and through contact with contaminated media at hazardous waste sites. The general public is unlikely to experience any significant exposure to liquid creosote through the direct use of wood preservative products because EPA canceled all nonwood uses of the material and restricted use of creosote products to certified applicators in January 1986 (EPA 1986b).

5.2 RELEASES TO THE ENVIRONMENT

There are no known natural sources of the creosote mixture (IARC 1973). However, several of the PAH constituents of the mixture are known to have natural sources; the reader is referred to the ATSDR Toxicological Profile for PAHs (ATSDR 1990) for additional information on natural sources, releases, and levels of PAHs not associated with creosote production, use, and disposal.

The major source of creosote released to the environment is wastewater effluents from wood treatment facilities (USDA 1980). Companies that preserve wood with creosote may treat their aqueous wastes in on-site biological treatment plants or release the wastewater into a municipal water treatment system (EPA 1978; von Rumker et al. 1975). Some creosote components may also be released to the atmosphere by fugitive emissions from these facilities.

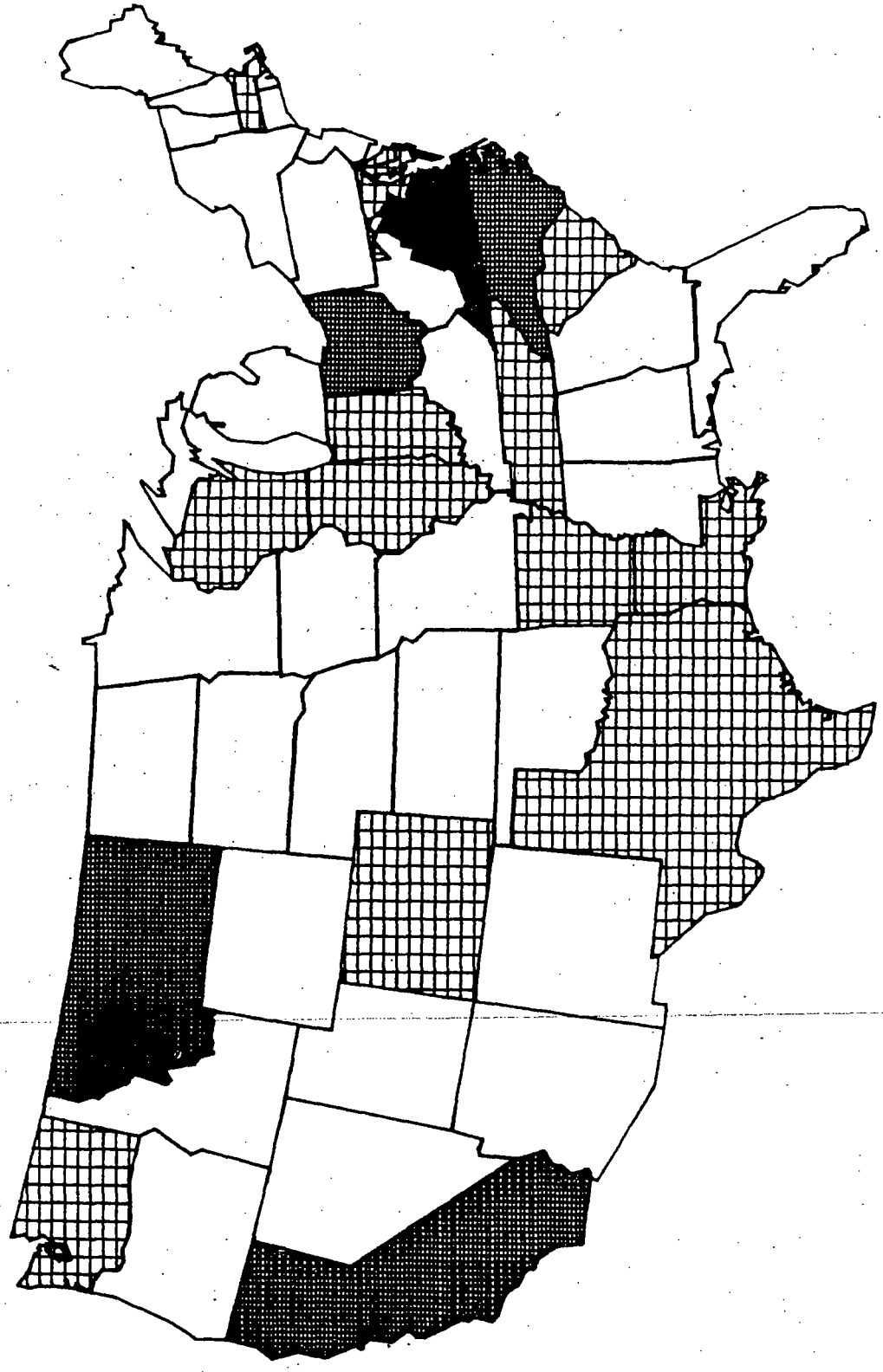

FIGURE 5-1. FREQUENCY OF SITES WITH CREOSOTE CONTAMINATION

However, atmospheric releases are considered to be minimal in relation to releases in wastewaters.

Creosote components may also be slowly released from the surface of treated wood products by oil exudation, leaching by rainwater, or volatilization. Losses of creosote from impregnated wood are dependent on the kind of coal used to produce the coal-tar, the kind of coke oven used to make the coal-tar and the conditions under which the wood is used (Leach and Weinert 1976).

5.2.1 Air

Atmospheric releases of creosote from wood-preserving plants are not well defined. Creosote constituents such as naphthalene, acenaphthylene, acenaphthene, phenanthrene, and fluorene have been detected in emissions at a pressure treatment facility that treated logs for use as utility poles and marine pilings (Engineering Science 1986). Releases may occur at several points in the treatment process, such as when cylinder doors are opened after a treatment cycle, or when creosote is transferred from the heater to the cylinder at the beginning of the impregnation process. Atmospheric releases vary from plant to plant, depending on the process design, and are considered to be significantly smaller than releases to surface water in aqueous effluents (Henningsson 1983).

On a hot, sunny day evaporation of creosote from the surface of treated wood may release creosote constituents to the atmosphere. Only the volatile creosote components such as acenaphthene and naphthalene will volatilize; the heavier fractions will remain on the wood (USDA 1980).

In a terrestrial microcosm study, release of ^{14}C-labeled creosote components to the atmosphere from treated wood accounted for 1.0% of total acenaphthene and 1.4% phenanthrene whereas 93.5% and 95% of these components, respectively were retained in the wood (Gile et al. 1982).

Other potential sources of atmospheric releases include incineration of scrap wood treated with the mixture and re-entrainment of dust and soils contaminated with components of the mixture in the vicinity of hazardous waste sites.

5.2.2 Water

The major source of creosote released into surface waters and groundwater is wastewater effluents from wood-preserving facilities (USDA 1980). In previous years, wastewater generated from wood treatment facilities was often discharged to unlined evaporation/settling lagoons where a sludge was formed. Water-soluble creosote components then percolated through the soil to reach the groundwater table. Wastewaters may include process water generated from steam conditioning of the wood, preservative formulation recovery and

regeneration water, water used to wash excess preservative from the surface of the wood, condensate from drying kilns used to dry preserved or surface-protected wood, water that accumulates in door and retort sumps, and rain falling on or in the immediate vicinity of the treating cylinder and work tank area. Groundwater contamination from creosote wastewaters and sludge stored in unlined surface water impoundments at a wood treatment facility has been reported in Pensacola, Florida (Goerlitz et al. 1985). Similar contamination problems have been reported in Conroe, Texas (Borden 1986), and St. Louis Park, Minnesota (Hickock et al. 1982).

Water-soluble creosote constituents (e.g., phenols) may be released to surface water or groundwater by leaching from the surface of creosote contaminated soils at hazardous waste sites or from treated wood products coming into contact with water, such as marine pilings. For example, some studies have shown that creosote is lost to a greater extent from marine timber than from timber placed in freshwater as a result of cell contraction caused by the high concentration of salts in seawater (Henningsson 1983).

5.2.3 Soil

Creosote may be released to soils at treatment facilities as a result of bleeding of the product from treated timber in stock yard and storage areas and through disposal of the mixture at hazardous waste sites. Rain water may also wash the soluble components directly from the surface of treated timber and into the soil (Henningsson 1983).

5.3 ENVIRONMENTAL FATE

5.3.1 Transport and Partitioning

Creosote constituents released to surface waters will differentially partition to the water column or to sediments depending on their water solubility and sorptive properties. For example, PAHs, the major constituents of creosote, generally tend to sorb strongly to soil and sediment particulates and have low aqueous solubilities and mobility (Hickock et al. 1982). Nitrogenous bases present in creosote wastewater (e.g., aniline, toluidines, and xylidines) are relatively soluble, mobile, and persistent in groundwater (Pereira et al. 1983). However, behavior at a given site is also dependent on site-specific characteristics. For example, PAH, phenol, and heterocyclic components of creosote wood treatment process wastes were found to migrate en masse in groundwater through a contaminated sand and gravel aquifer in Pensacola, Florida; sorption of these different classes of organic constituents in the low organic carbon(<0.1%) aquifer materials was not important (Pereira and Rostad 1986).

In an investigation of the extent of creosote contamination at four wood preservative plants with process water surface impoundments, unspecified creosote components were found to have moved 20-60 feet vertically from the

impoundments to the water table and up to 500 feet horizontally from the sources (Ball 1987).

In an investigation of the release of creosote from treated wood into freshwater and sea water, naphthalene, phenanthrene, acenaphthene, dibenzofuran, fluorene, and 2-methylnaphthalene were found to be the major components that migrated into water (Ingram et al. 1982). The rate of migration was found to increase significantly with increasing temperature within the range of 20° to 40°C and occurred more slowly from aged than from freshly treated pilings.

In a terrestrial microcosm study, 2.7% of radiolabeled phenanthrene and 4.3% of radiolabeled acenaphthene were found in soil samples taken in a 10-cm zone around creosote-treated posts, whereas concentrations of the compounds in the posts were 95% and 93.5% of the amounts applied, respectively, after 2.5 months (Gile et al. 1982).

Limited uptake of some creosote constituents has been detected in plants exposed to creosote-treated wood in nearby soil. Only 0.04% of applied acenaphthene and 0.1% of phenanthrene partitioned to plants in one study (Gile et al. 1982).

Animals such as voles, crickets, snails, pill bugs, and worms have exhibited the capacity to assimilate radiolabeled creosote components in terrestrial microcosm studies. Creosote components were found to accumulate to the greatest extent in the vole, with bioconcentration factors of 12-31. The ^{14}C mass balance content of the animals was 1.2% of applied acenaphthene and 0.8% of applied phenanthrene versus 4.3% and 2.7%, respectively, in soils (Gile et al. 1982). In addition, mussels taken from creosote-treated pilings have been found to contain significantly more B[a]P, a creosote constituent, than those growing elsewhere (Dunn and Stich 1976). Accumulation of creosote-derived PAHs has been reported in benthic organisms in Pensacola Bay (Elder and Dresler 1988; Rostad and Pereira 1987). Fluoranthene, pyrene, B[a]P, anthracene, chrysene, and phenanthrene were detected in higher concentrations in tissues of snails (Thais haemastoma) and oysters (Crassostrea virginica) taken from offshore sites near an onshore wood treatment plant than from control sites.

5.3.2 Transformation and Degradation

5.3.2.1 Air

No information was found in the available literature concerning the transformation of creosote components in the atmosphere.

5.3.2.2 Water

Creosote components are degraded in aquatic environments by microfaunal metabolism (Borthwick and Patrick 1982; Ingram et al. 1982). Microorganisms may act on the creosote-treated wood itself or on creosote components that have leached from the treated wood. Quinoline, the major tar base in creosote, has been reported to be degraded in surface water and groundwater by bacteria of the genus Pseudomonas (Bennett et al. 1985). Biotransformation of the phenolic components of creosote apparently also occurs under anaerobic conditions in contaminated groundwater (Ehrlich et al. 1983; Goerlitz et al. 1985). Adaptation of soil microorganisms to PAH contaminants in groundwater originating from creosote treatment plant wastes has also been reported (Wilson et al. 1986).

Creosote components have been detected in surface water samples taken near a wood-treatment facility that ceased operation 30 years earlier (Black 1982). The creosote appeared to have been transported through the soil and was entering the river via seepages and springs. Weathering processes produced only minor constitutive changes in the creosote with relative losses of the lower molecular weight components. These changes probably reflected the greater volatility and solubilities of the two and three carbon ring PAHs.

5.3.2.3 Soil

Creosote components are slowly released from treated wood products by oil exudation, rainwater leaching, and by volatilization of the lighter fractions (Henningsson 1983). USDA (1980) reported that the major components of creosote were not detected in soil samples taken to a depth of 6 inches within 2-24 inches from treated poles, presumably as a result of biotransformation of mobilized components by soil microorganisms. Creosote components released to soils in wastewater effluents have been found to be biotransformed by soil microbes under aerobic conditions (Middleton 1984). Bacteria of the genus Pseudomonas isolated from a creosote-contaminated waste site have been reported to degrade creosote-derived quinoline (Bennett et al. 1985). Acclimation to creosote phenolic constituents by soil microorganisms has also been demonstrated (Smith et al. 1985).

5.4 LEVELS MONITORED OR ESTIMATED IN THE ENVIRONMENT

5.4.1 Air

No information was found in the available literature regarding ambient atmospheric concentrations of creosote-derived components (i.e., PAHs) in the United States. Workplace air concentration data are discussed in Section 5.5. Data on ambient atmospheric concentrations of PAHs derived from other sources can be found in the ATSDR Toxicological Profile for PAHs (ATSDR 1990).

5.4.2 Water

Results from 2 years of groundwater sampling at an abandoned wood treatment facility in Conroe, Texas where creosote had been used for about 20 years showed that wells were contaminated with levels of up to 3490 μg/L naphthalene, 1263 μg/L methylnaphthalene, 425 μg/L dibenzofuran, and 302 μg/L fluorene. The contaminants had apparently migrated through the clay and sand soils on the site from three waste pits (Bedient et al. 1984).

5.4.3 Soil

Several PAH constituents of creosote were detected in soil samples taken at an abandoned wood treatment facility in Conroe, Texas at depths of up to 25 feet. Maximum concentrations of the compounds were detected in samples collected at the 0.7-1.8 ft depth. Maximum concentration levels were 3.7 mg/kg for naphthalene, 3.4 mg/kg for methylnaphthalene, 3.8 mg/kg for dibenzofuran, 4.2 mg/kg for fluorene, and 2.2 mg/kg for anthracene (Bedient et al. 1984).

5.4.4 Other Media

Creosote-derived phenanthrene, 1,2-benzanthracene, and B[a]P have been detected in river sediments at concentrations of up to 231,000 μg/kg, 62,000 μg/kg, and 16,000 μg/kg, respectively, downstream from the site of a former wood treatment facility (Black 1982). Creosote-derived PAHs were also detected in the sediments of Pensacola Bay and a drainage stream in the vicinity of a former wood treatment facility near Pensacola, Florida. PAH concentrations ranged from 200 μg/g for naphthalene to 140,000 μg/kg for anthracene in stream sediments; concentrations in Pensacola Bay ranged from 75 μg/kg for benzanthracene to 190 μg/kg for fluoranthene (Elder and Dresler 1988).

5.5 GENERAL POPULATION AND OCCUPATIONAL EXPOSURE

Individuals working in the wood-preserving industry comprise the largest portion of the population potentially exposed to creosote. Workers employed at creosote pressure treatment facilities may be exposed by direct dermal contact or by inhalation of volatilized components. Approximately 4,000 workers in the United States were employed at 188 pressure treatment plants that used creosote as a preservative in the late 1970s (USDA 1980). Potential exposure to creosote in these plants is minimized by the use of closed systems for receiving, transferring, mixing, storing, and applying the mixture to wood products. Similarly, dermal exposure from the handling of freshly treated wood is minimized by the use of highly mechanized processes. Exposure via inhalation, however, is more likely to occur. For example, worker exposure may be significant during opening of treatment cylinder doors and cylinder cleaning operations (EPA 1981b). Inhalation and dermal exposure are also more likely in plants using nonpressure treatment methods such as thermal and dip

treatments in open tanks. An estimated 100 workers were involved in commercial thermal and dip treatment operations in the late 1970s. Some of these workers experienced consistently high inhalation exposures (USDA 1980). Other historical nonpressure treatment exposures included an estimated 50,000 individuals (e.g., homeowners, farmers, landscapers) who applied creosote in noncommercial brush, dip, spray, and soak treatments (EPA 1981a). Dermal contact and inhalation may have resulted in exposure to high concentrations of creosote components for these individuals, but the exposures were usually of intermittent frequency (USDA 1980). However, designation of creosote products as restricted use pesticides by EPA in 1986 has probably decreased the number of individuals potentially exposed in these nonpressure wood treatment applications (EPA 1986b).

There are currently 25,000 workers employed in about 75-100 domestic wood treatment plants using creosote. As a result of the use of engineering controls and personal protective equipment (e.g., respiratory protection and impervious gloves) required in the 1986 settlement of the EPA Special Review process[2], airborne exposures to creosote components in the workplace are generally below the OSHA permissible exposure limit (PEL) of 0.2 mg benzene soluble particulates/m^3 air (Rivers 1990).

However, prior to the standard use of these controls by industry, workers were potentially exposed to higher airborne concentrations of creosote constituents. For example, the concentration of creosote (i.e., coal-tar pitch volatiles) components in personal air samples taken at a railroad tie treatment facility in Somerville, Texas, were found to range from 0.003 to 1.211 mg/m^3 (Todd and Timbie 1980). Another industrial hygiene survey of worker exposure to creosote at a wood-treatment facility in Tacoma, Washington, showed coal-tar pitch volatiles in personal air samples ranged from less than 0.4 μg/m3 to 111.9 μg/m3 (Todd and Timbie 1981). The higher concentrations were found at the end of the treatment process when the cylinder was opened. NIOSH investigated creosote exposure among dock builders in Brooklyn, New York, in 1980. Employees were reported to have substantial direct skin contact with creosote. Breathing zone concentrations of the cyclohexane extractable fraction of the coal-tar pitch volatiles ranged from zero to 0.059 mg/m3 of air (Baker and Fannick 1981). Monitoring data

[2]A Special Review of a currently registered pesticide may be initiated by EPA when validated data indicate that certain types of toxicity (e.g., carcinogenicity, developmental toxicity, acute effects) exist for humans or for non-target plant or animal species. A formal process exists for notifying registrants and other interested parties, requesting further data regarding the pesticide in question, analyzing and reporting risks and benefits, and requesting public review. The final regulatory decision may be implemented over a period of time or it may be imposed immediately as an emergency action based solely on the EPA's finding of immediate danger to human health or the environment.

collected from 11 creosote treatment facilities in the United States showed that worker breathing zone concentrations of benzene-soluble particulates averaged 0.07 mg/m^3 (range 0.01–0.061 mg/m^3) (EPA 1981a). Comprehensive studies of worker exposure to creosote in wood treatment plants have been conducted by Koppers Company alone and in conjunction with NIOSH (SRI International 1977; Markel et al. 1977). Data from these studies indicated that, on the average, employee exposure to particulate polycyclic organic materials (PPOM) was within the permissible level of 0.1 mg/m^3 recommended by NIOSH for coal-tar volatiles. The only components that could be reliably measured in the vapor-phase fractions collected were naphthalene, methylnaphthalene, and acenaphthene. The concentrations of these chemicals ranged from 0.54 to 2.0 mg/m^3. Fluorene and phenanthrene-anthracene were detected in trace quantities but were not quantifiable. Benzene-soluble particulates (PPOM) ranged from 0.02 to 0.10 mg/m^3.

A gravimetric analytical method has been used in most of these workplace monitoring studies. This method involves the collection of airborne particulates on glass fiber filters and subsequent extraction by solvents, such as benzene or cyclohexane. The extracted fraction of the particulate matter is determined by weighing. As a result of two significant shortcomings of this method, the inability to identify constituents of the airborne particulates and to sample vapor phase components, EPA (1981a) concluded that definitive information was not available on the identity of airborne components of creosote in workplace atmospheres. EPA (1981a) also stated that quantitative estimates of treatment plant worker dermal exposures and quantitative inhalation or dermal exposure data for workers applying creosote in nonpressure treatment scenarios and for downstream workers who install, handle, or contact treated wood products were unavailable. Vapor phase components were found to be an important source of worker exposure in an industrial hygiene survey of wood treatment facilities conducted in Finland. Most of the airborne contaminants in worker breathing zones were in the vapor phase; the proportion of particulate PAHs to total concentration of vapors was <0.5%-3.7% (Heikkila et al. 1987).

Exposure to creosote may also occur during installation of treated poles, during inspection and maintenance operations, and through casual contact (USDA 1980). One of the major end point uses of creosote is treatment of railroad crossties. Since crossties are installed mechanically by railroad companies, workers generally have minimal dermal exposure in this process. Exposure via inhalation, however, is considered to be moderate and consistent during this type of installation procedure. In other situations, crossties may be installed manually, in which case there is consistent moderate to high exposure via skin contact as well as by inhalation. The amount of exposure via skin contact ranges from moderate to high depending on whether workers wear protective clothing. Skin contact is considered minimal for railroad personnel who inspect ties in service as well as for the general public who may have casual contact with creosote-treated crossties. In instances where crossties are used for landscaping purposes, contractors involved in the sale

and installation of freshly treated ties experience consistent moderate exposure via inhalation and minimal to occasionally high exposure for skin contact.

Installation of treated lumber and timbers in structures such as bridges, piers, retaining walls, fences, and barns involves a significant amount of manual contact. Likewise, the installation of switch ties, cross planks, crossarms, block flooring, and fence posts is usually done manually. In these situations, human exposure via inhalation is considered moderate while exposure via skin contact may vary from minimal to high depending on the type of protective equipment used (USDA 1980).

The opportunity for direct dermal contact is particularly high for workers installing treated poles. Activities such as attaching fittings often preclude the use of protective gloves, and as a result of creosote bleeding from the treated poles, the potential for dermal contact of workers performing maintenance operations persists for years after installation (Henningsson 1983).

Exposure of individuals installing treated fence posts and lumber and timbers via inhalation of creosote volatiles (e.g., acenaphthene and naphthalene) can also occur when freshly treated materials are handled under calm, hot, sunny conditions (USDA 1980).

Potential sources of non-occupational human exposure to creosote include contact with creosote-treated wood products (e.g., railroad ties used for landscaping), incineration of creosote-treated scrap lumber, and contact with contaminated environmental media at hazardous waste sites (e.g., ingestion of contaminated groundwater). Direct exposure of homeowners to wood treatment products containing creosote should be limited, since EPA has restricted the sale and use of such products to certified applicators. Industrial sources have noted that there have been no reports or instances of health effects allegations, except for rare reports of skin irritation, resulting from public contact with creosote-treated wood in the last 20 years.

The only information on biological indicators of exposure to creosote found in the available literature involved a study of 1-hydroxypyrene in the urine of a creosote wood treatment plant worker (Jongeneelen et al. 1985).

5.6 POPULATIONS WITH POTENTIALLY HIGH EXPOSURES

Individuals living in the vicinity of hazardous waste sites and abandoned wood treatment plants contaminated with creosote may experience higher levels of exposure than the rest of the general population.

Individuals who apply creosote directly to wood, including farmers, carpenters, and homeowners who come in contact with creosote-treated wood products are believed to be exposed to the highest levels of creosote

components via inhalation and dermal contact. It has been estimated that historically about 4,000 workers may have been routinely exposed and up to 50,000 people may have been intermittently exposed to creosote through its application as a preservative to wood products (USDA 1980). The size of this population has probably decreased over the last few years since EPA restricted the use of creosote to certified applicators.

5.7 ADEQUACY OF THE DATABASE

Section 104(i) of CERCLA directs the Administrator of ATSDR (in consultation with the Administrator of EPA and agencies and programs of the Public Health Service) to assess whether adequate information on the health effects of creosote is available. Where adequate information is not available, ATSDR, in conjunction with the National Toxicology Program (NTP), is required to assure the initiation of a program of research designed to determine the health effects (and techniques for developing methods to determine such health effects) of creosote.

The following categories of possible data needs have been identified by a joint team of scientists from ATSDR, NTP, and EPA. They are defined as substance-specific informational needs that, if met would reduce or eliminate the uncertainties of human health assessment. In the future, the identified data needs will be evaluated and prioritized, and a substance-specific research agenda will be proposed.

5.7.1 Identification of Data Needs

Physical and Chemical Properties. Limited physical property data, such as boiling point and density (see Table 3-2), are available for the coal-tar creosote mixture. Additional physical and chemical property data, such as water solubility, vapor pressure, K_{oc}, and Henry's law constant values would be useful in order to predict the partitioning and transformation of coal-tar creosote components in air, water, and soil. These values are currently not available because their determination is complicated by the fact that creosote is a mixture of variable composition.

Production, Use, Release, and Disposal. Manufacturing methods are well described in the literature. Production figures are limited because of the confidential nature of this business information. Uses of creosote, both coal-tar and beechwood, are well described. Since the use of coal-tar creosote as a wood preservative has been restricted, the potential of the population to be exposed is greatly diminished. The major releases of creosote resulting from treatment processes at wood-preserving plants are known but the levels are not well quantified. Current production, release, and disposal information would assist in identifying the levels of creosote present in the environment and, thus, populations potentially exposed as a result of these processes. Creosote sludge from production processes can be

treated and disposed on-site with proper groundwater monitoring. Creosote can no longer be disposed in hazardous waste landfills unless treated to EPA-specified standards. Creosote-treated wood used in industrial applicators can be burned in an industrial incinerator or boiler; however, treated wood used in domestic or farm applications should be buried rather than incinerated.

Environmental Fate. The limited information available regarding transport and partitioning of creosote components among environmental compartments indicates mobility of PAH, phenol, and heterocyclic constituents of the mixture in water, sorption of PAH components in soils, and bioconcentration of creosote-derived PAHs by terrestrial and aquatic organisms. Biotransformation appears to be the most important degradation process in soils and aquatic environments. Additional data on the transport of volatile creosote components in the atmosphere and the partitioning of creosote released to surface waters and soils would be useful. Quantitative data on the rates of biotransformation in soils, surface water, and groundwater under aerobic and anaerobic conditions would also be useful. The importance of other transformation processes, such as photolysis, photooxidation, and hydrolysis, in relation to biotransformation and rates of transport between media, should also be defined. These data would be useful to help define potential pathways of human exposure and to estimate ambient concentrations of creosote components in environmental media.

Bioavailability from Environmental Media. Very limited information was found in the available literature regarding the uptake of creosote components by living organisms from contaminated water and soil at hazardous waste sites. Studies have been done with persistent constituents (e.g., PAHs) which show that plant uptake from soils is limited, whereas bioconcentration in aquatic organisms from contaminated surface waters has been demonstrated. Data from human and animal studies indicate that creosote components are absorbed following ingestion, inhalation, and dermal exposure to the mixture. PAH and phenol constituents have also been demonstrated to be absorbed following exposure by these routes. However, quantitative information regarding the uptake and bioavailability of creosote from contaminated environmental media is not available. In addition, data are needed on the bioavailability of creosote components following ingestion of creosote-contaminated soils.

Food Chain Bioaccumulation. Very limited information was found in the available literature regarding the biomagnification of creosote-derived compounds among food chain trophic levels. However, PAHs, the major persistent constituents of the commercial mixture, have not been reported to undergo significant biomagnification in aquatic food chains because of the ability of many aquatic organisms to rapidly metabolize and eliminate these compounds (Eisler 1987). Since components of the mixture are not concentrated to high levels in human food items, food chain bioaccumulation does not appear to be an important source of human exposure and no additional information is needed at this time.

5. POTENTIAL FOR HUMAN EXPOSURE

Exposure Levels in Environmental Media. Limited information is available regarding ambient concentrations of creosote-derived PAHs in soils and no data are available regarding atmospheric concentrations of creosote components. Very limited information is available on concentrations of component compounds in surface waters and sediments receiving wood treatment plant effluents. Data are particularly lacking for contaminated media in the vicinity of hazardous waste sites. These data would be useful to estimate the exposure of populations coming into contact with components of the mixture through inhalation of contaminated air, consumption of contaminated surface water or groundwater, or direct dermal contact with environmental media.

Exposure Levels in Humans. A population exists that is potentially exposed to creosote through contact with contaminated media at hazardous waste sites and with treated wood products. A second potentially exposed workforce population exists at wood treatment facilities. Currently no information exists that demonstrates tissue levels of any components of the mixture in these populations. Estimates of human exposure to creosote constituents, or body burdens of creosote components, are complicated by the lack of information on exposure to creosote constituents and levels of creosote-derived components in the environment. Collecting information on tissue levels of creosote components in humans would be necessary to examine the relationship between levels of creosote-derived compounds in the environment, human tissue levels, and subsequent development of health effects.

Exposure Registries. No exposure registries for creosote were located. This compound is not currently one of the compounds for which a subregistry has been established in the ATSDR National Exposure Registry. The compound will be considered in the future when chemical selection is made for subregistries to be established. The information that is amassed in the ATSDR National Exposure Registry facilitates the epidemiological research needed to assess adverse health outcomes that may be related to the exposure to this compound.

5.7.2 On-going Studies

Creosote is currently subject to a FIFRA registration standard and data call-in by EPA. In addition, the Creosote Council II is planning to conduct a research program that includes testing for worker exposure and protection.

Remedial investigation/feasibility studies being conducted at the 31 NPL sites where creosote has been found and at the numerous creosote-contaminated RCRA corrective action sites should provide data on concentrations of the mixture in contaminated media in the vicinity of hazardous waste sites. For example, creosote constituents have been found in surface water impoundments and soil samples taken near wood treatment facility sites in Colorado, Louisiana, Texas, and Montana.

6. ANALYTICAL METHODS

The purpose of this chapter is to describe the analytical methods that are available for detecting and/or measuring and monitoring creosote mixtures in environmental media and in biological samples. The intent is not to provide an exhaustive list of analytical methods that could be used to detect and quantify the components of creosote. Rather, the intention is to identify well-established methods that are used as the standard methods of analyses. Many of the analytical methods used to detect creosote mixtures in environmental samples are the methods approved by federal agencies such as EPA and the National Institute for Occupational Safety and Health (NIOSH). Other methods presented in this chapter are those that are approved by a trade association such as the Association of Official Analytical Chemists (AOAC) and the American Public Health Association (APHA). Additionally, analytical methods are included that refine previously used methods to obtain lower detection limits, and/or to improve accuracy and precision.

The analytical methods used to quantify creosote mixtures in biological and environmental samples are summarized below. Table 6-1 lists the applicable analytical methods for determining components of creosote in biological fluids and tissues and Table 6-2 lists the applicable analytical methods for determining the components of creosote in environmental samples.

6.1 BIOLOGICAL MATERIALS

Coal-tar creosote contains a highly complex mixture of organic components. These include PAHs (polycyclic aromatic hydrocarbons), phenols, sulfur, oxygen and nitrogen heterocycles. Various PAHs have been found to constitute about 85% of coal-tar creosote (Bedient et al. 1984). The levels of creosote in biological materials can therefore be estimated by measuring the PAH content in biological samples. The methods available to measure PAHs in biological materials include gas chromatography equipped with a flame ionization detection (GC/FID), gas chromatography coupled to a mass spectrometry (GC/MS) and high performance liquid chromatography (HPLC). Immunoassay techniques, i.e., enzyme linked immunosorbent assays (ELISA) and ultrasensitive enzyme radio immunoassay (USERIA), ^{32}P-postlabeling and synchronous luminesence spectroscopy (SLS) are methods currently being developed to detect and quantify ultratrace levels of PAH adducts bound covalently to macromolecules (e.g., DNA).

GC/MS and HPLC has been employed to detect creosote-derived PAH complexes at ppt (pg/g) levels in human tissues (Liao et al. 1988; Obana et al. 1981). The detection and quantification of trace levels of PAHs in biological tissues involves extensive and rigorous clean-up procedures including florisil, silica and alumina column chromatography (Liao et al. 1988; Obana et al. 1981).

TABLE 6-1. Analytical Methods for Determining Creosote-Derived PAH Components in Biological Materials

Sample Matrix	Sample Preparation	Analytical Method	Sample Detection Limit	Accuracy	Reference
Adipose tissues	Add 8% benzene in hexane to adipose tissue sample and homogenize; add Na_2O_4, stir and load onto florisil column; elute column with 8% benzene in hexane, concentrate, and analyze	GC/MS	5-50 ng/g	52%-95% recovery	Lisc et al. 1988
Liver	Add S-9 mix (KH_2PO_4 buffer, $MgCl_2$, KCl, glucose-6-phosphate, $NADP^+$) at pH 7.4 to homogenized sample in DMSO and incubate with shaking at 37°C; add ice-cold acetone to stop reaction and extract with ethyl acetate; dry (Na_2SO_4), concentrate, and analyze metabolites	HPLC	No data	No data	Amin et al. 1982
	Mince tissue sample, saponify with KOH/EtOH, and extract with hexane; separate hexane layer and extract with DMSO; pour DMSO layer into 15% aqueous NaCl solution and reextract with hexane; wash hexane layer with water, dry (Na_2SO_4), and concentrate; load extract onto silica or alumina gel column; elute column with hexane followed by diethyl ether:hexane (15:85) and concentrate eluent	HPLC	0.006-0.46 ng/g	No data	Obana et al. 1981
Blood	Collect blood sample in heparinized plastic tube and centrifuge; separate white blood cells and isolate DNA by standard RNase and phenol treatment; assay BPDE-NDA adduct by immunoassay	ELISA	$1x10^{-15}$ mol BPDE per µg DNA	No data	Perera et al. 1988
	Isolate PAH-DNA adduct from white blood cells of blood; digest adduct with radiolabeled (^{32}P)ATP; resolve the radiolabeled adducts on TLC plate and detect by counting radioactivity	^{32}P-Postlabeling	$0.3x10^{-15}$ mol adduct per µg DNA	No data	Philips et al. 1988
	Collect blood sample in heparinized plastic tube and centrifuge; collect lymphocyte cells and isolate BPDE-DNA adduct by standard treatment; analyze BPDE-DNA adduct by immunoassay and SLS	ELISA or USERIA and SLS	0.006-$0.23x10^{-15}$ mol BPDE per µg DNA	No data	Harris et al. 1985

TABLE 6-1 (Continued)

Sample Matrix	Sample Preparation	Analytical Method	Sample Detection Limit	Accuracy	Reference
Urine	Inject animal with radiolabeled benzo(a)pyrene; collect urine sample, add MeOH and load onto C-18 Sep-Pak Column; elute with aqueous MeOH and analyze eluent by HPLC	HPLC	$5x10^{-12}$ mol 7-BPDE-Gua per µg of labeled benzo(a) pyrene	No data	Autrup and Seremet 1986

GC/MS = gas chromatography/mass spectrometry; HPLC = high performance liquid chromatography; ELISA = enzyme linked immunosorbent assay; USERIA = ultra-sensitive enzyme radioimmunoassay; SLS = synchronous luminescence spectroscopy; $NADP^+$ = oxidized nicotinamide adenosine dinucleotide; DMSO = dimethyl sulfoxide; BPDE = benzo(a)pyrene diol epoxide; and Gua = guanine.

TABLE 6-2. Analytical Methods for Determining Creosote-Derived PAH Components in Environmental Samples

Sample Matrix	Sample Preparation	Analytical Method	Sample Detection Limit	Accuracy	Reference
Wooden sleepers (railroad crossties) in play ground	Extract accurately weighed sample with diethylether; filter extract through anhydrous sodium sulfate and evaporate the solvent; perform acid/base/neutral liquid-liquid separations on creosote residue	GC/MS	1-3 ng/ sample	No data	Rotard and Mailahn 1987
Coal-tar creosote	Dissolve sample in cyclohexane and extract with 90% methanol; evaporate extract to dryness; dissolve residue with cyclohexane and extract with nitromethane; evaporate extract to dryness and dissolve residue with small amount of benzene	GC	10 ppm	No data	Lijinsky et al. 1963
	Dissolve sample in methylene chloride at a concentration of ~10% ($^{w}/_{w}$); inject sample solution into g.c. for analysis	GC	No data	No data	Nestler 1974
River sediments	Digest wet sediment sample in boiling EtOH/KOH; partitioned hydrocarbons by extraction into cyclohexane; concentrate extract and load onto florisil column; elute PAH complex from column with 50% methylene chloride/hexane; concentrate sample and analyze	HPLC	No data	No data	Black 1982
Contaminated groundwater	Filter sample through prebaked glass-fiber filters to remove suspended sediments; pass sample through a bonded-phase extraction column; elute trapped organic compound from column with acetonitrile followed by methylene chloride; dry elute with Na_2SO_4 and concentrate with a stream of dry nitrogen	GC/MS	50 µg/L	95% recovery	Rostad et al. 1984
Impregnated wood (workplace)	Heat sample at 60·C in a chamber and load onto an XAD-2 resin column; extract resin with diethyl ether and analyze	GC/MS	0.01-0.005 mg/m^3	82%-102% recovery	Heikkila et al. 1987

TABLE 6-2 (Continued)

Sample Matrix	Sample Preparation	Analytical Method	Sample Detection Limit	Accuracy	Reference
	Collect heated sample on a prewashed (cyclohexane) glass fiber filter; extract sample with cyclohexane and evaporate to dryness; dissolve residue in acetonitrile: water (85:15)	HPLC	8 ng/m^3	No data	Heikkila et al. 1987
Creosote treated wood	Place a small piece of treated wood in a solid sample holder in the heated injection port of G.C.; vaporize the creosote from wood onto column and analyze	GC	No data	No data	Lorenz and Gjovik 1972
Gas and particulate matter (workplace)	Pump sample through a glass fiber filter-amberlite XAD-2 adsorbent sampling system; extract with diethylether in an ultrasonic bath; concentrate ether extract and dilute with acetonitrile and analyze	HPLC	0.005 to 2.5 mg/m^3	87%-102% recovery	Anderson et al. 1983

GC/MS = gas chromatography/mass spectrometry; GC = gas chromatography; HPLC = high-performance liquid chromatography; and PAH = polycyclic aromatic hydrocarbon.

6. ANALYTICAL METHODS

There is considerable evidence that PAHs are enzymatically converted to highly reactive metabolites that bind covalently to macromolecules such as DNA, thereby causing carcinogenesis and mutagenesis in mammalian systems. Thus, benzo(a)pyrene a prototype of the carcinogenic PAHs and the most thoroughly studied PAH, is converted by specific cellular enzymes to the syn- and anti-isomers of 7β, 8δ-dihydroxy-(9δ, 10δ)-epoxy-7,8,9,10-tetrahydro-benzo(a)pyrene (BPDE) and binds covalently to DNA, resulting in formation of the putative BPDE-DNA adduct (Harris et al. 1985; Haugen et al. 1986; Autrup and Seremet 1986).

The ELISA technique has been employed for detecting antibodies in serum bound to BPDE-DNA adducts. The USERIA method involves measuring the immunological response of BPDE-DNA in the presence of rabbit anti-serum, alkaline phosphatase enzyme and radiolabeled para-nitrophenyl phosphate (PNPP). The radioactivity of the hydrolysed tritiated PNPP is measured by a scintillation counter. Both ELISA and USERIA methods has been employed to detect PAH-DNA adducts at 10^{-15} mol levels in the blood and tissues of humans occupationally exposed to PAH (Amin 1982; Harris et al. 1985; Haugen et al. 1986; Newman et al. 1988; Perera et al. 1988). The ^{32}P-postlabeling method involves a 5'-labeling of DNA-adducts that has been digested with nuclease P_1 enzyme system to 3'-mononucleotides. Adducts present in the digest that were resistant to nuclease P_1 were thus labeled with ^{32}P, while unmodified nucleotides were not. The digested DNA adducts are separated by thin-layer chromatography and quantified by scintillation counting. A detection limit of 0.3×10^{-15} mol of PAH adduct per μg of DNA (less than one adduct in 10^7 nucleotides) has been achieved (Philips et al. 1988).

6.2 ENVIRONMENTAL SAMPLES

Coal-tar creosote is a amber to brown oily liquid obtained by the fractional distillation (at 200°–400°C) of crude coal-tars. The commercial product is a highly complex mixture of hundreds of components, including PAHs, phenols, and nitrogen, oxygen, and sulfur heterocycles. The mixture per se cannot be measured. The PAH component fraction is most often used as an indicator of creosote contamination of environmental media. For example, screening for total PAHs is often used at hazardous waste sites when creosote contamination is suspected. The PAH fraction is used in these analyses because it is more persistent than the phenolic fraction, which tends to be more mobile and biodegradable. The methods used to measure total PAHs also detect the nitrogen, oxygen, and sulfur heterocyclic components of the mixture.

The determination of trace amounts of creosote-derived PAHs in environmental samples has been restricted to a limited number of techniques. These include high-performance liquid chromatography (HPLC), gas chromatography equipped with flame ionization detection (GC/FID), and gas chromatography coupled to chemical ionized mass spectrometer (GC/MS).

6. ANALYTICAL METHODS

GC/FID or GC/MS are perhaps the most widely employed analytical techniques for the determination of creosote-derived PAHs in coal-tar, contaminated groundwater, wooden sleepers (railroad crossties), and impregnated wood (Heikkila et al. 1987; Lijinsky et al. 1963; Lorenz and Gjovik 1972; Nestler 1974; Rotard and Mailahn 1987; Rostad et al. 1984). GC/FID is one of the methods recommended by EPA for detection of PAHs in wastewater and solid waste (EPA 1986c).

Heikkila et al. (1987), employed GC/MS technique to determine creosote levels of impregnated wood in the workplace. Detection limits of $10x10^{-6}$ to $50x10^{-6}$ g of creosote per m^3 of sample and recoveries of 82% and 102% were achieved. Heikkila and co-workers measured the components of PAHs with a reverse phase HPLC equipped with fluorescence detection. For the detection of creosote vapors, naphthalene was used as an indicator since it constitutes about 18% by weight of total PAHs in creosote (Andersson et al. 1983; Heikkila et al. 1987). Rotard and Mailahn (1987) used a modified sample extraction procedure to identify various components of creosote extracts in wooden sleepers. The procedure involved the separation of compounds by functional group using acid, base, and neutral conditions. Detected compounds include phenanthrene, anthracene, and naphthalene (neutral extractions), quinoline and isoquinoline (basic extraction), cresols, and phenols (acidic extraction). Rostad and co-workers (1984) developed a method for isolation and detection of creosote in contaminated groundwater. This method involves passing the sample through a small column containing a solid-bonded phase adsorbent, which adsorbs the organic compounds. The authors indicated that this method is simple, faster, and cheaper to perform than the acid/base/neutral extraction procedure. It effectively isolated all organic compounds from contaminated groundwater regardless of polarity, functional group, or water solubility in one step, thereby minimizing hazardous exposure to sample.

HPLC equipped with fluorescence detection has been used to identify creosote-derived PAH complex in river sediments (Black 1982). Complex peaks of PAH compounds were observed using an excited wavelength at 300 nm and an emitted wavelength at 420 nm. Some PAHs, such as phenanthrene and B[a]P, were completely resolved using appropriate chromatographic conditions. Benz[a]anthracene was only partially resolved (absorbance at 254 nm) from a complex of peaks associated with the chrysene-benzene[a]anthracene doublet (Black 1982). Andersson et al. (1983) employed an amberlite XAD-2 adsorbent instead of filter system for isolating organic compounds from gas and particulate matter in creosote impregnating plant. Good sample recoveries and a detection limit of $5x10^{-6}$ g of creosote per m^3 of sample were achieved. HPLC, with either fluorescence or UV detection, is an EPA-recommended method for the analysis of both solid and liquid hazardous waste (EPA, 1986c). At present, HPLC does not achieve the high detection capability of capillary gas chromatography. HPLC however, does offer some advantages for the determination of creosote-derived PAH complex in environmental samples. Firstly, HPLC offers a variety of stationary phases capable of providing unique selectivity for the separation of PAH isomers that are often difficult

to separate by GC. Secondly, ultraviolet absorption and fluorescence detection provide sensitive and more importantly, selective detection of PAHs in HPLC technique.

6.3 ADEQUACY OF THE DATABASE

Section 104(i)5 of CERCLA directs the Administrator of ATSDR (in consultation with the Administrator of EPA and agencies and programs of the Public Health Service) to assess whether adequate information on the health effects of creosote is available. Where adequate information is not available, ATSDR, in cooperation with the National Toxicology Program (NTP), is required to assure the initiation of a program of research designed to determine the health effects (and techniques for developing methods to determine such health effects) of creosote.

The following categories of possible data needs have been identified by a joint team of scientists from ATSDR, NTP, and EPA. They are defined as substance-specific informational needs that, if met would reduce or eliminate the uncertainties of human health assessment. In the future, the identified data needs will be evaluated and prioritized, and a substance-specific research agenda will be proposed.

6.3.1 Identification of Data Needs

Methods for Determining Biomarkers of Exposure and Effect. Creosote is a complex mixture of organic compounds and no methods exist for measuring the parent compound in biological media. However, sensitive methods do exist for measuring components of the creosote mixture. Most of these methods involve detection of PAHs, the predominate components of creosote, and their metabolites. These analytical methods can reliably detect trace levels of PAHs in human tissues and body fluids, making them sensitive enough to measure background levels in the population, as well as levels at which biological effects might occur. PAHs, however, are not unique to creosote exposure. Development of analytical methods sensitive and selective enough to measure possibly unique or unusual components of creosote, or capable of yielding a unique "fingerprint" for the compound, would be useful in monitoring exposures that might occur in work environments and near hazardous waste sites where creosote has been detected.

The analytical methods for measuring PAHs and their metabolites in biological tissues and fluids are sensitive enough to measure levels at which health effects might occur, as well as background levels in the population. Methods also exist for measuring PAH-DNA adducts, and research efforts are underway to develop methods that will detect ultratrace levels of these adducts in biological media. The increased sensitivity may allow correlation between levels of these adducts and observed health effects of creosote-related PAH exposure. There is also a need for methods to quantitatively

correlate monitored levels of various PAHs in biological tissues or fluids to toxic effects in humans. Methods dependent on monitoring PAHs, however, are not specific for creosote exposure. Methods sensitive and selective enough to detect a more unique component or group of components making up the creosote mixture would allow a more accurate assessment of the health effects associated with exposure to monitored levels of creosote.

Methods for Determining Parent Compounds and Degradation Products in Environmental Media. Reliable and sensitive methods are available for measuring PAHs from creosote in soil, water, air, and other environmental media. Exposure to creosote is most likely to occur in industrial settings where creosote is manufactured or used. Creosote-contaminated water and soil are a concern in areas near hazardous waste sites and other areas where creosote might be concentrated. The analytical methods available are accurate and sensitive enough to quantitatively detect PAHs in these and other environmental media, and are effective for estimating creosote levels in media known to be contaminated with this compound. There is a lack of sensitive reliable methods for detecting and measuring creosote degradation products in environmental media. Development of such methods would allow assessment of the possible health effects of exposure to creosote metabolites and assist in determining the level of potential exposure to these products.

6.3.2 On-going Studies

No on-going studies concerning techniques for measuring and determining creosote in biological and environmental samples were reported.

7. REGULATIONS AND ADVISORIES

The international, national, and state regulations and advisories pertaining to creosote in air, water, and food are summarized in Table 7-1. Regulations and advisories pertaining to the components of creosote (i.e., PAHs and phenol) can be found in the ATSDR Toxicological Profiles for these chemicals (ATSDR 1989b, 1990). Creosote is on the list of chemicals appearing in "Toxic Chemicals Subject to Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986" (EPA 1987b).

7. REGULATIONS AND ADVISORIES

TABLE 7-1. Regulations and Guidelines Applicable to Creosote

Agency	Description	Value	References
IARC	Carcinogenic Classification	Group 2A[a]	IARC 1985
	National		
Regulations			
Air:			
OSHA	Permissible Exposure Limit (PEL) Coal-tar Pitch Volatiles (air)	0.2 mg/m3	NIOSH 1985
Water:			
EPA OSW	Listing as hazardous waste from specific sources: bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol	No data	EPA 1981b (40 CFR 261.33)
EPA OERR	Reportable Quantity Notification required when discharges containing sludge are made into waterways	1 lb	EPA 1985 (50 FR 13474)
Other Media:			
EPA OPP	Classified for Restricted Use only by Certified Applicators, and for framing, piling applications and railroad tie repair only	No data	EPA 1986b (51 FR 1334)
	Listing as restricted use pesticide	No data	EPA 1986b (51 FR 1334)
EPA OTS	Toxic chemical release reporting; community right-to-know	Yes	EPA 1987b
TSCA	Prohibit application to wood intended for use in interiors or for use in contact with food, feed, or drinking water	No data	EPA 1984 (49 FR 28666)
Guidelines			
ACGIH	Threshold Limit Value (TLV) 8 hour TWA Coal-tar Pitch Volatiles (benzene soluble fraction)	0.2 mg/m3	ACGIH 1986
	Human Carcinogen (coal-tar pitch volatiles)	Group A1a[b]	ACGIH 1986
NIOSH	10 hour TWA Coal-tar Pitch Volatiles (cyclohexane soluble fraction)	0.1 mg/m3	NIOSH 1985
	Immediately Dangerous to Life or Health (IDLH) Level Coal-tar Pitch Volatiles	400 mg/m3	NIOSH 1985

7. REGULATIONS AND ADVISORIES

Table 7-1 (Continued)

Agency	Description	Value	References
State Regulations and Guidelines			
State environmental agencies	Acceptable ambient air concentration guidelines and standards for several states		NATICH 1988
	Coal-tar Pitch Volatiles:		NATICH 1988
	Connecticut	2 μg/m3 (8 hr avg.)	
	Kansas	0.0161 μg/m3 (annual avg.)	
	North Carolina	0 μg/m3 (24 hr avg.)	
	Nevada	0.005 μg/m3 (8 hr avg.)	
	Pennsylvania	0.48 μg/m3 (1 yr avg.)	
	Virginia	2 μg/m3 (24 hr avg.)	

[a]Group 2A -- Probable Human Carcinogen.
[b]Group A1a -- Recognized Human Carcinogen.

ACGIH = American Conference of Governmental Industrial Hygienists; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; IDLH = Immediately Dangerous to Life and Health; NATICH = National Air Toxics Information Clearinghouse; NIOSH = National Institute for Occupational Safety and Health; OERR = Office of Emergency and Remedial Response; OSHA = Occupational Safety and Health Administration; OPP = Office of Pesticide Programs; OSW = Office of Solid Waste; OTS = Office of Toxic Substances; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; TPQ = Threshold Planning Quantity; TWA = Time-Weighted Average; TSCA = Toxic Substances Control Act.

8. REFERENCES

*ACGIH. 1986. Documentation of the threshold limit values and biological exposure indices. American Conference of Governmental Industrial Hygienists, Cincinnati, OH.

*American Wood Preservers' Association. 1988. AWPA book of standards. Washington, D.C: American Wood Preservers' Association.

*American Wood Preservers Institute. 1988. Questions and answers about pressure treated wood. American Wood Preservers Institute, Vienna, VA.

*Amin S, LaVoie EJ, Hecht SS. 1982. Identification of metabolites of benzo[b]fluoranthene. Carcinogenesis 3:171-174.

*Andersson K, Levin J, Nilsson C. 1983. Sampling and analysis of particulate and gaseous polycyclic aromatic hydrocarbons from coal-tar sources in the working environment. Chemosphere 12:197-207.

*ATSDR. 1990. Toxicological Profile for Polycyclic Aromatic Hydrocarbons. Agency for Toxic Substances and Disease Registry. Atlanta, GA. [Draft for Public Comment]

*ATSDR. 1989a. Toxicological Profile for Pentachlorophenol. Agency for Toxic Substances and Disease Registry. Atlanta, GA.

*ATSDR. 1989b. Toxicological Profile for Phenol. Agency for Toxic Substances and Disease Registry. Atlanta, GA.

*Attalla MN. 1968. Effect of beechwood creosote and chloramine on periapical tissue of dogs. J Can Dent Assoc 34:190-195.

*Autrup H, Seremet T. 1986. Excretion of benzo[a]pyrene-Gua adduct in the urine of benzo[a]pyrene-treated rats. Chem Biol Interact 60:217-226.

*Baker D, Fannick N. 1981. Health Hazard Evaluation; New York Port Authority; Brooklyn, New York. Department of Health and Human Services, National Institute for Occupational Safety and Health, Cincinnati, OH. HHE 80-238-931.

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*cited in text

8. REFERENCES

*Ball J. 1987. Soil and groundwater contamination at wood preserving plants. In: Bell JM, ed. Proceedings of the 41st Industrial Waste Conference. May 13, 14, 15, 1986. Purdue University. Chelsea, MI: Lewis Publishers, Inc, 347-351.

*Ball J, Norton CM, Andrews JW. 1985. Environmental feasibility of using creosote contaminated soil and sludges in roadway paving structures. In: Bell JM, ed. Proceedings of the 39th Industrial Waste Conference. May 1984. Purdue University. Chelsea, MI: Lewis Publishers, Inc, 361-368.

*Barnes D, Bellin J, DeRosa C, et al. 1987. Reference dose (RfD): Description and use in health risk assessments. Volume 1, Appendix A: Integrated risk information system supportive documentation. Cincinnati, OH: US Environmental Protection Agency, Office of Health and Environmental Assessment. EPA 600/8-86/0322.

*Bartosek I, Guaitani A, Modica R, et al. 1984. Comparative kinetics of oral benz(a)anthracene, chrysene and triphenylene in rats: Study with hydrocarbon mixtures. Toxicol Lett 23:333-339.

*Bedient PB, Rodgers AC, Bouvette TC, et al. 1984. Groundwater quality at a creosote waste site. Groundwater 22:318-329.

*Bennett JL, Updegraff DM, Pereira WE, et al. 1985. Isolation and identification of four species of quinoline-degrading pseudomonads from a creosote-contaminated site at Pensacola, Florida. Microbios Letters 29:147-154.

*Black JJ. 1982. Movement and identification of a cresote-derived PAH complex below a river pollution point source. Arch Environm Contam Toxicol 11:161-166.

*Borden RC. 1986. Influence of adsorption and oxygen limited biodegradation on the transport and fate of a creosote plume: Field methods and simulation techniques [abstract]. Dissertation Abstracts International 47:204.

*Borthwick PW, Patrick JM. 1982. Use of aquatic toxicology and quantitative chemistry to estimate environmental deactivation of marine-grade creosote in seawater. Environ Toxicol Chem 1:281-288.

*Bos RP, Hulshof CTJ, Theuws JLG, et al. 1983. Mutagenicity of creosote in the Salmonella/microsome assay. Mutat Res 119:21-25.

*Bos RP, Hulshof CTJ, Theuws JLG, et al. 1984a. Genotoxic exposure of workers creosoting wood. Br J Ind Med 41:260-262.

8. REFERENCES

*Bos RP, Jongeneelen FJ, Theuws JLG, et al. 1985. Detection of volatile mutagens in creosote and coal-tar. Mutat Res 156:195-198.

*Bos RP, Prinsen WJC, van Rooy JGM, et al. 1987. Fluoranthene, a volatile mutagenic compound, present in creosote and coal-tar. Mutat Res 187:119-125.

*Bos RP, Theuws JL, Leijdekkers Ch. M, et al. 1984b. The presence of the mutagenic polycyclic aromatic hydrocarbons benzo[a]pyrene and benz[a]anthracene in creosote Pl. Mutat Res 130:153-158.

*Boutwell RK, Bosch DK. 1958. The carcinogenicity of creosote oil: Its role in the induction of skin tumors in mice. Cancer Res 18:1171-1175.

*Bowman CE, Muhleman MF, Walters E. 1984. A fatal case of creosote *poisoning. Postgrad Med J 60:499-500.*

*Bureau of [illegible] Census. 1984a. US imports for consumption and general imports [illegible]. Washington D.C: Government Printing Office, 1-327.

*Bureau of the Census. 1984b. US exports, schedule E. Washington, D.C: Government Printing Office, 2-66.

[illegible] Creosote Council II. Written communication. Public comment on Toxicological Profile for Creosote. Pittsburgh, PA. (Feb 16).

*C[illegible] MJ. 1940. Studies in carcinogenesis. XI. [illegible]s in mice painted with 3:4-benzpyrene and creosote [illegible]ti[illegible] [illegible]achol 16:301-312.

*Chang [illegible]. The fecal excretion of polycyclic hydrocarbons following their adm[illegible]tion to the rat. J Biol Chem 151:93-99.

*Calabrese EJ. 1978. Pollutants and high-risk groups. The biological basis of increased human susceptibility to environmental and occupational pollutants. New York: John Wiley and Sons, 24, 79-80, 187, 193.

*Chrostek WJ. 1980. Health hazard evaluation determination report No. HE-79-43-663, Harbison- Walker refractories, Clearfield, Pennsylvania. U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, Cincinnati, OH.

*Clayton GD, Clayton FE. 1981. Patty's Industrial Hygiene and Toxicology. Vol. 2A, 3rd ed. New York: John Wiley Sons, 2603.

*Cookson HA. 1924. Epithelioma of the skin after prolonged exposure to creosote. Brit Med J 68:368.

8. REFERENCES

*Dahl AR, Coslett DS, Bond JA, et al. 1985. Metabolism of benzo[a]pyrene on the nasal mucosa of Syrian hamsters: Comparison to metabolism by other extrahepatic tissues and possible role of nasally produced metabolites in carcinogenesis. JNCI 75:135-139.

*Dean AG, Imrey HH, Dusich K, et al. 1988. Adjusting morbidity ratios in two communities using risk factor prevalence in cases. Am J Epidemiol 127:654-662.

*DOT. 1985. Chemical hazard response information system (CHRIS) hazard assessment handbook. Washington, D.C: Department of Transportation, US Coast Guard.

*Dunn BP, Stich HF. 1976. Monitoring procedures for chemical carcinogens in coastal waters. J Fisheries Res Board Canada 33:2040-2046.

*Ehrlich GG, Godsy EM, Goerlitz DF, et al. 1983. Microbial ecology of a creosote-contaminated aquifer at St. Louis Park, MN. Developments in industrial microbiology, Proceedings of the Thirty-Ninth General Meeting of the Society for Industrial Microbiology 24:235-245.

*Eisler R. 1987. Polycyclic aromatic hydrocarbon hazards to fish, wildlife, and invertebrates: A synoptic review. Washington, D.C: US Fish and Wildlife Servide, US Department of the Interior. Biological Report 85. Contaminant Hazard Review Report No. 11.

*Elder JF, Dresler PV. 1988. Accumulation and bioconcentration of polycyclic aromatic hydrocarbons in a nearshore estuarine environment near a Pensacola (Florida) creosote contamination site. Environmental Pollution 49:117-132.

*Engineering Science. 1986. Emissions test report air toxics sampling at Wyckoff, Inc., Bainbridge Island, Washington. US Environmental Protection Agency, Seattle, Washington. EPA 910/9-86-149.

*EPA. 1978. Coal-tar, creosote, coal-tar neutral oil: Position Document 1. US Environmental Protection Agency, Special Pesticide Review Division, Washington, D.C. EPA/SPRD-80/82.

*EPA. 1981a. Wood preservative pesticides. Creosote, pentachlorophenol and the inorganic arsenicals (wood uses). Position Document 2/3. US Environmental Protection Agency, Office of Pesticide Programs, Washington, D.C. EPA 540/9-82-004.

EPA. 1981b. Creosote, pentachlorophenol, and the inorganic arsenicals: Preliminary notice of determination concluding the rebuttable presumption against registration of the wood-preservative uses of pesticide products. Federal Register 46:13020-13036.

8. REFERENCES

EPA. 1984. Wood preserving pesticides: Creosote, pentachlorophenol and the inorganic arsenicals. Position Document 4. US Environmental Protection Agency, Office of Pesticide Programs, Washington, D.C. EPA 540/9/84-003.

*EPA. 1985. Part 302-Designation, reportable quantities, and notification. Federal Register., 13474-13513.

*EPA. 1986a. Reference values for risk assessment (final draft). Cincinnati, OH: US Environmental Protection Agency. ECAO-CIN-447.

*EPA. 1986b. Creosote, pentachlorophenols, and inorganic arsenicals: Amendment of notice of intent to cancel registrations. Federal Register 51:1334-1348.

*EPA. 1986c. Test methods for evaluating solid waste. Volume IB: Laboratory manual physical/chemical methods. 3rd ed. Washington, DC: US Environmental Protection Agency, Office of Solid Waste and Emergency Response. SW-846.

*EPA. 1987a. Health effects assessment for creosote. US Environmental Protection Agency, Cincinnati, OH. EPA/600/8-88/025.

*EPA. 1987b. US Environmental Protection Agency. Federal Register 52:21152-21177.

*EPA. 1990. Land disposal restrictions for third third scheduled wastes. Federal Register 55(106):22520-22720.

*Fellows EJ. 1937. Studies on calcium creosotate: III. The elimination of volatile phenols in rabbit urine after the administration of "calcium creosotate solution" and after creosote solution. J Pharmacol Exp Ther 60:183-188.

*Fellows EJ. 1939a. Studies on calcium creosotate. IV. Observations on its use in pulmonary tuberculosis. Am J Med Sci 197:683-690.

*Fellows EJ. 1939b. Calcium creosotate: V. Nature of phenols eliminated in urine. Proc Society Exp Biol Med 42:103-107.

*Flodin U, Fredriksson M, Persson B. 1987. Multiple myeloma and engine exhausts, fresh wood, and creosote: a case- referent study. Am J Ind Med 12:519-529.

*Fraumeni JF Jr, ed. 1975. Persons at high risk of cancer. An approach to cancer etiology and control. New York, NY: Academic Press, Inc., 172, 187-189.

8. REFERENCES

FSTRAC. 1988. Summary of state and federal drinking water standards and guidelines. Chemical Communication Subcommittee, Federal-State Toxicology and Regulatory Alliance Committee (FSTRAC) data base, Washington, D.C. March, 1988.

*Geddie JE, Amin S, Huie K, et al. 1987. Formation and tumorigenicity of benzo[b]fluoranthene metabolites in mouse epidermis. Carcinogenesis 8:1579-1584.

*Gile JD, Collins JC, Gillett JW. 1982. Fate and impact of wood preservatives in a terrestrial microcosm. J Agric Food Chem 30:295-301.

Goerlitz DF. n.d. Reexamination of the occurrence and distribution of creosote contaminants in the ground water at Pensacola, Florida. US Geological Survey toxic waste--ground water contamination program, fiscal year 1986, program overview and selected abstracts presented at the toxic waste technical meeting, Cape Cod, MA, October 21-25, 1985. US Geological Survey open file report., 86-481. (In press).

*Goerlitz DF, Troutman DE, Godsy EM, et al. 1985. Migration of wood-preserving chemicals in contaminated groundwater in a sand aquifer at Pensacola, Florida. Environ Sci Technol 19:955-961.

*Haldin-Davis H. 1935. Multiple warts in a creosote worker. Proceedings of the Royal Society of Medicine 29:89-90.

*Hanlon G. 1938. Creosote poisoning of cattle. Aust Vet J 14:73.

*Harris C, Vahakangs K, Newman MJ, et al. 1985. Detection of benzo[a]pyrene diol epoxide-DNA adducts in peripheral blood lymphocytes and antibodies to the adducts in serum from coke oven workers. Proc Natl Acad Sci USA 82:6672-6676.

*Haugen A, Becher G, Benestad C, et al. 1986. Determination of polycyclic aromatic hydrocarbons in the urine, benzo[a]pyrene diol epoxide-DNA adducts in lymphocyte DNA, and antibodies to the adducts in sera from coke oven workers exposed to measures amounts of polycyclic aromatic hydrocarbons in the work atmosphere. Cancer Res 46:4178-4183.

*Hawley GG. 1977. The condensed chemical dictionary. New York: Van Nostrand Reinhold Company, 214, 237.

*Hecht SS, Grabowski W, Groth K. 1979. Analysis of faeces for B[a]P after consumption of charcoal-broiled beef by rats and humans. Food Cosmet Toxicol 17:223-227.

*Heikkila PR, Hameila M, Pyy L, et al. 1987. Exposure to creosote in the impregnation and handling of impregnated wood. Scand J Work Environ Health 13:431-437.

8. REFERENCES

*Helmrich SP, Shapiro S, Rosenberg L. 1983. Risk factors for breast cancer. Am J Epidemiol 117:35-45.

*Henningsson B. 1983. Environmental protection and health risks in connection with the use of creosote. Holz als Roh- und Werkstoff 41:471-475.

*Henry SA. 1946. Cancer of the scrotum in relation to occupation. London: Humphrey Milford Oxford University Press, 8-105.

*Henry SA. 1947. Occupational cutaneous cancer attributable to certain chemicals in industry. Br Med Bull 4:389-401.

*Hickok EA, Erdmann JB, Simonett MJ, et al. 1982. Groundwater contamination with creosote wastes. In: Johnson WK, Martenson DR, eds. National Conference on Environmental Engineering. Minneapolis, Minnesota: American Society of Civil Engineers, 430-437.

Hochman H. 1970. Tailoring a wood treatment for the marine environment. Proceedings of the American Wood Preservers' Association 66:38-42.

*Hopkins RP, Brooks CJW, Young L. 1962. Biochemical studies of toxic agents. 13. The metabolism of acenaphthylene. Biochem J 82:457-466.

*HSDB. 1988. Hazardous Substances Data Bank. National Library of Medicine, National Toxicology Information Program, Bethesda, MD. December 5, 1988.

*IARC. 1973. Monographs on the evaluation of carcinogenic risk of chemicals to man. Certain polycyclic aromatic hydrocarbons and heterocyclic compounds. Vol. 3, Lyon, France: World Health Organization, International Agency for Research on Cancer, 22-42.

*IARC. 1985. Monographs on the evaluation of the carcinogenic risk of chemicals to man. Polynuclear aromatic compounds, part 4, bitumens, coal-tars and derived products, shale oils and soots. Vol. 35, Lyon, France: World Health Organization, International Agency for Research on Cancer, 104-140.

*Ingram LL Jr, McGinnis GD, Gjovik LR, et al. 1982. Migration of creosote and its components from treated piling sections in a marine environment. Proceedings of the American Wood-Preservers' Association 78:120-128.

*Jonas AD. 1943. Creosote burns. J Ind Hyg Toxicol 25:418-420.

*Jongeneelen FJ, Anzion RB, Leijdekkers Ch. M, et al. 1985. 1-Hydroxypyrene in human urine after exposure to coal-tar and a coal-tar derived product. Int Arch Occup Environ Health 57:47-55.

8. REFERENCES

*Leach CW, Weinert JJ. 1976. A report to the Environmental Task Group, Sub-Group No. 5 (Creosote) of the American Wood Preservers Institute.

*Lenson N. 1956. Multiple cutaneous carcinoma after creosote exposure. N Engl J Med 254:520-522.

*Leonforte JF. 1986. Contact dermatitis from Larrea (creosote bush). J Am Acad Dermatol 14:202-207.

*Liao W, Smith WD, Chiang TC. 1988. Rapid, low-cost cleanup procedure for determination of semivolatile organic compounds in human bovine adipose tissues. J Assoc Off Anal Chem 71:742-747.

*Lijinsky W, Domsky I, Mason G, et al. 1963. The chromatographic determination of trace amounts of polynuclear hydrocarbons in petrolatum, mineral oil, and coal-tar. Anal Chem 35:952-956.

*Lijinsky W, Saffiotti U, Shubik P. 1957. A study of the chemical constitution and carcinogenic action of creosote oil. JNCI 18:687-692.

*Lorenz LF, Gjovik LR. 1972. Analyzing creosote by gas chromatography: Relationship to creosote specifications. Proceedings of the American Wood-Preservers' Association 68:32-42.

*Mackenzie S. 1898. Yellow pigmentary stains of hemorrhagic origin and a case of tar eruption. Brit J Dermatol 10:417.

*Markel HL, Ligo RN, Lucas JB. 1977. Health Hazard Evaluation/Toxicity Determination Report 75-117-372, Koppers Company, Incorporated, North Little Rock, Arkansas.

*Maugham WZ, Muller SA, Perry HO, et al. 1980. Incidence of skin cancers in patients with atopic dermatitis treated with coal-tar: A 25-year follow-up study. J Am Acad Dermatol 3:612-615.

*McKinlay R. 1933. The creosote treatment of lobar pneumonia. J Royal Army Med Corps 61:54-55.

*Middleton AC. 1984. Land disposal and spill site environments. Basic Life Sci 28:137-149.

*Mitchell AD, Tajiri DT. 1978. In vitro mammalian mutagenicity assays of creosote P1 and P2. SRI International. Unpublished report for EPA. 68-01-2458.

*Miyazato T, Matsumoto M, Uenishi C, et al. 1981. Studies on the toxicity of beechwood creosote. I. Acute and subacute toxicity in mice and rats. Oyo Yakuri Pharmacometrics 21:899-919.

8. REFERENCES

*Miyazato T, Suzuki A, Nohno M, et al. 1984a. Studies on the toxicity of beechwood creosote. 2. Chronic toxicity and carcinogenicity in mice. Oyo Yakuri Pharmacometrics 28:909-924.

*Miyazato T, Suzuki A, Uenishi C, et al. 1984b. Studies on the toxicity of beechwood creosote. 3. Chronic toxicity and carcinogenicity in rats. Oyo Yakuri Pharmacometrics 28:925-947.

*Modica R, Fiume M, Guaitani A, et al. 1983. Comparative kinetics of benz(a)anthracene, chrysene, and triphenylene in rats after oral administration. I. Study with single compounds. Toxicol Lett 18:103-109.

Morse MA, Baird WM, Carlson GP. 1987. Distribution, covalent binding, and DNA adduct formation of 7-12- dimethylbenz(a)anthracene in SENCAR and BALB/c mice following topical and oral administration. Cancer Res 47:4571-4575.

*NAS/NRC. 1989. Biologic markers in reproductive toxicology. Washington, DC: National Academy of Sciences, National Research Council, National Academy Press.

*NATICH. 1988. National Air Toxics Information Clearinghouse (database): Report on state, local, and EPA air toxics activities. US Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC. July, 1988.

Neff JM. 1980. Polycyclic aromatic hydrocarbons in the aquatic environment. Applied Science Publishers.

*Nestler FHM. 1974. Characterization of wood-preserving coal-tar creosote by gas-liquid chromatography. Anal Chem 46:46-53.

Neuman WR. 1988. Hazard review. Creosote. Health Information for Hazardous Materials Emergencies 4:1-3.

*Newman MJ, Light BA, Weston A, et al. 1988. Detection and characterization of human serum antibodies to polycyclic aromatic diol-epoxide DNA adducts. J Clin Invest 82:145-153.

*NIOSH. 1985. Pocket guide to chemical hazards. Washington, D.C: US Department of Health and Human Services, National Institute for Occupational Safety and Health, 84.

*Obana H, Hori S, Kashimoto T, et al. 1981. Polycyclic aromatic hydrocarbons in human fat and liver. Bull Environ Contam Toxicol 27:23-27.

*O'Donovan WJ. 1920. Epitheliomatous ulceration among tar workers: Br J Dermatol Syphilis 32:215-252.

8. REFERENCES

Panja D. 1941. Treatment of tuberculosis verrucosa cutis by local application of creosote and salicylic acid. Ind Med Gazette 76:70-72.

*Pereira WE, Rostad CE. 1986. Investigations of organic contaminants derived from wood-treatment processes in a sand and gravel aquifer near Pensacola, Florida. Selected Papers in the Hydrologic Sciences 1986. US Geological Survey, Washington, D.C. US Geological Survey Water-Supply Paper 2290., 65-80.

*Pereira WE, Rostad CE, Garbarino JR, et al. 1983. Groundwater contamination by organic bases derived from coal-tar wastes. Environ Toxicol Chem 2:283-294.

*Perera FP, Hemminki K, Young TL, et al. 1988. Detection of polycyclic aromatic hydrocarbon-DNA adducts in white blood cells of foundry workers. Cancer Res 48:2288-2291.

*Petridou-Fischer J, Whaley SL, Dahl AR. 1988. In vivo metabolism of nasally instilled benzo[a]pyrene in dogs and monkeys. Toxicology 48:31-40.

*Pfitzer EA, Gross P. 1964. Range-finding toxicity tests on creosote (64-451B) for Koppers Company, Inc. Industrial Hygiene Foundation of America, Inc., Mellon Institute, Pittsburgh, PA. (Unpublished report)

*Philips DH, Hemminki K, Alhonen A, et al. 1988. Monitoring occupational exposure to carcinogens: detection by 32P- postlabeling of aromatic DNA adducts in white blood cells from iron foundry workers. Mutat Res 204:531-541.

*Pittelkow MR, Perry HO, Muller SA, et al. 1981. Skin cancer in patients with psoriasis treated with coal-tar. Arch Dermatol 117:465-468.

*Poel WE, Kammer AG. 1957. Experimental carcinogenicity of coal-tar fractions: The carcinogenicity of creosote oils. JNCI 18:41-55.

*Povey AC, Brouet I, Bartsch H, et al. 1987. Binding of benzo[a]pyrene metabolites in the rat intestinal lumen by magnetic polyethyleneimine microcapsules following an intragastric dose of [14C]benzo[a]pyrene. Carcinogenesis 8:825-831.

*Rahman A, Barrowman JA, Rahimtula A. 1986. The influence of bile on the bioavailability of polynuclear aromatic hydrocarbons from the rat intestine. Can J Physiol Pharmacol 64:1214-1218.

*Rees ED, Mandelstam P, Lowry JQ, et al. 1971. A study of the mechanism of intestinal absorption of benzo(a)pyrene. Biochim Biophys Acta 225:96-107.

8. REFERENCES

*Rice E, Hosted TJ Jr, DeFloria MC, et al. 1986. Tumor-initiating activity of major in vivo metabolites of indeno[1,2,3- cd]pyrene on mouse skin. Carcinogenesis 7:1761-1764.

*Rivers PM. 1990. Comments on Toxicological Profile on Creosote submitted by Paul M. Rivers, Reilly Industries, Inc., February 16, 1990.

Roberts SJ, Hedrick HG. 1979. Degradation of creosote phenolic compounds by selected bacterial isolates. Dev Ind Microbiol 20:471-478.

*Robinson SK. 1938. An instance of hypertension apparently due to the taking of creosote for a period of nine years. Ill Med J 74:278-279.

*Roe FJC, Bosch D, Boutwell RK. 1958. The carcinogenicity of creosote oil: The induction of lung tumors in mice. Cancer Res 18:1176-1178.

*Rostad CE, Pereira WE, Ratcliff SM. 1984. Bonded-phase extraction column isolation of organic compounds in groundwater at a hazardous waste site. Anal Chem 56:2856-2860.

*Rostad CE, Pereira WE. 1987. Creosote compounds in snails obtained from Pensacola Bay, Florida, near an onshore hazardous-waste site. Chemosphere 16:10-12.

*Rotard W, Mailahn W. 1987. Gas chromatographic-mass spectrometric analysis of creosote extracted from wooden sleepers installed in playgrounds. Anal Chem 59:65-69.

*RTECS. 1988. Registry of Toxic Effects of Chemical Substances Data Base.

*Sall RD, Shear MJ. 1940. Studies in carcinogenesis. XII. Effect of the basic fraction of creosote oil on the production of tumors in mice by chemical carcinogens. JNCI 1:45-55.

*Samson JG, Limkako G. 1923. Preliminary report on creosote as an adjuvant in leprosy treatment. Philippine J Sci 23:515-529.

*Sanders CL, Skinner C, Gelman RA. 1986. Percutaneous absorption of 7,10[14C]benzo[a]pyrene and 7,12[14C]- dimethylbenz[a]anthracene in mice. J Environ Pathol Toxicol 7:25-34.

*Santodonato J, Bosch S, Meylan W, et al. 1985. Monographs on human exposure to chemicals in the workplace: Creosote. National Cancer Institute, Division of Cancer Etiology, Bethesda, MD. PB86-147303.

*Schipper IA. 1961. Toxicity of wood preservatives for swine. Am J Vet Res 22:401-405.

8. REFERENCES

*Simmon VF, Shepherd S. 1978. In vitro microbiological mutagenicity assay of creosote P1 and Creosote P2. Final Report. SRI International, Menlo Park, California. Project LSU-7558. Contract No. 68-02-2947.

*Smale BC. 1977. Coal-tar creosote and coal-tar pesticides as candidates for RPAR. Unpublished EPA report.

*Smith GA, Nickels JS, Davis JD, et al. 1985. Indices identifying subsurface microbial communities that are adapted to organic pollution. US Environmental Protection Agency, Office of Research and Development, Ada, OK. EPA/600/D-85/055.

*Smith LM. 1937. Dermatitis caused by creosote bush. J Allergy 8:187-188.

*SRI International. 1977. Criteria for recommended standard. Occupational exposure to coal-tar products. Department of Health and Human Services, National Institute for Occupational Safety and Health, Cincinnati, OH. NIOSH-78-107.

*Srivastava VK, Chaub 'vastava PK, et al. 1986. Fetal translocation and metabolism of 'rom coal fly ash given intratracheally to pregnant rats. Health 18:459-469.

*Stevens M t al. 1943. On the expectorant action of creosot 'ssoc J 48:124-127.

*inogenic and carcinogenic sured at the cellular level in

arcinogens. Antibiot Chemother

fr carcinogenesis in hamsters ithracene. Conference on boratory

*Povey AC, metabolites in microcapsules fol Carcinogenesis 8:825- mary of health eport prepared for irgh, PA. February

*Rahman A, Barrowman JA, Rahi bioavailability of polynuclear ar Can J Physiol Pharmacol 64:1214-1218. 'ary survey of rest Products

*Rees ED, Mandelstam P, Lowry JQ, et al. 19 intestinal absorption of benzo(a)pyrene. Biochi nal Safety Studies,

8. REFERENCES

*Todd AS, Timbie CY. 1980. Industrial hygiene report comprehensive survey of wood preservative treatment facility at Santa Fe Centralized Tie Plant, Somerville, Texas. National Institute for Occupational Safety and Health, Division of Surveillance, Hazard Evaluations and Field Studies, Cincinnati, OH. NTIS PB83-133892.

*Todd AS, Timbie CY. 1981. Industrial hygiene report, comprehensive survey of wood preservative treatment facility at Cascade Pole Company, McFarland Cascade, Tacoma, Washington. National Institute for Occupational Safety and Health, Division of Surveillance, Hazard Evaluations and Field Studies, Cincinnati, OH. NTIS PB82-174160.

Troutman DE, Godsy EM, Goerlitz DF, et al. 1984. Phenolic contamination in the sand-and-gravel aquifer from a surface impoundment of wood treatment wastes, Pensacola, Florida. US Geological Survey water-resources investigations report., 82-4230.

*USDA. 1980. The biologic and economic assessment of pentachlorophenol, inorganic arsenicals, creosote. Volume 1: Wood preservatives. US Department of Agriculture, Washington, D.C. Technical Bulletin number 1658-1., 193-227.

*USITC. 1987. Synthetic organic chemicals. United States production and sales, 1986. United States International Trade Commission, Washington, D.C. USITC Publication 2009.

*USITC. 1988. Synthetic organic chemicals. United States production and sales, 1987. United States International Trade Commission, Washington, D.C. USITC Publication 2118.

*VIEW database. 1989. Agency for Toxic Substances and Disease Registry (ATSDR), Office of External Affairs, Exposure and Disease Registry Branch, Atlanta, GA. June 28, 1989. (Map based on VIEW database, June 12, 1989).

*von Rumker R, Lawless EW, Minersa AF. 1975. Case study no. 20: Creosote. Production, distribution and environmental impact potential of selected pesticides. US Environmental Protection Agency, Washington, D.C. EPA 540/1-74-001.

Webb DA. 1975. Some environmental aspects of creosote. Proceedings of the American Wood-Preservers' Association 71:176-181.

*Weiss G. 1986. Hazardous chemicals data book. 2nd ed. Park Ridge, NJ: Noyes Data Corp, 306.

*Weyand EH, Bevan DR. 1987. Covalent binding of benzo[a]pyrene to macromolecules in lung and liver of rats following intratracheal instillation. Cancer Lett 36:149-159.

8. REFERENCES

*Wilson JT, McNabb JF, Cochran JW, et al. 1986. Influence of microbial adaptation on the fate of organic pollutants in ground water. Environ Toxicol Chem 4:721-726.

*Windholz M. 1983. The Merck index. 10th ed. Rahway, NJ: Merck and Co., Inc, 2549-2550.

*Wrench R, Britten AZ. 1975. Evaluation of coal-tar fractions for use in psoriasiform diseases using the mouse tail test. III. High boiling tar oil acids. Br J Dermatol 93:67-74.

*Wright CW, Later DW, Pelroy RA et al. 1985. Comparative chemical and biological analysis of coal-tar based therapeutic agents to other coal-derived materials. J Appl Toxicol 5(2):80-89.

*Yamazaki H, Terada M, Tsuboi A, et al. 1987. Distribution and binding pattern of benzo(a)pyrene in rat liver, lung and kidney constituents after oral administration. Toxicol Environ Chem 15:71-81.

9. GLOSSARY

Acute Exposure -- Exposure to a chemical for a duration of 14 days or less, as specified in the toxicological profiles.

Adsorption Coefficient (Koc) -- The ratio of the amount of a chemical adsorbed per unit weight of organic carbon in the soil or sediment to the concentration of the chemical in solution at equilibrium.

Adsorption Ratio (Kd) -- The amount of a chemical adsorbed by a sediment or soil (i.e., the solid phase) divided by the amount of chemical in the solution phase, which is in equilibrium with the solid phase, at a fixed solid/solution ratio. It is generally expressed in micrograms of chemical sorbed per gram of soil or sediment.

Bioconcentration Factor (BCF) -- The quotient of the concentration of a chemical in aquatic organisms at a specific time or during a discrete time period of exposure divided by the concentration in the surrounding water at the same time or during the same period.

Cancer Effect Level (CEL) -- The lowest dose of chemical in a study, or group of studies, that produces significant increases in the incidence of cancer (or tumors) between the exposed population and its appropriate control.

Carcinogen -- A chemical capable of inducing cancer.

Ceiling Value -- A concentration of a substance that should not be exceeded, even instantaneously.

Chronic Exposure -- Exposure to a chemical for 365 days or more, as specified in the Toxicological Profiles.

Developmental Toxicity -- The occurrence of adverse effects on the developing organism that may result from exposure to a chemical prior to conception (either parent), during prenatal development, or postnatally to the time of sexual maturation. Adverse developmental effects may be detected at any point in the life span of the organism.

Embryotoxicity and Fetotoxicity -- Any toxic effect on the conceptus as a result of prenatal exposure to a chemical; the distinguishing feature between the two terms is the stage of development during which the insult occurred. The terms, as used here, include malformations and variations, altered growth, and in utero death.

EPA Health Advisory -- An estimate of acceptable drinking water levels for a chemical substance based on health effects information. A health advisory is

not a legally enforceable federal standard, but serves as technical guidance to assist federal, state, and local officials.

Immediately Dangerous to Life or Health (IDLH) -- The maximum environmental concentration of a contaminant from which one could escape within 30 min without any escape-impairing symptoms or irreversible health effects.

Intermediate Exposure -- Exposure to a chemical for a duration of 15-364 days as specified in the Toxicological Profiles.

Immunologic Toxicity -- The occurrence of adverse effects on the immune system that may result from exposure to environmental agents such as chemicals.

In Vitro -- Isolated from the living organism and artificially maintained, as in a test tube.

In Vivo -- Occurring within the living organism.

Lethal Concentration$_{(LO)}$ (LC_{LO}) -- The lowest concentration of a chemical in air which has been reported to have caused death in humans or animals.

Lethal Concentration$_{(50)}$ (LC_{50}) -- A calculated concentration of a chemical in air to which exposure for a specific length of time is expected to cause death in 50% of a defined experimental animal population.

Lethal Dose$_{(LO)}$ (LD_{LO}) -- The lowest dose of a chemical introduced by a route other than inhalation that is expected to have caused death in humans or animals.

Lethal Dose$_{(50)}$ (LD_{50}) -- The dose of a chemical which has been calculated to cause death in 50% of a defined experimental animal population.

Lethal Time$_{(50)}$ (LT_{50}) -- A calculated period of time within which a specific concentration of a chemical is expected to cause death in 50% of a defined experimental animal population.

Lowest-Observed-Adverse-Effect Level (LOAEL) -- The lowest dose of chemical in a study, or group of studies, that produces statistically or biologically significant increases in frequency or severity of adverse effects between the exposed population and its appropriate control.

Malformations -- Permanent structural changes that may adversely affect survival, development, or function.

Minimal Risk Level -- An estimate of daily human exposure to a chemical that is likely to be without an appreciable risk of deleterious effects (noncancerous) over a specified duration of exposure.

9. GLOSSARY

Mutagen -- A substance that causes mutations. A mutation is a change in the genetic material in a body cell. Mutations can lead to birth defects, miscarriages, or cancer.

Neurotoxicity -- The occurrence of adverse effects on the nervous system following exposure to chemical.

No-Observed-Adverse-Effect Level (NOAEL) -- The dose of chemical at which there were no statistically or biologically significant increases in frequency or severity of adverse effects seen between the exposed population and its appropriate control. Effects may be produced at this dose, but they are not considered to be adverse.

Octanol-Water Partition Coefficient (Kow) -- The equilibrium ratio of the concentrations of a chemical in n-octanol and water, in dilute solution.

Permissible Exposure Limit (PEL) -- An allowable exposure level in workplace air averaged over an 8-hour shift.

q_1^* -- The upper-bound estimate of the low-dose slope of the dose-response curve as determined by the multistage procedure. The q_1^* can be used to calculate an estimate of carcinogenic potency, the incremental excess cancer risk per unit of exposure (usually $\mu g/L$ for water, mg/kg/day for food, and $\mu g/m^3$ for air).

Reference Dose (RfD) -- An estimate (with uncertainty spanning perhaps an order of magnitude) of the daily exposure of the human population to a potential hazard that is likely to be without risk of deleterious effects during a lifetime. The RfD is operationally derived from the NOAEL (from animal and human studies) by a consistent application of uncertainty factors that reflect various types of data used to estimate RfDs and an additional modifying factor, which is based on a professional judgment of the entire database on the chemical. The RfDs are not applicable to nonthreshold effects such as cancer.

Reportable Quantity (RQ) -- The quantity of a hazardous substance that is considered reportable under CERCLA. Reportable quantities are (1) 1 lb or greater or (2) for selected substances, an amount established by regulation either under CERCLA or under Sect. 311 of the Clean Water Act. Quantities are measured over a 24-hour period.

Reproductive Toxicity -- The occurrence of adverse effects on the reproductive system that may result from exposure to a chemical. The toxicity may be directed to the reproductive organs and/or the related endocrine system. The manifestation of such toxicity may be noted as alterations in sexual behavior, fertility, pregnancy outcomes, or modifications in other functions that are dependent on the integrity of this system.

9. GLOSSARY

Short-Term Exposure Limit (STEL) -- The maximum concentration to which workers can be exposed for up to 15 min continually. No more than four excursions are allowed per day, and there must be at least 60 min between exposure periods. The daily TLV-TWA may not be exceeded.

Target Organ Toxicity -- This term covers a broad range of adverse effects on target organs or physiological systems (e.g., renal, cardiovascular) extending from those arising through a single limited exposure to those assumed over a lifetime of exposure to a chemical.

Teratogen -- A chemical that causes structural defects that affect the development of an organism.

Threshold Limit Value (TLV) -- A concentration of a substance to which most workers can be exposed without adverse effect. The TLV may be expressed as a TWA, as a STEL, or as a CL.

Time-Weighted Average (TWA) -- An allowable exposure concentration averaged over a normal 8-hour workday or 40-hour workweek.

Toxic Dose (TD_{50}) -- A calculated dose of a chemical, introduced by a route other than inhalation, which is expected to cause a specific toxic effect in 50% of a defined experimental animal population.

Uncertainty Factor (UF) -- A factor used in operationally deriving the RfD from experimental data. UFs are intended to account for (1) the variation in sensitivity among the members of the human population, (2) the uncertainty in extrapolating animal data to the case of human, (3) the uncertainty in extrapolating from data obtained in a study that is of less than lifetime exposure, and (4) the uncertainty in using LOAEL data rather than NOAEL data. Usually each of these factors is set equal to 10.

APPENDIX

PEER REVIEW

A peer review panel was assembled for creosote. The panel consisted of the following members: Dr. David Strayer, Health Science Center, University of Texas; Dr. Paul Mushak, Private Consultant, Durham, NC; and Dr. Rick Irvin, TEES Engineering Toxicology Division, Texas A&M University. These experts collectively have knowledge of creosote's physical and chemical properties, toxicokinetics, key health end points, mechanisms of action, human and animal exposure, and quantification of risk to humans. All reviewers were selected in conformity with the conditions for peer review specified in Section 104(i)(13) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended.

A joint panel of scientists from ATSDR and EPA has reviewed the peer reviewers' comments and determined which comments will be included in the profile. A listing of the peer reviewers' comments not incorporated in the profile, with a brief explanation of the rationale for their exclusion, exists as part of the administrative record for this compound. A list of databases reviewed and a list of unpublished documents cited are also included in the administrative record.

The citation of the peer review panel should not be understood to imply its approval of the profile's final content. The responsibility for the content of this profile lies with the Agency for Toxic Substances and Disease Registry.

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 4, SCIENCE and ECOSYSTEM SUPPORT DIVISION
ATHENS, GA 30605-2720

Reference 17
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

4SESD-EIB

JUL 2 2 2003

MEMORANDUM

SUBJECT: Gulf States Creosoting Sampling Event Report
SESD Project No. 03-0474, 03-0558

FROM: Brian Striggow, Environmental Protection Specialist
Superfund and Air Section

THRU: Don Hunter, Acting Chief
Superfund and Air Section

TO: Brian Farrier
Waste Management Division
South Site Management Branch

Attached please find the Sampling Event Report for the Gulf States Creosoting site in Flowood, Mississippi. If you have any questions about the subject document, please contact me at (706) 355-8619 or at email *striggow.brian@epamail.epa.gov*.

Attachment

cc: Shanieka Pennamon, Weston Solutions, Inc.

Gulf States Creosoting
Flowood, Mississippi

Sampling Event Report
July 2003

United States Environmental Protection Agency
Region 4
Science and Ecosystem Support Division
Enforcement and Investigations Branch
Superfund and Air Section

GULF STATES CREOSOTING
FLOWOOD, MISSISSIPPI

Introduction

At the request of the US EPA Region 4, Waste Management Division (WD), South Site Management Branch (SSMB), the Science and Ecosystem Support Division (SESD) Enforcement and Investigations Branch (EIB) conducted a sampling event at the Gulf States Creosoting site in Flowood, Mississippi. The work was conducted the week of April 21, 2003

The purpose of the sampling event was to collect and analyze environmental samples for a Site Investigation (SI) report to be prepared by an EPA Superfund Technical Assistance Response Team (START) contractor. The information presented here is intended only to support the SI report preparation effort - it is not a comprehensive evaluation of the site.

The following materials are attached.

Title	Description
Appendix A	**Figures**
Figure 1	Sampling Locations
Figure 2	Background Locations
Appendix B	**Tables**
Table 1	Sample Descriptions and Coordinates
Table 2	Surface Soil Analytical Results, positive values only
Table 3	Subsurface Soil Analytical Results, positive values only
Table 4	Sediment Analytical Results, positive values only
Table 5	Groundwater Analytical Results, positive values only
Table 6	Surface Soil Analytical Results
Table 7	Subsurface Soil Analytical Results
Table 7	Sediment Analytical Results
Table 9	Groundwater Analytical Results
Table 10	Surface Soil Miscellaneous Analytical Results
Table 11	Subsurface Soil Miscellaneous Analytical Results
Appendix C	**Site Photographs**
Appendix D	**Log Book Photocopies**
Appendix E	**Laboratory Data Sheets**

Background

The Gulf States Creosoting Site site is located in Flowood, Mississippi, approximately 2 miles East of Jackson, Mississippi. The creosoting site operations ceased around 1950 and the site is currently in agricultural and industrial use. A levee separates the west side of the site from several oxbow lakes of the Pearl River identified on USGS maps as 'Creosote Slough'. The present levee was constructed during or after the creosoting operations. There is no visible evidence of the previous creosoting operations at or near the site.

Sampling and Methodology Summary

All samples were collected and handled in accordance with the US EPA, Region 4, SESD, Environmental Investigation Standard Operating Procedures and Quality Assurance Manual, Nov, 2001 (EISOPQAM). Samples were analyzed in accordance with the Laboratory Operations and Quality Control Manual, Jan. 2002, and/or the Contract Laboratory Program (CLP) Statement of Work.

Sampling locations were designated by the Start Contractor, Weston Solutions, Inc., after a joint site reconnaissance with EPA, Weston and State of Mississippi personnel. The site and surrounding area, with sample locations indicated, is shown in Figure 1. The control sample locations are shown in Figure 2. Control samples of all media (GS-01-GW,SS,SB,SD) were collected northeast of the site behind Jackson Preparatory School on Hwy. 25. Additional control sediment samples were collected upstream of the site on the Pearl River (GS-06-SD) and on Prairie Branch (GS-08-SD), to isolate various potential influences.

All samples were analyzed for Volatile Organic Compounds(VOCs), Extractable (Semi-volatile) Organic Compounds (SVOCs), pesticides/PCBs, and total metal. The sediment samples were also analyzed for Total Organic Carbon (TOC) to give an indication of the level of natural organic matter. The sediments had an additional low-level extractables scan performed that is generally more suitable for the high-moisture content sediments.

All soil samples were collected with a hand auger and mixed in glass pans after collection of VOC samples in Encore samplers. Surface soils (designated with a SS suffix) were collected from a 0 to 6" Below Land Surface (BLS) sampling interval. With the exception of two samples, all subsurface soils (designated with a SB suffix) were collected from a 24"-36"BLS interval. The GS-10-SB and GS-14-SB samples were collected from a 12"-24" BLS interval. Note that the sampling plan called for GS-13-SB to be sampled from the shorter interval, but the GS-14-SB location was inadvertently sampled to the shallower depth instead. A co-located duplicate of sample GS-20-SS was collected and recorded as sample GS-20-SD. The analytical results for the duplicate are reported with results for other surface soil samples.

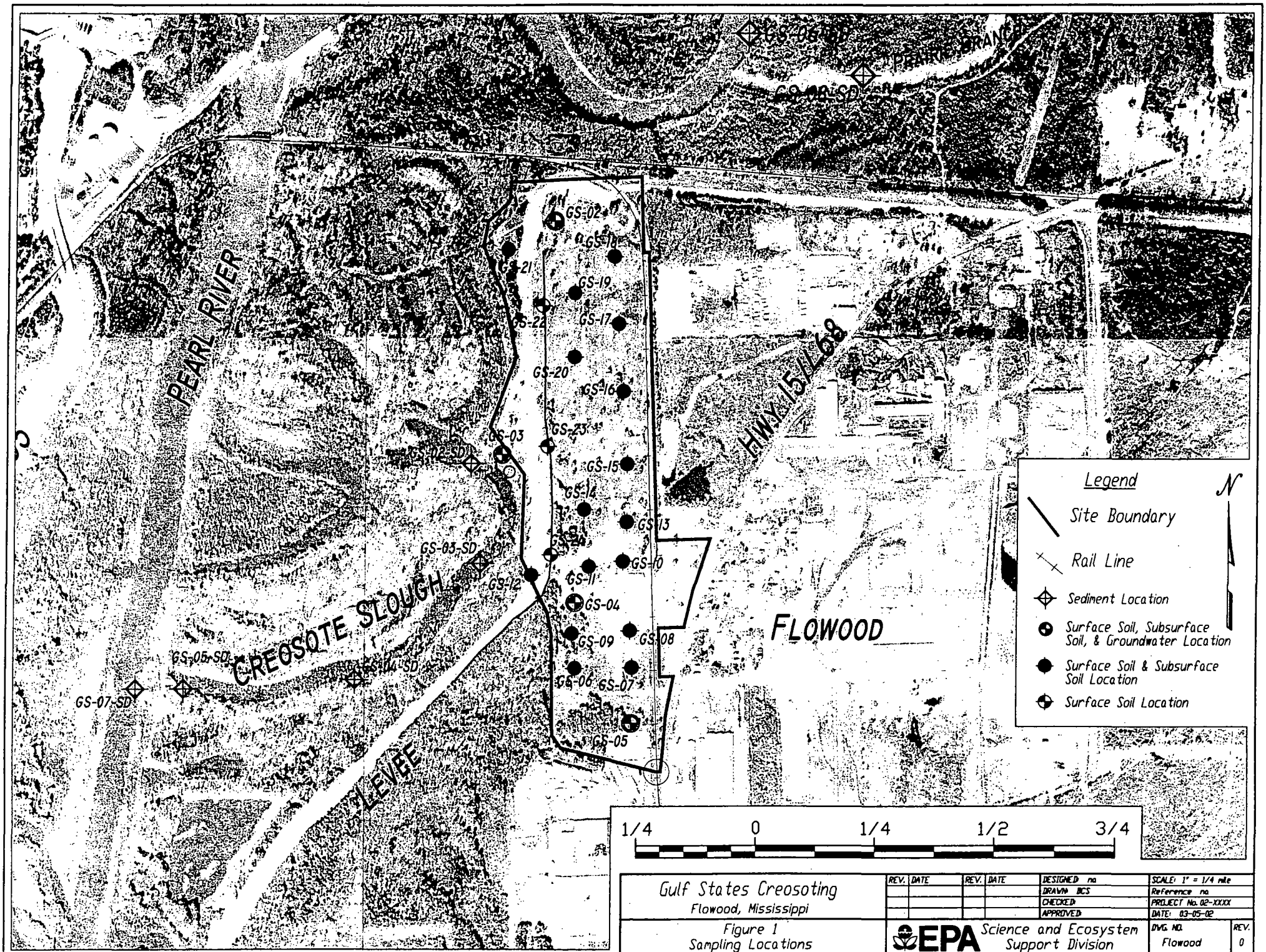
The sediment samples (designated with a SD suffix, except for duplicate soil sample GS-20-SD) were collected with a stainless-steel scoops and 10 foot handle-extension by samplers wading the sloughs or streams. The scoop was used to retrieve samples of the upper sediments (estimated 0-2") in the areas of interest. After collection, sediment samples were subsequently processed similarly to the soil samples.

Temporary wells for goundwater sampling were installed using direct-push techniques. Geoprobe Systems® SP15 direct-push well screens were installed in the 16'-20' BLS interval at each location. Using low-flow techniques, each well was purged to a turbidity near or below 10 Nephelometric Turbidity Units (NTUs) prior to sampling.

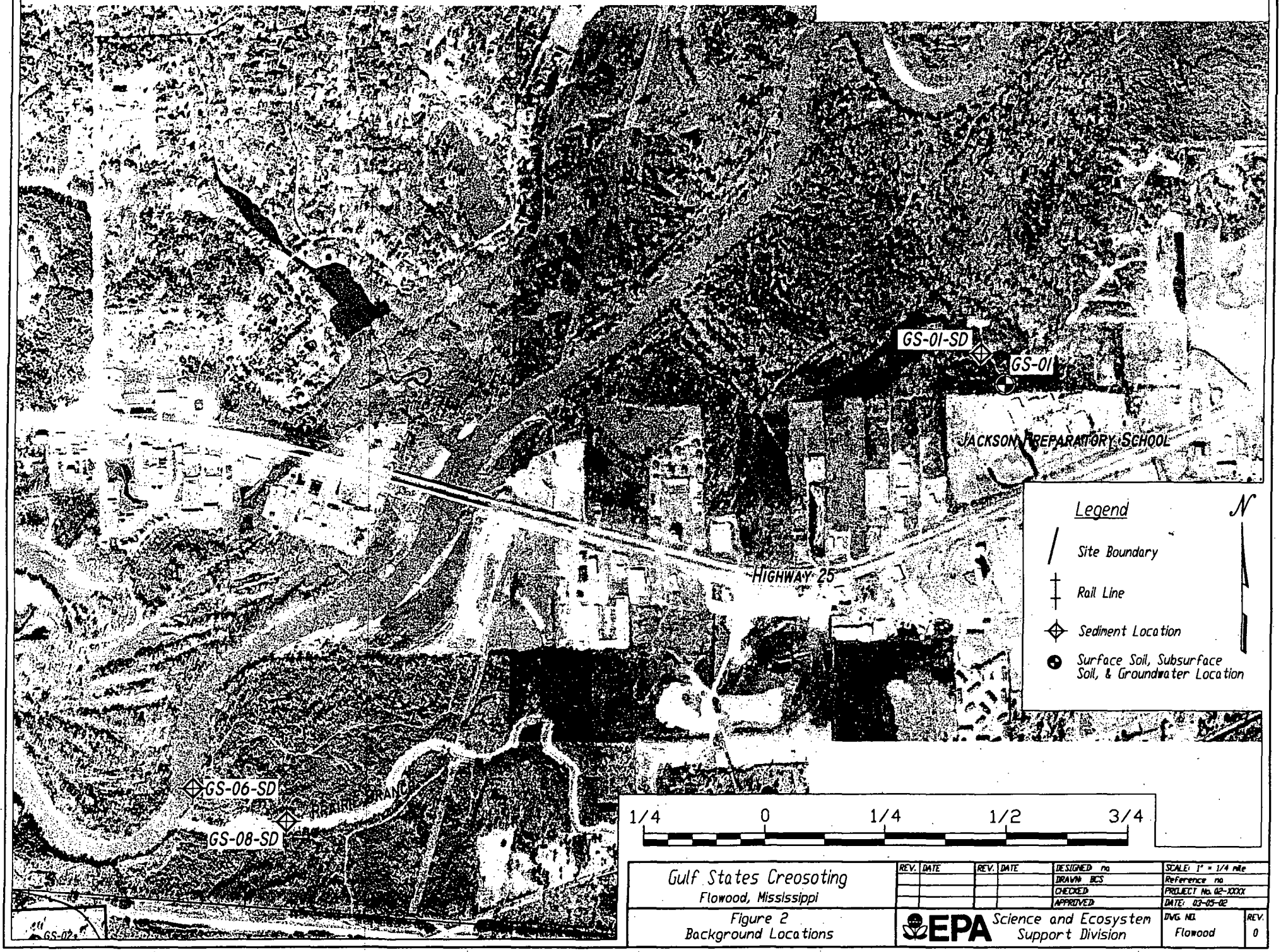
At one location near Creosote Slough, creosote odors were detected on the recon/planning trip. This area was sampled as GS-03-SS,SB,and GW in this sampling effort. Creosote odors were not noted during sampling at this location or any other soil or groundwater sampling location. However, at sediment locations GS-02-SD and GS-03-SD a sheen was noted on the sample material in the pan and creosote odors were noted at location GS-03-SD. Note that while GS-XX-SS, SB, and GW are co-located, the GS-XX-SD samples are a separately numbered series at different locations from the soil and groundwater samples.

A preservative blank was processed after groundwater sampling was completed. Trip blanks were also shipped with each VOC sample shipment. No analytes or compounds were detected in any of these QA samples.

Appendix A
Figures



Gulf States Creosoting Flowood, Mississippi	REV.	DATE	REV.	DATE	DESIGNED: na DRAWN: BCS CHECKED: APPROVED:
Figure 1 Sampling Locations	EPA Science and Ecosystem Support Division				SCALE: 1" = 1/4 mile Reference: na PROJECT No. 02-XXXX DATE: 03-05-02 DWG. NO. Flowood REV. 0



Gulf States Creosoting Flowood, Mississippi	REV. / DATE	REV. / DATE	DESIGNED no DRAWN BCS CHECKED APPROVED	SCALE: 1" = 1/4 mile Reference no PROJECT No. 02-XXXX DATE: 03-05-02	
Figure 2 Background Locations	EPA Science and Ecosystem Support Division			DWG NO. Flowood	REV. 0

Appendix B
Tables

Table 1. Sample Descriptions and Coordinates

Soils

Sample	Description	North Latitude	West Longitude
GS-01-SS,SB	Background surface (0-6") and subsurface (24-36") soils from Jackson Prep	32.334569	90.109869
GS-02-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.318634	90.144468
GS-03-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.313000	90.146103
GS-04-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.309347	90.144088
GS-05-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.306379	90.142552
GS-06-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.307751	90.144129
GS-07-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.307740	90.142494
GS-08-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.308640	90.142527
GS-09-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.308601	90.144193
GS-10-SS,SB	Surface (0-6") and subsurface (6-12") soils	32.310344	90.142697
GS-11-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.310225	90.143673
GS-12-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.310056	90.145333
GS-13-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.311298	90.142564
GS-14-SS,SB	Surface (0-6") and subsurface (6-12") soils	32.311612	90.143780
GS-15-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.312698	90.142520
GS-16-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.314473	90.142586
GS-17-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.316131	90.142686
GS-18-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.317754	90.142774
GS-19-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.316894	90.143933
GS-20-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.315338	90.143966
GS-20-SD	Co-located duplicate of GS-20-SS	32.315338	90.143966
GS-21-SS,SB	Surface (0-6") and subsurface (24-36") soils	32.317983	90.145814
GS-22-SS	Surface soils(0-6") from drainage ditch	32.316609	90.144854
GS-23-SS	Surface soils(0-6") from drainage ditch	32.313169	90.144798
GS-24-SS	Surface soils(0-6") from drainage ditch	32.309375	90.145108

Sediments

Sample	Description	North Latitude	West Longitude
GS-01-SD	Background sediment from slough @ Jackson Prep School	32.335514	90.110716
GS-02-SD	Bottom sediment from Creosote Slough	32.312798	90.146997
GS-03-SD	Bottom sediment from Creosote Slough	32.310375	90.146789
GS-04-SD	Bottom sediment from Creosote Slough	32.307611	90.150453
GS-05-SD	Bottom sediement from Creosote Slough @ Pearl River	32.307500	90.155336
GS-06-SD	Background sediment from Pearl River	32.323095	90.138835
GS-07-SD	Bottom sediment from Pearl River	32.307525	90.156702
GS-08-SD	Background sediment from Prairie Branch	32.322002	90.135580

Groundwater

Sample	Description	North Latitude	West Longitude
GS-01-GW	Background sample at Jackson Prep School	32.334569	90.109869
GS-02-GW	Field Sample	32.318634	90.144468
GS-03-GW	Field Sample near Creosote Slough	32.313006	90.146002
GS-04-GW	Field Sample	32.309347	90.144088
GS-05-GW	Field Sample	32.306379	90.142552
GS-06-GW	Field Sample	32.307751	90.144129

Table 2. Surface Soil Analytical Results, positive values only.

Metals Scan

	Units	GS01SS		GS02SS		GS03SS		GS04SS		GS05SS		GS06SS		GS07SS		GS08SS		GS09SS	
% Moisture	%	15		23		25		23		15		26		17		5		19	
Aluminum	MG/KG	4700	J	7800	J	8900	J	4300	J	3100	J	6700	J	2800	J	1800	J	2500	J
Antimony	MG/KG		UJ	0.64	R		U		U		U		U		U		U	1.2	R
Arsenic	MG/KG	6.3		3.3	J	11		2		13		2		3.6		3.4		0.95	R
Barium	MG/KG	72		120		67		60		37		85		34		21		25	
Beryllium	MG/KG	0.33		0.94		0.94		0.37		0.3		0.28		0.2		0.19		0.15	
Cadmium	MG/KG		U		U		U		U		U		U		U	0.09			U
Calcium	MG/KG	1100		690		790		690		500		1200		810		800		340	
Chromium	MG/KG	8.4		6.1		20		6		7.5		7.7		4.5		4		4.1	
Cobalt	MG/KG	5.8		17		8.1		1.7		6.6		1.4		2		1.5		0.95	
Copper	MG/KG	6		2	J		U		U		U		U		U		U		UJ
Iron	MG/KG	10000		8400		27000	J	4500	J	15000	J	5600	J	5400	J	4700	J	2800	
Lead	MG/KG	11	J	17		120		18		19		17		11		12		8.8	
Magnesium	MG/KG	520	J	470	J	680		280		180		550		250		180		160	J
Manganese	MG/KG	630		2800		550		140		610		170		180		230		28	
Potassium	MG/KG	380	J	240	J	350		200		120		430		170		150		120	J
Selenium	MG/KG	1.3		0.93	R	1.9	J		U		U		U		U		U		U
Silver	MG/KG	0.39	R	0.71	R	0.63		0.26	R	0.43		0.29			U		U	0.28	R
Sodium	MG/KG	270		300		82	J	120	J	58	J	110		63			U	300	
Thallium	MG/KG		U		U		U		U		U		U		U		U		U
Vanadium	MG/KG	17		15		46		11		18		13		8.1		7.1		6.6	
Zinc	MG/KG	29		47		34		27		23		35		24		26		19	

Pesticides & Aroclors Scan

	Units	GS01SS		GS02SS		GS03SS		GS04SS		GS05SS		GS06SS		GS07SS		GS08SS		GS09SS	
% Moisture	%	14		23		24		24		15		26		15		4		26	
4,4'-DDE (p,p'-DDE)	UG/KG		U		U		U		U		U		U		U		U		U
4,4'-DDT (p,p'-DDT)	UG/KG		U		U		U		U		U		U	12	J	41	J		U
alpha-BHC	UG/KG		U		U		U		U		U		U		U		U		U
Endrin	UG/KG		U		U		U		U		U		U		U		U		U
Endrin Aldehyde	UG/KG		U		U		U		U	18	J		U		U	17	J		U
Endrin Ketone	UG/KG		U		U		U		U		U		U		U		U		U
Methoxychlor	UG/KG		U		U		U		U		U		U		U	74	NJ		U

Extractables Scan
Page 2 of 6

	Units	GS01SS		GS02SS		GS03SS		GS04SS		GS05SS		GS06SS		GS07SS		GS08SS		GS09SS	
% Moisture	%	14		23		24		24		15		26		15		4		26	
1,1-Biphenyl	UG/KG		U		U		U		U		U		U	45	J		U		U
2-Methylnaphthalene	UG/KG		U		U		U		U		U		U	120	J		U		U
Acenaphthene	UG/KG		U		U		U		U		U		U	170	J		U		U
Acenaphthylene	UG/KG		U		U		U		U	120	J		U	320	J	480	J		U
Anthracene	UG/KG		U		U		U		U	470			U	970		930	J		U
Benzo(a)Anthracene	UG/KG		U		U		U		U	770			U	2500		1500			U
Benzo(b)Fluoranthene	UG/KG		U		U		U		U	1800	J		U	4600	J	11000	J		U
Benzo(ghi)Perylene	UG/KG		U		U		U		U	380	J		U	690		3800			U
Benzo(k)Fluoranthene	UG/KG		U		U		U		U	2100	J		U	5200	J	12000	J		U
Benzo-a-Pyrene	UG/KG		U		U		U		U	810			U	2100		3700			U
Carbazole	UG/KG		U		U		U		U	200	J		U	510		190	J		U
Chrysene	UG/KG		U		U		U		U	1500			U	4900		2300			U
Dibenzo(a,h)Anthracene	UG/KG		UJ		UJ		U		U	190	J		U	520		1700			U
Dibenzofuran	UG/KG		U		U		U		U		U		U	240	J		U		U
Fluoranthene	UG/KG		U		U		U		U	2600			U	8200		2600			U
Fluorene	UG/KG		U		U		U		U		U		U	180	J		U		U
Indeno (1,2,3-cd) Pyrene	UG/KG		UJ		UJ		U		U	610			U	1100		5000			U
Naphthalene	UG/KG		U		U		U		U		U		U	87	J		U		U
Pentachlorophenol	UG/KG		UJ		UJ		U		U		U		U		U		U		U
Phenanthrene	UG/KG		U		U		U		U	320	J		U	4200		610	J		U
Pyrene	UG/KG		U		U		U		U	1500			U	6200		2500			U

Volatiles Scan

	Units	GS01SS		GS02SS		GS03SS		GS04SS		GS05SS		GS06SS		GS07SS		GS08SS		GS09SS	
% Moisture	%	14		23		24		24		15		26		15			NR	26	
Acetone	UG/KG	100	J	180	J	25	J	28	J	91	J	82	J	87	J		NR		UJ
Methyl Acetate	UG/KG		U		U		U		U		U		U		U		NR		U
Methyl Ethyl Ketone	UG/KG		U	21			UJ		UJ		UJ		UJ		UJ		NR		UJ

Table 2. Surface Soil Analytical Results, positive values only.
Page 3 of 6

Metals Scan

	Units	GS10SS		GS11SS		GS12SS		GS13SS		GS14SS		GS15SS		GS16SS		GS17SS		GS18SS	
% Moisture	%	11		7		18		11		14		15		21		21		22	
Aluminum	MG/KG	4700	J	4400	J	5500	J	4400	J	4800	J	8000	J	7700	J	9000	J	4900	J
Antimony	MG/KG	1	R		UJ		U	0.6	R	0.69	J		UJ		UJ		UJ		UJ
Arsenic	MG/KG	6.8		3.7		4.4		6.3		9		6.9		5.5	J	5.5		5.4	
Barium	MG/KG	120		54		83		58		65		72		50		120		53	
Beryllium	MG/KG	0.46		0.44		0.46		0.54		0.44		0.71		0.43		0.94		0.35	
Cadmium	MG/KG	0.34		0.19			U	0.16	R	0.11	R	0.1			U	0.07	R		U
Calcium	MG/KG	2600		660		760		1200		1800		2000		1200		2300		890	
Chromium	MG/KG	23		12		8.9		7.8		8.6		11		10		8		9.9	
Cobalt	MG/KG	4.8		5.4		7.3		4.2		7.3		11		4		12		7.6	
Copper	MG/KG	19	J		UJ		U	7.2	J		UJ		UJ		U		U		U
Iron	MG/KG	14000		11000		11000	J	12000		11000		12000		12000		12000		10000	
Lead	MG/KG	80		290		25		33		24		26		15	J	20	J	15	J
Magnesium	MG/KG	780	J	260	J	380		280	J	340	J	430	J	510	J	490	J	340	J
Manganese	MG/KG	500		880		990		940		870		1800		240		2500		590	
Potassium	MG/KG	560	J	330	J	280		390	J	200	J	580	J	490	J	620	J	180	J
Selenium	MG/KG	0.98	R	0.77	R		U	1.2		0.63	R	1.1	R	1.3		1.5	J	1.1	
Silver	MG/KG	0.49		0.38		0.43		0.33	R	0.37		0.5		0.39	R	0.51	R	0.29	
Sodium	MG/KG	320		200		91		230		300		310		270		280		310	
Thallium	MG/KG		U		U		U		U		U		U		U		U		U
Vanadium	MG/KG	18		16		22		17		21		23		22		23		20	
Zinc	MG/KG	160		840		28		72		44		48		33		65		34	

Pesticides & Aroclors Scan

	Units	GS10SS		GS11SS		GS12SS		GS13SS		GS14SS		GS15SS		GS16SS		GS17SS		GS18SS	
% Moisture	%	12		7		17		13		14		16		21		21		23	
4,4'-DDE (p,p'-DDE)	UG/KG		U		U		U		U		U		U	2.5	J		U		U
4,4'-DDT (p,p'-DDT)	UG/KG	43	J	30	J		U	38	J	10	NJ	30	NJ		U		U		U
alpha-BHC	UG/KG		U		U		U		U		U		U		U		U		U
Endrin	UG/KG		U		U		U	42	J		U		U		U	6.4	J		U
Endrin Aldehyde	UG/KG		U		U		U	49	J		U	27	NJ		U		U		U
Endrin Ketone	UG/KG		U		U		U	150			U		U	14	J	20	J		U
Methoxychlor	UG/KG	81	NJ		U		U		U	34	NJ		U		U		U		U

Extractables Scan

	Units	GS10SS		GS11SS		GS12SS		GS13SS		GS14SS		GS15SS		GS16SS		GS17SS		GS18SS	
% Moisture	%	12		7		17		13		14		16		21		21		23	
1,1-Biphenyl	UG/KG		U		U		U		U		U		U		U		U		U
2-Methylnaphthalene	UG/KG	69	J	70	J		U		U		U		U		U		U		U
Acenaphthene	UG/KG	97	J		U		U		U		U		U		U		U		U
Acenaphthylene	UG/KG	1100		330	J		U	1000	J		U	250	J	87	J	270	J		U
Anthracene	UG/KG	1700		830			U	1600		1100		370	J		U	380	J		U
Benzo(a)Anthracene	UG/KG	2800		1000			U	4300		2300		690		260	J	1000			U
Benzo(b)Fluoranthene	UG/KG	5200		2500			U	7300	J	4200		1500		700	J	2600	J		U
Benzo(ghi)Perylene	UG/KG	1300		460			U	2000		820		360	J	92	J	290	J		U
Benzo(k)Fluoranthene	UG/KG	2300		1700			U	5400	J	2400		1100		730	J	2700	J		U
Benzo-a-Pyrene	UG/KG	3100		800			U	3100		2300		650		230	J	1000			U
Carbazole	UG/KG	480		210	J		U	540	J	280	J	250	J	62	J	130	J		U
Chrysene	UG/KG	4300		1500			U	6200		3100		1700		390	J	1600			U
Dibenzo(a,h)Anthracene	UG/KG	750		310	J		U	1100		580		200	J	95	J	330	J		U
Dibenzofuran	UG/KG	120	J	140	J		U		U		U		U		U		U		U
Fluoranthene	UG/KG	4700		1900			U	11000		3100		3100		760		2500			U
Fluorene	UG/KG		U		U		U		U		U		U		U		U		U
Indeno (1,2,3-cd) Pyrene	UG/KG	2300		940			U	3100		1700		740	J	270	J	890			U
Naphthalene	UG/KG	110	J	120	J		U		U		U		U		U		U		U
Pentachlorophenol	UG/KG	690	J	640	J		U		U		U		UJ		U		U		U
Phenanthrene	UG/KG	1400		540			U	1600		320	J	1100		310	J	250	J		U
Pyrene	UG/KG	5000		1700			U	6800		3300		2200		540		1700			U

Volatiles Scan

	Units	GS10SS		GS11SS		GS12SS		GS13SS		GS14SS		GS15SS		GS16SS		GS17SS		GS18SS	
% Moisture	%	12		7		17		13		14		16		21		21		23	
Acetone	UG/KG	84	J	220	J		UJ	200	J	75	J	100	J	56	J	260	J	130	J
Methyl Acetate	UG/KG		U		U		U		U		U	3	J		U		U		U
Methyl Ethyl Ketone	UG/KG		U	21	J	14	J	15	J		U	12			U	28	J	14	J

Table 2. Surface Soil Analytical Results, positive values only.
Page 5 of 6

Metals Scan

	Units	GS19SS		GS20SS		GS20SD		GS21SS		GS22SS		GS23SS		GS24SS	
% Moisture	%	15		20		19		22		14		26		47	
Aluminum	MG/KG	8500	J	6700	J	6100	J	6800	J	4200	J	7500	J	4900	J
Antimony	MG/KG		UJ		UJ	0.59	UJ		UJ		U		UJ		U
Arsenic	MG/KG	6.5		5.8		4.5		2.7		4		5		6.5	
Barium	MG/KG	89		410		130		88		42		83		120	
Beryllium	MG/KG	0.73		1.2		0.76		0.81		0.43		0.5		0.61	
Cadmium	MG/KG		U	0.17		0.05	U		U		U	0.1	R	0.16	
Calcium	MG/KG	2000		1700		1400		190		280		960		1600	
Chromium	MG/KG	8.3		8.2		7.2		5.6		9.4		12		12	
Cobalt	MG/KG	13		17		6.8		14		5.5		6.8		6.8	
Copper	MG/KG		U		U	4.3	U		U		U	12	J		U
Iron	MG/KG	12000		12000		8800		7300		9700	J	13000		17000	J
Lead	MG/KG	19	J	24	J	22	J	13	J	9.8		24		28	
Magnesium	MG/KG	530	J	380	J	410	J	270	J	220		630	J	450	
Manganese	MG/KG	1900		5500		1800		2200		470		920		890	
Potassium	MG/KG	550	J	240	J	250	J	250	J	170		480	J	370	
Selenium	MG/KG	1.2		1.3	J	1.1	R	0.8			U	1.1	R		U
Silver	MG/KG	0.53	R	0.9	R	0.42		0.52		0.2		0.46	R	0.47	
Sodium	MG/KG	290		290		290		300			U	340		86	J
Thallium	MG/KG		U	1.5		0.77	U		U		U		U		U
Vanadium	MG/KG	22		22		17		13		21		23		26	
Zinc	MG/KG	52		88		63		24		19		49		89	

Pesticides & Aroclors Scan

	Units	GS19SS		GS20SS		GS20SD		GS21SS		GS22SS		GS23SS		GS24SS	
% Moisture	%	17		21		20		22		13		26		45	
4,4'-DDE (p,p'-DDE)	UG/KG		U	4.1	NJ	3.3	NJ		U		U		U		U
4,4'-DDT (p,p'-DDT)	UG/KG		U		U		U		U		U		U		U
alpha-BHC	UG/KG		U		U		U		U		U	1.7	NJ		U
Endrin	UG/KG		U		U		U		U		U		U		U
Endrin Aldehyde	UG/KG		U		U		U		U		U		U		U
Endrin Ketone	UG/KG		U		U		U		U		U	6.9	J		U
Methoxychlor	UG/KG		U		U		U		U		U		U		U

Extractables Scan
Page 6 of 6

	Units	GS19SS		GS20SS		GS20SD		GS21SS		GS22SS		GS23SS		GS24SS	
% Moisture	%	17		21		20		22		13		26		45	
1,1-Biphenyl	UG/KG		U		U		U		U		U		U		U
2-Methylnaphthalene	UG/KG		U		U		U		U		U		U		U
Acenaphthene	UG/KG		U		U		U		U		U		U		U
Acenaphthylene	UG/KG		U		U		U		U		U	66	J	150	J
Anthracene	UG/KG		U		U		U		U		U		U	330	J
Benzo(a)Anthracene	UG/KG		U	58	J	44	J		U		U	430	J	990	
Benzo(b)Fluoranthene	UG/KG		U	160	J	140	J		U		U		NA	2700	J
Benzo(ghi)Perylene	UG/KG		U		U				U		U	180	J	330	J
Benzo(k)Fluoranthene	UG/KG		U	170	J	150	J		U		U	520		2600	J
Benzo-a-Pyrene	UG/KG		U	46	J	47	J		U		U	380	J	870	
Carbazole	UG/KG		U		U				U		U		U		U
Chrysene	UG/KG		U	98	J	69	J		U		U	510		1100	
Dibenzo(a,h)Anthracene	UG/KG		U		U				U		U	120	J	260	J
Dibenzofuran	UG/KG		U		U				U		U		U		U
Fluoranthene	UG/KG		U	73	J	81	J		U		U	520		1300	
Fluorene	UG/KG		U		U				U		U		U		U
Indeno (1,2,3-cd) Pyrene	UG/KG		U	63	J	51	J		U		U	340	J	550	J
Naphthalene	UG/KG		U		U				U		U		U		U
Pentachlorophenol	UG/KG		U		U				U		U		UJ		U
Phenanthrene	UG/KG		U		U				U		U	59	J		U
Pyrene	UG/KG		U	100	J	63	J		U		U	450		1600	

Volatiles Scan

	Units	GS19SS		GS20SS		GS20SD		GS21SS		GS22SS		GS23SS		GS24SS	
% Moisture	%	17		21		20		22		13		26		45	
Acetone	UG/KG	180	J	83	J	230	J	270	J	110	J	130	J	220	J
Methyl Acetate	UG/KG	3	J		U		U		U		U		U		U
Methyl Ethyl Ketone	UG/KG	17	J		U	23	J	31	J		UJ	14			UJ

Data Qualifiers

U-Analyte not detected at or above reporting limit.
J-Identification of analyte is acceptable; reported value is an estimate.
UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification.
NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to interferences. | A-Analyte analyzed in replicate. Reported value is 'average' of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Table 3. Subsurface Soil Analytical Results, positive values only.
Page 1 of 6

Metals Scan

	Units	GS01SB		GS02SB		GS03SB		GS04SB		GS05SB		GS06SB		GS07SB		GS08SB		GS09SB	
% Moisture	%	18		19		28		27		23		27		26		18		20	
Aluminum	MG/KG	7300	J	7800	J	8600	J	6600	J	5300	J	7700	J	9400	J	8100	J	5800	J
Antimony	MG/KG		UJ		UJ		U		U		U		U		U		U		UJ
Arsenic	MG/KG	6.7		3.4	J	9.4		1.9			U	2.7		2.7		3.5			U
Barium	MG/KG	62		34		63		57		59		48		50		45		29	
Beryllium	MG/KG	0.31		0.36		0.64		0.41		0.27		0.24		0.35		0.59		0.35	
Cadmium	MG/KG		U		U		U		U		U		U		U		U		U
Calcium	MG/KG	850		170		1400		670		580		990		670		450		540	
Chromium	MG/KG	12		9.5		14		6.6		4.9		7.5		8		9.2		5.3	
Cobalt	MG/KG	3.3		2.6		4.3		1.4		0.78	R	1.2		1.6		9.4		1	R
Copper	MG/KG	6.4			UJ		U		U		U		U		U		U		UJ
Iron	MG/KG	13000		13000		22000	J	7500	J	2300	J	5800	J	8200	J	12000	J	3800	
Lead	MG/KG	8.2	J	6.6		15		9.2		6.7		11		11		5.7		8.4	
Magnesium	MG/KG	580	J	480	J	770		370		220		580		550		370		290	J
Manganese	MG/KG	180		200		200		60		16		18		19		1000		9.3	
Nickel	MG/KG		U		U		U		U		U		U		U		U		U
Potassium	MG/KG	320	J	320	J	360		190		170		240		260		350		190	J
Selenium	MG/KG	0.7		1.4		1.6			U		U		U		U		U		U
Silver	MG/KG	0.38		0.38	R	0.49	R		U		U	0.28	R		U	0.32			U
Sodium	MG/KG	290		290		98	J	300		190	J	250		220		46		440	
Vanadium	MG/KG	22		20		33		14		6.7		17		18		22		8.4	
Zinc	MG/KG	18		20		23		15		7.3		12		15		25		12	

Pesticides & Aroclors Scan

	Units	GS01SB		GS02SB		GS03SB		GS04SB		GS05SB		GS06SB		GS07SB		GS08SB		GS09SB	
% Moisture	%	18		19		28		23		19		26		26		17		21	
4,4'-DDE (p,p'-DDE)	UG/KG		U		U		U		U		U		U		U		U		U
4,4'-DDT (p,p'-DDT)	UG/KG		U		U		U		U		U		U		U		U		U
Endrin Ketone	UG/KG		U		U		U		U		U		U		U		U		U
gamma-BHC (Lindane)	UG/KG		U		U		U		U		U		U		U		U		U
PCB-1260 (Aroclor 1260)	UG/KG		U		U		U		U		U		U		U		U		U

Extractables Scan
Page 2 of 6

	Units	GS01SB		GS02SB		GS03SB		GS04SB		GS05SB		GS06SB		GS07SB		GS08SB		GS09SB	
% Moisture	%	18		19		28		23		19		26		26		17		21	
2-Methylnaphthalene	UG/KG		U		U		U		U		U		U		U		U		U
Acenaphthene	UG/KG		U		U		U		U		U		U		U		U		U
Acenaphthylene	UG/KG		U		U		U		U		U		U		U		U		U
Anthracene	UG/KG		U		U		U		U		U		U		U	74	J		U
Benzo(a)Anthracene	UG/KG		U		U		U		U		U		U		U	120	J		U
Benzo(b)Fluoranthene	UG/KG		U		U		U		U		U		U	47	J	1000	J		U
Benzo(ghi)Perylene	UG/KG		U		U		U		U		U		U		U	320	J		U
Benzo(k)Fluoranthene	UG/KG		U		U		U		U		U		U	45	J	980	J		U
Benzo-a-Pyrene	UG/KG		U		U		U		U		U		U		U	240	J		U
bis(2-Ethylhexyl) Phthalate	UG/KG		U		U		UJ		UJ	450	J		U		U		U		U
Carbazole	UG/KG		U		U		U		U		U		U		U		U		U
Chrysene	UG/KG		U		U		U		U		U		U		U	220	J		U
Dibenzo(a,h)Anthracene	UG/KG		U		UJ		U		U		U		U		U	150	J		U
Dibenzofuran	UG/KG		U		U		U		U		U		U		U		U		U
Fluoranthene	UG/KG		U		U		U		U		U		U		U	200	J		U
Indeno (1,2,3-cd) Pyrene	UG/KG		U		UJ		U		U		U		U		U	420			U
Naphthalene	UG/KG		U		U		U		U		U		U		U		U		U
Pentachlorophenol	UG/KG		U		UJ		U		U		U		U		U		U		U
Phenanthrene	UG/KG		U		U		U		U		U		U		U		U		U
Pyrene	UG/KG		U		U		U		U		U		U		U	230	J		U

Volatiles Scan

	Units	GS01SB		GS02SB		GS03SB		GS04SB		GS05SB		GS06SB		GS07SB		GS08SB		GS09SB	
% Moisture	%	18		19		28		23		19		26		26		17		21	
Acetone	UG/KG		UJ	12	J	35	J		UJ		UJ	21	J		UJ	99	J		UJ
Benzene	UG/KG		U		U		U		U		U		U		U		U		U
Methyl Ethyl Ketone	UG/KG		UJ		U		UJ		UJ		UJ		UJ		UJ	11	J		UJ

Table 3. Subsurface Soil Analytical Results, positive values only.

Metals Scan

	Units	GS10SB		GS11SB		GS12SB		GS13SB		GS14SB		GS15SB		GS16SB		GS17SB		GS18SB	
% Moisture	%	18		18		17		15		15		21		23		21		18	
Aluminum	MG/KG	8600	J	9600	J	3700	J	8400	J	4600	J	11000	J	12000	J	6700	J	7700	J
Antimony	MG/KG	0.96	R	1.6	R		U	0.58	R		UJ		UJ		UJ		UJ		UJ
Arsenic	MG/KG	13		6.6		4.6		4.7		7.4		8.1		7.3		1.5		4.1	
Barium	MG/KG	430		41		19		23		54		45		49		61		26	
Beryllium	MG/KG	1.3		0.49		0.3		0.34		0.48		0.59		0.49		0.39		0.31	
Cadmium	MG/KG	0.87			U		U		U		U		U		U		U		U
Calcium	MG/KG	9400		320		160		400		620		710		390		620		190	
Chromium	MG/KG	19		17		8.5		11		7.1		21		17		7		8.7	
Cobalt	MG/KG	12		3.2	R	1.4		1.7		12		2.9		2.1		1.5		3.4	
Copper	MG/KG	40	J		UJ		U		UJ		UJ	7	J	7.7			U		U
Iron	MG/KG	20000		20000		13000	J	14000		14000		24000		23000		5900		12000	
Lead	MG/KG	71		6.7		6.7		5.1		27		9.2		8.7	J	9.1	J	8	J
Magnesium	MG/KG	2400	J	680	J	170		470	J	250	J	640	J	650	J	310	J	470	J
Manganese	MG/KG	1800		120		55		82		1000		410		52		57		76	
Nickel	MG/KG	20			U		U		U		U		U		U		U		U
Potassium	MG/KG	970	J	430	J	170		410	J	180	J	490	J	470	J	280	J	220	J
Selenium	MG/KG	1.2		1.1	R	1.4			U		U	2.3	J	1.7	J		U		U
Silver	MG/KG	0.76		1.1	R	0.47		0.39		0.42		0.65		0.45		0.32	R	0.32	R
Sodium	MG/KG	490		350		96		310		260		290		290		340		540	
Vanadium	MG/KG	30		33		26		22		23		36		33		13		18	
Zinc	MG/KG	290		44		8.4		20		20		36		25		12		16	

Pesticides & Aroclors Scan

	Units	GS10SB		GS11SB		GS12SB		GS13SB		GS14SB		GS15SB		GS16SB		GS17SB		GS18SB	
% Moisture	%	17		17		26		15		15		21		22		22		25	
4,4'-DDE (p,p'-DDE)	UG/KG		U		U		U	6.9			U		U		U		U		U
4,4'-DDT (p,p'-DDT)	UG/KG	110	N		U		U		U	16	J		U		U		U		U
Endrin Ketone	UG/KG	180	N		U		U		U		U		U		U		U		U
gamma-BHC (Lindane)	UG/KG		U		U		U		U		U		U	1.3	J		U	1.7	J
PCB-1260 (Aroclor 1260)	UG/KG		U		U		U		U		U		U	70			U	42	J

Extractables Scan

	Units	GS10SB		GS11SB		GS12SB		GS13SB		GS14SB		GS15SB		GS16SB		GS17SB		GS18SB	
% Moisture	%	17		17		26		15		15		21		22		22		25	
2-Methylnaphthalene	UG/KG	200	J		U		U		U		U		U		U		U		U
Acenaphthene	UG/KG	210	J		U		U		U		U		U		U		U		U
Acenaphthylene	UG/KG	6100			U		U		U	330	J		U		U		U		U
Anthracene	UG/KG	12000		49	J		U		U	690			U		U		U		U
Benzo(a)Anthracene	UG/KG	23000			U		U	56	J	1400			U		U		U		U
Benzo(b)Fluoranthene	UG/KG	37000			U		U	160	J	2400			U		U	41	J		U
Benzo(ghi)Perylene	UG/KG	5200			U		U		U	540			U		U		U		U
Benzo(k)Fluoranthene	UG/KG	26000		46	J		U	170	J	2000			U		U	43	J		U
Benzo-a-Pyrene	UG/KG	25000			U		U		U	1400			U		U		U		U
bis(2-Ethylhexyl) Phthalate	UG/KG		U		U		U		U		U		U		U		U		UJ
Carbazole	UG/KG	1800			U		U		U	210	J		U		U		U		U
Chrysene	UG/KG	35000			U		U	91	J	2100			U		U		U		U
Dibenzo(a,h)Anthracene	UG/KG	3300			U		U		U	390			UJ		U		U		U
Dibenzofuran	UG/KG	340	J		U		U		U		U		U		U		U		U
Fluoranthene	UG/KG	28000			U		U	130	J	2200			U		U		U		U
Indeno (1,2,3-cd) Pyrene	UG/KG	20000			U		U	51	J	1100			UJ		U		U		U
Naphthalene	UG/KG	390	J		U		U		U		U		U		U		U		U
Pentachlorophenol	UG/KG	680	J		U		U		U		U		UJ		U		U		U
Phenanthrene	UG/KG	2700			U		U		U	510			U		U		U		U
Pyrene	UG/KG	37000			U		U	89	J	2400			U		U		U		U

Volatiles Scan

	Units	GS10SB		GS11SB		GS12SB		GS13SB		GS14SB		GS15SB		GS16SB		GS17SB		GS18SB	
% Moisture	%	17		17		26		15		15		21		22		22		25	
Acetone	UG/KG	78	J	24	J		UJ		UJ	55	J	67	J		UJ		U		UJ
Benzene	UG/KG	2	J		U		U		U		U		U		U		U		U
Methyl Ethyl Ketone	UG/KG		U		UJ		UJ		UJ		U		U		UJ		U		UJ

Table 3. Subsurface Soil Analytical Results, positive values only.

Metals Scan

	Units	GS19SB		GS20SB		GS21SB	
% Moisture	%	20		16		20	
Aluminum	MG/KG	12000	J	4700	J	8600	J
Antimony	MG/KG		UJ		UJ		UJ
Arsenic	MG/KG	8.3		2.3		4.5	
Barium	MG/KG	43		24		28	
Beryllium	MG/KG	0.46		0.3		0.3	
Cadmium	MG/KG		U		U		U
Calcium	MG/KG	190		120		140	
Chromium	MG/KG	12		4.7		14	
Cobalt	MG/KG	9.6		2.2		1.9	
Copper	MG/KG		U		U	3.6	
Iron	MG/KG	20000		6900		13000	
Lead	MG/KG	12	J	6	J	6.8	J
Magnesium	MG/KG	680	J	210	J	420	J
Manganese	MG/KG	600		140		95	
Nickel	MG/KG		U		U		U
Potassium	MG/KG	480	J	170	J	300	J
Selenium	MG/KG	1.7	J		U	0.95	R
Silver	MG/KG	0.53		0.25	R	0.4	
Sodium	MG/KG	280		340		310	
Vanadium	MG/KG	31		14		21	
Zinc	MG/KG	30		11		16	

Pesticides & Aroclors Scan

	Units	GS19SB		GS20SB		GS21SB	
% Moisture	%	21		18		20	
4,4'-DDE (p,p'-DDE)	UG/KG		U		U		U
4,4'-DDT (p,p'-DDT)	UG/KG		U		U		U
Endrin Ketone	UG/KG		U		U		U
gamma-BHC (Lindane)	UG/KG		U		U		U
PCB-1260 (Aroclor 1260)	UG/KG	39	J		U		U

	Units	GS19SB		GS20SB		GS21SB	
% Moisture	%	21		18		20	
2-Methylnaphthalene	UG/KG		U		U		U
Acenaphthene	UG/KG		U		U		U
Acenaphthylene	UG/KG		U		U		U
Anthracene	UG/KG		U		U		U
Benzo(a)Anthracene	UG/KG		U		U		U
Benzo(b)Fluoranthene	UG/KG		U		U		U
Benzo(ghi)Perylene	UG/KG		U	120	J		U
Benzo(k)Fluoranthene	UG/KG		U		U		U
Benzo-a-Pyrene	UG/KG		U		U		U
bis(2-Ethylhexyl) Phthalate	UG/KG		UJ		U		U
Carbazole	UG/KG		U		U		U
Chrysene	UG/KG		U		U		U
Dibenzo(a,h)Anthracene	UG/KG		U		U		U
Dibenzofuran	UG/KG		U		U		U
Fluoranthene	UG/KG		U		U		U
Indeno (1,2,3-cd) Pyrene	UG/KG		U		U		U
Naphthalene	UG/KG		U		U		U
Pentachlorophenol	UG/KG		U		U		U
Phenanthrene	UG/KG		U		U		U
Pyrene	UG/KG		U		U		U

Volatiles Scan

	Units	GS19SB		GS20SB		GS21SB	
% Moisture	%	21		18		20	
Acetone	UG/KG		UJ		U		UJ
Benzene	UG/KG		U		U		U
Methyl Ethyl Ketone	UG/KG		UJ		U		UJ

Data Qualifiers

U-Analyte not detected at or above reporting limit.
J-Identification of analyte is acceptable; reported value is an estimate.
UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification.
NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to interferences. | A-Analyte analyzed in replicate. Reported value is 'average' of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Table 4. Sediment Analytical Results, positive values only.
Page 1 of 3

Metals Scan

	Units	GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
% Moisture	%	61		56		84		77		54		20		22		27	
Aluminum	MG/KG	8200	J	4700	J	16000	J	9100	J	4900	J	450	J	140	J	510	J
Antimony	MG/KG		UJ		UJ		UJ		UJ	2.1	R	0.7	R		UJ		U
Arsenic	MG/KG	5.7		1.8	R	7.9	R	5.5		2.9	R		U		U		U
Barium	MG/KG	89		77		300		120		71		6.8		3.2		15	
Beryllium	MG/KG	0.39		0.56		1.3		1.2		0.51			U		U	0.1	
Calcium	MG/KG	1500		880		2000		2000		1200		250			U	180	
Chromium	MG/KG	13		7.8		24		15		8.4			U		U	1.4	
Cobalt	MG/KG	4.4		4.7		12		11		5.5		0.61	R	0.47		1	
Iron	MG/KG	15000		6400		24000		13000		8400		950		340		2200	J
Lead	MG/KG	12	J	20	J	41	J	21		12		1.8		1.2	J	3.6	
Magnesium	MG/KG	1000	J	410	J	1200	J	1000	J	660	J	64	J		UJ	81	
Manganese	MG/KG	340		500		720		280		320		52		53		44	
Potassium	MG/KG	700	J	410	J	1100	J	811	J	480	J	90	J	52	J	56	
Selenium	MG/KG	1.9	R		U	4.2			U		U		U		U		U
Silver	MG/KG	0.68	R	0.45	R	1.1	R	1.1	R	0.71	R	0.24	R		U		U
Sodium	MG/KG	690		580		1500		1200		600		330		330		68	
Vanadium	MG/KG	24		13		41		23		13		1.6	R	0.57	R	2.4	
Zinc	MG/KG	36		33		130		84		39		3.6			U	4.6	

Pesticides & Aroclors Scan

	Units	GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
% Moisture	%	55		52		79		78		54		20		18		19	
4,4'-DDE (p,p'-DDE)	UG/KG		U	7.9			U		U		U		U		U		U
beta-BHC	UG/KG		U		U	12			U		U		U		U		U
Endosulfan II (beta)	UG/KG		U	6.5	J		U		U		U		U		U		U
Endosulfan Sulfate	UG/KG		U	10	N	14	NJ		U		U		U		U		U

Extractables Scan

	Units	GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
% Moisture	%	55		52		79		78		54		20		18		19	
Anthracene	UG/KG		U		U	270	J		U		U		U		U		U
Benzaldehyde	UG/KG	89	J		U	110	J	130	J		U		U		U		U
Benzo(a)Anthracene	UG/KG		U		U	150	J		U		U		U		U		U
Benzo(b)Fluoranthene	UG/KG		U		U	540	J		U		U		U		U		U
Benzo(ghi)Perylene	UG/KG	92	J		U		U		U		U		U		U		U
Benzo(k)Fluoranthene	UG/KG		U		U	560	J		U		U		U		U		U
Benzo-a-Pyrene	UG/KG		U		U	150	J		U		U		U		U		U
Chrysene	UG/KG		U		U	250	J		U		U		U		U		U
Fluoranthene	UG/KG		U		U	340	J		U		U		U		U		U
Indeno (1,2,3-cd) Pyrene	UG/KG		U		U	180	J		U		UJ		U		UJ		U
Naphthalene	UG/KG		U		U		U	3	J		U		U		U		U
Phenanthrene	UG/KG		U		U	120	J		U		U		U		U		U
Pyrene	UG/KG		U		U	220	J	120	J		U		U		U		U

Extractables Scan

	Units	GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
2-Methylnaphthalene	UG/KG	0.6	J	0.9	J	33		2	J	0.8	J	0.4	J	0.4	J		U
Acenaphthene	UG/KG	0.5	J	1	J	100		5		0.9	J		U		U		U
Acenaphthylene	UG/KG	3		2		44		9			U		U		U		U
Anthracene	UG/KG	3		7		140		34		7			U		U		U
Benzo(a)Anthracene	UG/KG	1	J	7		110		19		12			U		U		U
Benzo-a-Pyrene	UG/KG	2		4		120		17		16			U		U		U
Chrysene	UG/KG	1	J	10		200		36		26			U		U		U
Dibenzo(a,h)Anthracene	UG/KG		U	1	J	40		6		4		1			U		U
Fluoranthene	UG/KG	2		21		190		50		34			U		U		U
Fluorene	UG/KG	0.5	J	2		82		6		1	J	0.3	J		U		U
Naphthalene	UG/KG	0.6	J	0.6	J	51		3	J	0.9	J	0.5	J	0.4	J	0.4	J
Phenanthrene	UG/KG	2	J	12		72		11			U	4			U		U
Pyrene	UG/KG	2		15		140		33		27			U		U		U

Miscellaneous Extractables

		GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
.GAMMA.-SITOSTEROL	UG/KG		NR	1400	NJ		NR		NR		NR		NR		NR		NR
17 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
1-DOCOSENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
1-HEXADECENE	UG/KG	540	NJ		NR	1000	NJ		NR		NR		NR		NR		NR
23 UNKNOWN COMPOUNDS	UG/KG	23000	J		NR		NR		NR		NR		NR		NR		NR
24 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR	54000	J		NR		NR		NR		NR
25 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR	140000	J		NR		NR		NR
25 UNKNOWNS	UG/KG		NR		NR	54000	J		NR		NR		NR		NR		NR
28 UNIDENTIFIED COMPOUNDS	UG/KG		NR	92000	J		NR		NR		NR		NR		NR		NR
3 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR	170	J
BENZENE, 1-METHYL-2-ISOPROPYL	UG/KG		NR		NR		NR		NR	1200	NJ		NR		NR		NR
BENZO [E] PYRENE	UG/KG		NR		NR	590	NJ		NR		NR		NR		NR		NR
CHOLESTANOL	UG/KG		NR		NR		NR	1600	NJ		NR		NR		NR		NR
ERGOST-5-EN-3-OL, (3.BETA.)-	UG/KG		NR		NR		NR	1700	NJ		NR		NR		NR		NR
ERGOST-5-N-3-OL, (3.BETA.)-	UG/KG	1500	NJ		NR		NR		NR		NR		NR		NR		NR
HEXADECANOIC ACID	UG/KG	420	NJ		NR		NR		NR		NR		NR		NR		NR
PHENANTHRENONE DERIVATIVE	UG/KG		NR		NR		NR		NR	2500	NJ		NR		NR		NR
STIGMAST-4-EN-3-ONE	UG/KG	730	NJ		NR	1400	NJ	2200	NJ	800	NJ		NR		NR		NR
STIGMASTEROL	UG/KG	1100	NJ		NR		NR		NR		NR		NR		NR		NR
UNKNOWN ALCOHOL	UG/KG		NR		NR		NR	9200	J		NR		NR		NR		NR
UNKNOWN CARBOXYLIC ACID	UG/KG		NR		NR		NR		NR	500	J		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR		NR		NR		NR	61	J	69	J		NR
UNKNOWN KETONE	UG/KG		NR		NR		NR	1800	J		NR		NR		NR		NR

Volatiles Scan

	Units	GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
% Moisture	%	55		52		79		78		54		20		18		19	
Acetone	UG/KG	94	J	130	J	350	J	520	J	51	J	22	J	49	J	29	J
Carbon Disulfide	UG/KG	5	J		U	51	J		U		U		U		U		U
Methyl Ethyl Ketone	UG/KG		UJ		UJ		U	88	J		U		UJ		U		UJ

Miscellaneous Volatiles

		GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
ACETALDEHYDE	UG/KG		NR		NR		NR	71	NJ		NR		NR		NR		NR
BUTANAL, 3-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
PROPANAL, 2-MEHTYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR		NR	180	J	33	J		NR		NR	8	J

Data Qualifiers

U-Analyte not detected at or above reporting limit.
J-Identification of analyte is acceptable; reported value is an estimate.
UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification.
NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to interferences. | A-Analyte analyzed in replicate. Reported value is 'average' of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Table 5. Groundwater Analytical Results, positive values only.

Metals Scan

	Units	GS01GW		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
Aluminum	UG/L		UJ	450	J	850	J	1700	J	370	J	74	
Barium	UG/L	20		120		29		26		32			U
Beryllium	UG/L	0.11		0.14		0.11			U	0.9			U
Calcium	UG/L	4600		16000		3600		3500		15000			U
Chromium	UG/L	1.8	R	0.92		1.8		1.6			U		U
Cobalt	UG/L	1.2		1.2	R		U		U	10			U
Copper	UG/L		U		U		U		U		U	0.67	
Iron	UG/L	1500		1400		2100		1900		12000			U
Magnesium	UG/L	1500		5500		940		930		8200			U
Manganese	UG/L	23		160		110		30		320			U
Nickel	UG/L		U	3.5			U	3.3		20			U
Potassium	UG/L	520		1500		870		1800		1900		100	
Sodium	UG/L	40000		120000		29000		5000		86000		400	
Vanadium	UG/L		U	0.82	R	2		1.9			U		U
Zinc	UG/L		U	13		18			U	42			U

Pesticides & Aroclors Scan

		GS01GW		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
No Detected Compounds													

Extractables Scan

		GS01GW		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
No Detected Compounds													

Miscellaneous Extractables

		GS01GW		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
2 UNKNOWN COMPOUNDS	UG/L		NR		NR		NR		NR	4.7	J		NR
D-LIMONENE	UG/L	2.2	NJ		NR		NR		NR		NR		NR
LIMONENE	UG/L		NR	2.2	NJ	2.1	NJ		NR		NR		NR

Volatiles Scan

	Units	GS01GW		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
Methyl Ethyl Ketone	UG/L		UJ		UJ		UJ	7.2	J		UJ		NR

Miscellaneous Volatiles

	Units	GS01GW		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
INDANE	UG/L		NR		NR	1.3	NJ		NR		NR		NR

Data Qualifiers

U-Analyte not detected at or above reporting limit.
J-Identification of analyte is acceptable; reported value is an estimate.
UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification.
NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to interferences. | A-Analyte analyzed in replicate. Reported value is 'average' of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Table 6. Surface Soil Analytical Results.

Metals Scan

	Units	GS01SS		GS02SS		GS03SS		GS04SS		GS05SS		GS06SS		GS07SS		GS08SS	
% Moisture	%	15		23		25		23		15		26		17		5	
Aluminum	MG/KG	4700	J	7800	J	8900	J	4300	J	3100	J	6700	J	2800	J	1800	J
Antimony	MG/KG	0.56	UJ	0.64	R	0.64	U	0.63	U	0.57	U	0.65	U	0.58	U	0.5	U
Arsenic	MG/KG	6.3		3.3	J	11		2		13		2		3.6		3.4	
Barium	MG/KG	72		120		67		60		37		85		34		21	
Beryllium	MG/KG	0.33		0.94		0.94		0.37		0.3		0.28		0.2		0.19	
Cadmium	MG/KG	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.09	
Calcium	MG/KG	1100		690		790		690		500		1200		810		800	
Chromium	MG/KG	8.4		6.1		20		6		7.5		7.7		4.5		4	
Cobalt	MG/KG	5.8		17		8.1		1.7		6.6		1.4		2		1.5	
Copper	MG/KG	6		2	J	6.5	U	3.9	U	3	U	4.9	U	3.5	U	2.9	U
Cyanide	MG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Iron	MG/KG	10000		8400		27000	J	4500	J	15000	J	5600	J	5400	J	4700	J
Lead	MG/KG	11	J	17		120		18		19		17		11		12	
Magnesium	MG/KG	520	J	470	J	680		280		180		550		250		180	
Manganese	MG/KG	630		2800		550		140		610		170		180		230	
Nickel	MG/KG	4.8	U	8.3	U	5.1	U	2.6	U	2	U	2.8	U	1.9	U	1.7	U
Potassium	MG/KG	380	J	240	J	350		200		120		430		170		150	
Selenium	MG/KG	1.3		0.93	R	1.9	J	0.63	U	0.87	U	0.65	U	0.79	U	0.68	U
Silver	MG/KG	0.39	R	0.71	R	0.63		0.26	R	0.43		0.29		0.17	U	0.15	U
Sodium	MG/KG	270		300		82	J	120	J	58	J	110		63		39	U
Thallium	MG/KG	0.73	U	0.81	U	0.83	U	0.81	U	0.73	U	0.84	U	0.75	U	0.65	U
Total Mercury	MG/KG	0.06	U	0.07	U	0.07	U	0.07	U	0.06	U	0.07	U	0.06	U	0.05	U
Vanadium	MG/KG	17		15		46		11		18		13		8.1		7.1	
Zinc	MG/KG	29		47		34		27		23		35		24		26	

Pesticides & Aroclors Scan

		GS01SS		GS02SS		GS03SS		GS04SS		GS05SS		GS06SS		GS07SS		GS08SS	
% Moisture	%	14		23		24		24		15		26		15		4	
4,4'-DDD (p,p'-DDD)	UG/KG	3.8	U	4.3	U	4.3	U	4.3	U	3.9	U	4.5	U	3.9	U	3.4	U
4,4'-DDE (p,p'-DDE)	UG/KG	3.8	U	4.3	U	4.3	U	4.3	U	9.9	U	4.5	U	6.4	U	13	U
4,4'-DDT (p,p'-DDT)	UG/KG	3.8	U	4.3	U	4.3	U	4.3	U	4	U	4.5	U	12	J	41	J
Aldrin	UG/KG	2	U	2.2	U	2.2	U	2.2	U	2	U	2.3	U	2	U	1.8	U
alpha-BHC	UG/KG	2	U	2.2	U	2.2	U	2.2	U	2	U	2.3	U	2	U	1.8	U
alpha-Chlordane /2	UG/KG	2	U	2.2	U	2.2	U	2.2	U	2	U	2.3	U	2	U	1.8	U
beta-BHC	UG/KG	2	U	2.2	U	2.2	U	2.2	U	2	U	2.3	U	2	U	1.8	U
delta-BHC	UG/KG	2	U	2.2	U	2.2	U	2.2	U	2	U	2.3	U	2	U	1.8	U
Dieldrin	UG/KG	3.8	U	4.3	U	4.3	U	4.3	U	3.9	U	4.5	U	3.9	U	3.4	U
Endosulfan I (alpha)	UG/KG	2	U	2.2	U	2.2	U	2.2	U	2	U	2.3	U	2	U	1.8	U
Endosulfan II (beta)	UG/KG	3.8	U	4.3	U	4.3	U	4.3	U	3.9	U	4.5	U	3.9	U	3.4	U
Endosulfan Sulfate	UG/KG	3.8	U	4.3	U	4.3	U	4.3	U	3.9	U	4.5	U	3.9	U	3.4	U
Endrin	UG/KG	3.8	U	4.3	U	4.3	U	4.3	U	12	U	4.5	U	7.1	U	10	U
Endrin Aldehyde	UG/KG	3.8	U	4.3	U	4.3	U	4.3	U	18	J	4.5	U	3.9	U	17	J
Endrin Ketone	UG/KG	3.8	U	4.3	U	4.3	U	4.3	U	17	U	4.5	U	20	U	24	U
gamma-BHC (Lindane)	UG/KG	2	U	2.2	U	2.2	U	2.2	U	2	U	2.3	U	2	U	1.8	U
gamma-Chlordane /2	UG/KG	2	U	2.2	U	2.2	U	2.2	U	2	U	2.3	U	2	U	1.8	U
Heptachlor	UG/KG	2	U	2.2	U	2.2	U	2.2	U	2	U	2.3	U	2	U	1.8	U
Heptachlor Epoxide	UG/KG	2	U	2.2	U	2.2	U	2.2	U	2	U	2.3	U	2	U	1.8	U
Methoxychlor	UG/KG	20	U	22	U	22	U	22	U	48	U	23	U	47	U	74	NJ
PCB-1016 (Aroclor 1016)	UG/KG	38	U	43	U	43	U	43	U	39	U	45	U	39	U	34	U
PCB-1221 (Aroclor 1221)	UG/KG	78	U	87	U	88	U	88	U	79	U	91	U	79	U	70	U
PCB-1232 (Aroclor 1232)	UG/KG	38	U	43	U	43	U	43	U	39	U	45	U	39	U	34	U
PCB-1242 (Aroclor 1242)	UG/KG	38	U	43	U	43	U	43	U	39	U	45	U	39	U	34	U
PCB-1248 (Aroclor 1248)	UG/KG	38	U	43	U	43	U	43	U	39	U	45	U	39	U	34	U
PCB-1254 (Aroclor 1254)	UG/KG	38	U	43	U	43	U	43	U	39	U	45	U	39	U	34	U
PCB-1260 (Aroclor 1260)	UG/KG	38	U	43	U	43	U	43	U	39	U	45	U	39	U	34	U
Toxaphene	UG/KG	200	U	220	U	220	U	220	U	200	U	230	U	200	U	180	U

Extractables Scan

	Units	GS01SS		GS02SS		GS03SS		GS04SS		GS05SS		GS06SS		GS07SS		GS08SS	
% Moisture	%	14		23		24		24		15		26		15		4	
(3-and/or 4-)Methylphenol	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
1,1-Biphenyl	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	45	J	1400	U
1,2,4,5-Tetrachlorobenzene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
2,4,5-Trichlorophenol	UG/KG	970	U	1100	U	1100	U	1100	U	980	U	1100	U	980	U	3500	U
2,4,6-Trichlorophenol	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
2,4-Dichlorophenol	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
2,4-Dimethylphenol	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
2,4-Dinitrophenol	UG/KG	970	UR	1100	UR	1100	UJ	1100	U	980	U	1100	UJ	980	UJ	3500	UJ
2,4-Dinitrotoluene	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
2,6-Dinitrotoluene	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
2-Chloronaphthalene	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
2-Chlorophenol	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
2-Methyl-4,6-Dinitrophenol	UG/KG	970	U	1100	U	1100	UJ	1100	U	980	U	1100	U	980	UJ	3500	UJ
2-Methylnaphthalene	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	120	J	1400	U
2-Methylphenol	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
2-Nitroaniline	UG/KG	970	U	1100	U	1100	U	1100	U	980	U	1100	U	980	U	3500	U
2-Nitrophenol	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
3,3'-Dichlorobenzidine	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
3-Nitroaniline	UG/KG	970	U	1100	U	1100	U	1100	U	980	U	1100	U	980	U	3500	U
4-Bromophenyl Phenyl Ether	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
4-Chloro-3-Methylphenol	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
4-Chloroaniline	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
4-Chlorophenyl Phenyl Ether	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
4-Nitroaniline	UG/KG	970	UJ	1100	UJ	1100	U	1100	U	980	U	1100	U	980	U	3500	U
4-Nitrophenol	UG/KG	970	UJ	1100	UJ	1100	U	1100	U	980	U	1100	U	980	U	3500	U
Acenaphthene	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	170	J	1400	U
Acenaphthylene	UG/KG	380	U	430	U	430	U	430	U	120	J	450	U	320	J	480	J
Acetophenone	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Anthracene	UG/KG	380	U	430	U	430	U	430	U	470		450	U	970		930	J
Atrazine	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Benzaldehyde	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Benzo(a)Anthracene	UG/KG	380	U	430	U	430	U	430	U	770		450	U	2500		1500	
Benzo(b)Fluoranthene	UG/KG	380	U	430	U	420	U	430	U	1800	J	450	U	4600	J	11000	J
Benzo(ghi)Perylene	UG/KG	380	U	430	U	430	U	430	U	380	J	450	U	690		3800	
Benzo(k)Fluoranthene	UG/KG	380	U	430	U	430	U	430	U	2100	J	450	U	5200	J	12000	J
Benzo-a-Pyrene	UG/KG	380	U	430	U	430	U	430	U	810		450	U	2100		3700	
Benzyl Butyl Phthalate	UG/KG	380	U	430	U	430	U	430	UJ	390	UJ	450	U	390	U	1400	U
bis(2-Chloroethoxy)Methane	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
bis(2-Chloroethyl) Ether	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
bis(2-Chloroisopropyl) Ether	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
bis(2-Ethylhexyl) Phthalate	UG/KG	380	U	430	U	430	U	430	UJ	390	UJ	450	U	390	U	1400	U
Caprolactam	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Carbazole	UG/KG	380	U	430	U	430	U	430	U	200	J	450	U	510		190	J
Chrysene	UG/KG	380	U	430	U	430	U	430	U	1500		450	U	4900		2300	
Dibenzo(a,h)Anthracene	UG/KG	380	UJ	430	UJ	430	U	430	U	190	J	450	U	520		1700	
Dibenzofuran	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	240	J	1400	U
Diethyl Phthalate	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Dimethyl Phthalate	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Di-n-Butylphthalate	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Di-n-Octylphthalate	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Fluoranthene	UG/KG	380	U	430	U	430	U	430	U	2600		450	U	8200		2600	
Fluorene	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	180	J	1400	U
Hexachlorobenzene (HCB)	UG/KG	380	UJ	430	UJ	430	U	430	U	390	U	450	U	390	U	1400	U
Hexachlorobutadiene	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Hexachlorocyclopentadiene (HCCP)	UG/KG	380	UJ	430	UJ	430	U	430	U	390	U	450	UJ	390	U	1400	U
Hexachloroethane	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Indeno (1,2,3-cd) Pyrene	UG/KG	380	UJ	430	UJ	430	U	430	U	610		450	U	1100		5000	
Isophorone	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Naphthalene	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	87	J	1400	U

Extractables Scan

	Units	GS01SS		GS02SS		GS03SS		GS04SS		GS05SS		GS06SS		GS07SS		GS08SS	
Nitrobenzene	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
n-Nitrosodi-n-Propylamine	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
n-Nitrosodiphenylamine/Diphenylamine	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Pentachlorophenol	UG/KG	970	UJ	1100	UJ	1100	U	1100	U	980	U	1100	U	980	U	3500	U
Phenanthrene	UG/KG	380	U	430	U	430	U	430	U	320	J	450	U	4200		610	J
Phenol	UG/KG	380	U	430	U	430	U	430	U	390	U	450	U	390	U	1400	U
Pyrene	UG/KG	380	U	430	U	430	U	430	U	1500		450	U	6200		2500	

Volatiles Scan

		GS01SS		GS02SS		GS03SS		GS04SS		GS05SS		GS06SS		GS07SS		GS08SS	
% Moisture	%	14		23		24		24		15		26		15			NR
1,1,1-Trichloroethane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
1,1,2,2-Tetrachloroethane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
1,1,2-Trichloroethane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
1,1-Dichloroethane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
1,1-Dichloroethene (1,1-Dichloroethylene)	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
1,2,3-Trichlorobenzene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NR
1,2,4-Trichlorobenzene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
1,2-Dibromo-3-Chloropropane (DBCP)	UG/KG	11	U	12	U	13	UJ	12	UJ	10	UJ	13	U	10	UJ		NR
1,2-Dibromoethane (EDB)	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
1,2-Dichlorobenzene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
1,2-Dichloroethane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
1,2-Dichloropropane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
1,3-Dichlorobenzene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
1,4-Dichlorobenzene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Acetone	UG/KG	100	J	180	J	25	J	28	J	91	J	82	J	87	J		NR
Benzene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Bromochloromethane	UG/KG		NA		NA		NA		NA		NA		NA		NA		NR
Bromodichloromethane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Bromoform	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Bromomethane	UG/KG	11	UJ	12	UJ	13	UJ	12	UJ	10	UJ	13	U	10	UJ		NR
Carbon Disulfide	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Carbon Tetrachloride	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Chlorobenzene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Chloroethane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Chloroform	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Chloromethane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
cis-1,2-Dichloroethene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
cis-1,3-Dichloropropene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Cyclohexane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Dibromochloromethane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Dichlorodifluoromethane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Ethyl Benzene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Isopropylbenzene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Methyl Acetate	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Methyl Butyl Ketone	UG/KG	11	U	12	U	13	UJ	12	UJ	10	UJ	13	UJ	10	UJ		NR
Methyl Ethyl Ketone	UG/KG	11	U	21		13	UJ	12	UJ	10	UJ	13	UJ	10	UJ		NR
Methyl Isobutyl Ketone	UG/KG	11	U	12	U	13	UJ	12	UJ	10	UJ	13	UJ	10	UJ		NR
Methyl T-Butyl Ether (MTBE)	UG/KG	11	U	12	U	13	U	12	UJ	10	UJ	13	U	10	UJ		NR
Methylcyclohexane	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Methylene Chloride	UG/KG	11	U	12	U	13	UJ	12	U	10	U	13	U	10	U		NR
Styrene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Tetrachloroethene (Tetrachloroethylene)	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Toluene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Total Xylenes	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
trans-1,2-Dichloroethene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
trans-1,3-Dichloropropene	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Trichloroethene (Trichloroethylene)	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Trichlorofluoromethane (Freon 11)	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR
Vinyl Chloride	UG/KG	11	U	12	U	13	U	12	U	10	U	13	U	10	U		NR

Table 6. Surface Soil Analytical Results.
Page 4 of 10

Metals Scan

		GS09SS		GS10SS		GS11SS		GS12SS		GS13SS		GS14SS		GS15SS		GS16SS	
% Moisture	%	19		11		7		18		11		14		15		21	
Aluminum	MG/KG	2500	J	4700	J	4400	J	5500	J	4400	J	4800	J	8000	J	7700	J
Antimony	MG/KG	1.2	R	1	R	0.51	UJ	0.58	U	0.6	R	0.69	J	0.56	UJ	0.7	UJ
Arsenic	MG/KG	0.95	R	6.8		3.7		4.4		6.3		9		6.9		5.5	J
Barium	MG/KG	25		120		54		83		58		65		72		50	
Beryllium	MG/KG	0.15		0.46		0.44		0.46		0.54		0.44		0.71		0.43	
Cadmium	MG/KG	0.05	U	0.34		0.19		0.05	U	0.16	R	0.11	R	0.1		0.05	U
Calcium	MG/KG	340		2600		660		760		1200		1800		2000		1200	
Chromium	MG/KG	4.1		23		12		8.9		7.8		8.6		11		10	
Cobalt	MG/KG	0.95		4.8		5.4		7.3		4.2		7.3		11		4	
Copper	MG/KG	0.87	UJ	19	J	5	UJ	3.4	U	7.2	J	5.7	UJ	4.8	UJ	5.3	U
Cyanide	MG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Iron	MG/KG	2800		14000		11000		11000	J	12000		11000		12000		12000	
Lead	MG/KG	8.8		80		290		25		33		24		26		15	J
Magnesium	MG/KG	160	J	780	J	260	J	380		280	J	340	J	430	J	510	J
Manganese	MG/KG	28		500		880		990		940		870		1800		240	
Nickel	MG/KG	1.5	U	8.5	U	4.9	U	3.2	U	5.2	U	4.1	U	6.7	U	3.6	U
Potassium	MG/KG	120	J	560	J	330	J	280		390	J	200	J	580	J	490	J
Selenium	MG/KG	0.6	U	0.98	R	0.77	R	1.1	U	1.2		0.63	R	1.1	R	1.3	
Silver	MG/KG	0.28	R	0.49		0.38		0.43		0.33	R	0.37		0.5		0.39	R
Sodium	MG/KG	300		320		200		91		230		300		310		270	
Thallium	MG/KG	0.77	U	0.7	U	0.66	U	0.75	U	0.69	U	0.72	U	0.73	U	0.78	U
Total Mercury	MG/KG	0.06	U	0.06	U	0.05	U	0.06	U	0.07	U	0.06	U	0.06	U	0.06	U
Vanadium	MG/KG	6.6		18		16		22		17		21		23		22	
Zinc	MG/KG	19		160		840		28		72		44		48		33	

Pesticides & ArocIors Scan

		GS09SS		GS10SS		GS11SS		GS12SS		GS13SS		GS14SS		GS15SS		GS16SS	
% Moisture	%	26		12		7		17		13		14		16		21	
4,4'-DDD (p,p'-DDD)	UG/KG	4.5	U	3.8	U	3.5	U	4	U	3.8	U	3.8	U	3.9	U	4.2	U
4,4'-DDE (p,p'-DDE)	UG/KG	4.5	U	3.8	U	3.5	U	4	U	30	U	3.8	U	3.9	U	2.5	J
4,4'-DDT (p,p'-DDT)	UG/KG	4.5	U	43	J	30	J	4	U	38	J	10	NJ	30	NJ	4.2	U
Aldrin	UG/KG	2.3	U	1.9	U	1.8	U	2	U	2	U	2	U	2	U	2.2	U
alpha-BHC	UG/KG	2.3	U	1.9	U	1.8	U	2	U	2	U	2	U	2	U	2.2	U
alpha-Chlordane /2	UG/KG	2.3	U	1.9	U	1.8	U	2	U	2	U	2	U	2	U	2.2	U
beta-BHC	UG/KG	2.3	U	12	U	5.9	U	2	U	2	U	2	U	2	U	2.2	U
delta-BHC	UG/KG	2.3	U	1.9	U	1.8	U	2	U	2	U	2	U	2	U	2.2	U
Dieldrin	UG/KG	4.5	U	3.8	U	3.5	U	4	U	3.8	U	3.8	U	3.9	U	4.2	U
Endosulfan I (alpha)	UG/KG	2.3	U	1.9	U	1.8	U	2	U	2	U	2	U	2	U	2.2	U
Endosulfan II (beta)	UG/KG	4.5	U	3.8	U	3.5	U	4	U	3.8	U	3.8	U	3.9	U	4.2	U
Endosulfan Sulfate	UG/KG	4.5	U	3.8	U	3.5	U	4	U	3.8	U	3.8	U	3.9	U	4.2	U
Endrin	UG/KG	4.5	U	15	U	3.5	U	4	U	42	J	3.8	U	11	U	4.2	U
Endrin Aldehyde	UG/KG	4.5	U	3.8	U	3.5	U	4	U	49	J	3.8	U	27	NJ	4.2	U
Endrin Ketone	UG/KG	4.5	U	3.8	U	3.5	U	4	U	150		3.8	U	3.9	U	14	J
gamma-BHC (Lindane)	UG/KG	2.3	U	1.9	U	1.8	U	2	U	2	U	2	U	2	U	2.2	U
gamma-Chlordane /2	UG/KG	2.3	U	1.9	U	1.8	U	2	U	18	U	2	U	2	U	2.2	U
Heptachlor	UG/KG	2.3	U	1.9	U	1.8	U	2	U	2	U	2	U	2	U	2.2	U
Heptachlor Epoxide	UG/KG	2.3	U	1.9	U	1.8	U	2	U	2	U	2	U	2	U	2.2	U
Methoxychlor	UG/KG	23	U	81	NJ	54	U	20	U	20	U	34	NJ	61	U	22	U
PCB-1016 (Aroclor 1016)	UG/KG	45	U	38	U	35	U	40	U	38	U	38	U	39	U	42	U
PCB-1221 (Aroclor 1221)	UG/KG	91	U	76	U	72	U	81	U	77	U	78	U	80	U	85	U
PCB-1232 (Aroclor 1232)	UG/KG	45	U	38	U	35	U	40	U	38	U	38	U	39	U	42	U
PCB-1242 (Aroclor 1242)	UG/KG	45	U	38	U	35	U	40	U	38	U	38	U	39	U	42	U
PCB-1248 (Aroclor 1248)	UG/KG	45	U	38	U	35	U	40	U	38	U	38	U	39	U	42	U
PCB-1254 (Aroclor 1254)	UG/KG	45	U	38	U	35	U	40	U	38	U	38	U	39	U	42	U
PCB-1260 (Aroclor 1260)	UG/KG	45	U	38	U	35	U	40	U	38	U	38	U	39	U	42	U
Toxaphene	UG/KG	230	U	190	U	180	U	200	U	200	U	200	U	200	U	220	U

Extractables Scan

	Units	GS09SS		GS10SS		GS11SS		GS12SS		GS13SS		GS14SS		GS15SS		GS16SS	
% Moisture	%	26		12		7		17		13		14		16		21	
(3-and/or 4-)Methylphenol	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
1,1-Biphenyl	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
1,2,4,5-Tetrachlorobenzene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
2,4,5-Trichlorophenol	UG/KG	1100	U	940	U	890	U	1000	U	2900	U	970	U	990	U	1100	U
2,4,6-Trichlorophenol	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
2,4-Dichlorophenol	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
2,4-Dimethylphenol	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
2,4-Dinitrophenol	UG/KG	1100	UJ	940	UJ	890	UJ	1000	UJ	2900	U	970	UJ	990	UR	1100	U
2,4-Dinitrotoluene	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
2,6-Dinitrotoluene	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
2-Chloronaphthalene	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
2-Chlorophenol	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
2-Methyl-4,6-Dinitrophenol	UG/KG	1100	U	940	U	890	U	1000	UJ	2900	U	970	U	990	U	1100	U
2-Methylnaphthalene	UG/KG	450	U	69	J	70	J	400	U	1100	U	380	U	390	U	420	U
2-Methylphenol	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
2-Nitroaniline	UG/KG	1100	U	940	U	890	U	1000	U	2900	U	970	U	990	U	1100	U
2-Nitrophenol	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
3,3'-Dichlorobenzidine	UG/KG	450	U	380	U	350	U	400	U	1100	UJ	380	U	390	U	420	UJ
3-Nitroaniline	UG/KG	1100	U	940	U	890	U	1000	U	2900	U	970	U	990	U	1100	U
4-Bromophenyl Phenyl Ether	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
4-Chloro-3-Methylphenol	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
4-Chloroaniline	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
4-Chlorophenyl Phenyl Ether	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
4-Nitroaniline	UG/KG	1100	U	940	U	890	U	1000	U	2900	U	970	U	990	UJ	1100	U
4-Nitrophenol	UG/KG	1100	U	940	U	890	U	1000	U	2900	U	970	U	990	UJ	1100	U
Acenaphthene	UG/KG	450	U	97	J	350	U	400	U	1100	U	380	U	390	U	420	U
Acenaphthylene	UG/KG	450	U	1100		330	J	400	U	1000	J	380	U	250	J	87	J
Acetophenone	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Anthracene	UG/KG	450	U	1700		830		400	U	1600		1100		370	J	420	U
Atrazine	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Benzaldehyde	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Benzo(a)Anthracene	UG/KG	450	U	2800		1000		400	U	4300		2300		690		260	J
Benzo(b)Fluoranthene	UG/KG	450	U	5200		2500		400	U	7300	J	4200		1500		700	J
Benzo(ghi)Perylene	UG/KG	450	U	1300		460		400	U	2000		820		360	J	92	J
Benzo(k)Fluoranthene	UG/KG	450	U	2300		1700		400	U	5400	J	2400		1100		730	J
Benzo-a-Pyrene	UG/KG	450	U	3100		800		400	U	3100		2300		650		230	J
Benzyl Butyl Phthalate	UG/KG	450	U	380	U	350	U	400	U	1100	UJ	380	U	390	U	420	UJ
bis(2-Chloroethoxy)Methane	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
bis(2-Chloroethyl) Ether	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
bis(2-Chloroisopropyl) Ether	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
bis(2-Ethylhexyl) Phthalate	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Caprolactam	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Carbazole	UG/KG	450	U	480		210	J	400	U	540	J	280	J	250	J	62	J
Chrysene	UG/KG	450	U	4300		1500		400	U	6200		3100		1700		390	J
Dibenzo(a,h)Anthracene	UG/KG	450	U	750		310	J	400	U	1100		580		200	J	95	J
Dibenzofuran	UG/KG	450	U	120	J	140	J	400	U	1100	U	380	U	390	U	420	U
Diethyl Phthalate	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Dimethyl Phthalate	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Di-n-Butylphthalate	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Di-n-Octylphthalate	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Fluoranthene	UG/KG	450	U	4700		1900		400	U	11000		3100		3100		760	
Fluorene	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Hexachlorobenzene (HCB)	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	UJ	420	U
Hexachlorobutadiene	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Hexachlorocyclopentadiene (HCCP)	UG/KG	450	U	380	UJ	350	U	400	U	1100	U	380	U	390	UJ	420	U
Hexachloroethane	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Indeno (1,2,3-cd) Pyrene	UG/KG	450	U	2300		940		400	U	3100		1700		740	J	270	J
Isophorone	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Naphthalene	UG/KG	450	U	110	J	120	J	400	U	1100	U	380	U	390	U	420	U

Extractables Scan

	Units	GS09SS		GS10SS		GS11SS		GS12SS		GS13SS		GS14SS		GS15SS		GS16SS	
Nitrobenzene	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
n-Nitrosodi-n-Propylamine	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
n-Nitrosodiphenylamine/Diphenylamine	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Pentachlorophenol	UG/KG	1100	U	690	J	640	J	1000	U	2900	U	970	U	990	UJ	1100	U
Phenanthrene	UG/KG	450	U	1400		540		400	U	1600		320	J	1100		310	J
Phenol	UG/KG	450	U	380	U	350	U	400	U	1100	U	380	U	390	U	420	U
Pyrene	UG/KG	450	U	5000		1700		400	U	6800		3300		2200		540	

Volatiles Scan

		GS09SS		GS10SS		GS11SS		GS12SS		GS13SS		GS14SS		GS15SS		GS16SS	
% Moisture	%	26		12		7		17		13		14		16		21	
1,1,1-Trichloroethane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
1,1,2,2-Tetrachloroethane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
1,1,2-Trichloroethane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
1,1-Dichloroethane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
1,1-Dichloroethene (1,1-Dichloroethylene)	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
1,2,3-Trichlorobenzene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
1,2,4-Trichlorobenzene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
1,2-Dibromo-3-Chloropropane (DBCP)	UG/KG	13	U	11	U	11	U	10	U	15	UJ	11	U	10	U	12	U
1,2-Dibromoethane (EDB)	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
1,2-Dichlorobenzene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
1,2-Dichloroethane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
1,2-Dichloropropane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
1,3-Dichlorobenzene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
1,4-Dichlorobenzene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Acetone	UG/KG	13	UJ	84	J	220	J	210	UJ	200	J	75	J	100	J	56	J
Benzene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Bromochloromethane	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Bromodichloromethane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Bromoform	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Bromomethane	UG/KG	13	UJ	11	UJ	11	U	10	U	15	UJ	11	UJ	10	UJ	12	UJ
Carbon Disulfide	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Carbon Tetrachloride	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Chlorobenzene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Chloroethane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Chloroform	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Chloromethane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
cis-1,2-Dichloroethene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
cis-1,3-Dichloropropene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Cyclohexane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Dibromochloromethane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Dichlorodifluoromethane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Ethyl Benzene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Isopropylbenzene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Methyl Acetate	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	3	J	12	U
Methyl Butyl Ketone	UG/KG	13	UJ	11	U	11	UJ	10	UJ	15	UJ	11	U	10	U	12	U
Methyl Ethyl Ketone	UG/KG	13	UJ	11	U	21	J	14	J	15	J	11	U	12		12	U
Methyl Isobutyl Ketone	UG/KG	13	UJ	11	U	11	UJ	10	UJ	15	UJ	11	U	10	U	12	U
Methyl T-Butyl Ether (MTBE)	UG/KG	13	UJ	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Methylcyclohexane	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Methylene Chloride	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Styrene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Tetrachloroethene (Tetrachloroethylene)	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Toluene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Total Xylenes	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
trans-1,2-Dichloroethene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
trans-1,3-Dichloropropene	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Trichloroethene (Trichloroethylene)	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Trichlorofluoromethane (Freon 11)	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U
Vinyl Chloride	UG/KG	13	U	11	U	11	U	10	U	15	U	11	U	10	U	12	U

Table 6. Surface Soil Analytical Results.
Page 7 of 10

Metals Scan

		GS17SS		GS18SS		GS19SS		GS20SS		GS20SD		GS21SS		GS22SS		GS23SS		GS24SS	
% Moisture	%	21		22		15		20		19		22		14		26		47	
Aluminum	MG/KG	9000	J	4900	J	8500	J	6700	J	6100	J	6800	J	4200	J	7500	J	4900	J
Antimony	MG/KG	0.83	UJ	1	UJ	0.89	UJ	0.6	UJ	0.59	UJ	0.96	UJ	0.56	U	0.65	UJ	0.91	U
Arsenic	MG/KG	5.5		5.4		6.5		5.8		4.5		2.7		4		5		6.5	
Barium	MG/KG	120		53		89		410		130		88		42		83		120	
Beryllium	MG/KG	0.94		0.35		0.73		1.2		0.76		0.81		0.43		0.5		0.61	
Cadmium	MG/KG	0.07	R	0.05	U	0.05	U	0.17		0.05	U	0.05	U	0.05	U	0.1	R	0.16	
Calcium	MG/KG	2300		890		2000		1700		1400		190		280		960		1600	
Chromium	MG/KG	8		9.9		8.3		8.2		7.2		5.6		9.4		12		12	
Cobalt	MG/KG	12		7.6		13		17		6.8		14		5.5		6.8		6.8	
Copper	MG/KG	5.5	U	3.1	U	3.8	U	0.95	U	4.3	U	1.5	U	2.5	U	12	J	8.4	U
Cyanide	MG/KG		NA		NA		NA		NA		NA		NA		NA		NA		NA
Iron	MG/KG	12000		10000		12000		12000		8800		7300		9700	J	13000		17000	J
Lead	MG/KG	20	J	15	J	19	J	24	J	22	J	13	J	9.8		24		28	
Magnesium	MG/KG	490	J	340	J	530	J	380	J	410	J	270	J	220		630	J	450	
Manganese	MG/KG	2500		590		1900		5500		1800		2200		470		920		890	
Nickel	MG/KG	9.2	U	3.9	U	6.7	U	8	U	6.1	U	6.7	U	2.2	U	4.8	U	5.3	U
Potassium	MG/KG	620	J	180	J	550	J	240	J	250	J	250	J	170		480	J	370	
Selenium	MG/KG	1.5	J	1.1		1.2		1.3	J	1.1	R	0.8		1.1	U	1.1	R	1.5	U
Silver	MG/KG	0.51	R	0.29		0.53	R	0.9	R	0.42		0.52		0.2		0.46	R	0.47	
Sodium	MG/KG	280		310		290		290		290		300		44	U	340		86	J
Thallium	MG/KG	0.79	U	0.8	U	0.73	U	1.5		0.77	U	0.79	U	0.72	U	0.83	U	1.2	U
Total Mercury	MG/KG	0.08	U	0.06	U	0.07	U	0.08	U	0.07	U	0.06	U	0.06	U	0.08	U	0.09	U
Vanadium	MG/KG	23		20		22		22		17		13		21		23		26	
Zinc	MG/KG	65		34		52		88		63		24		19		49		89	

Pesticides & Aroclors Scan

		GS17SS		GS18SS		GS19SS		GS20SS		GS20SD		GS21SS		GS22SS		GS23SS		GS24SS	
% Moisture	%	21		23		17		21		20		22		13		26		45	
4,4'-DDD (p,p'-DDD)	UG/KG	4.2	U	4.3	U	4	U	4.2	U	4.1	U	4.2	U	3.8	U	4.5	U	6	U
4,4'-DDE (p,p'-DDE)	UG/KG	4.2	U	4.3	U	4	U	4.1	NJ	3.3	NJ	4.2	U	3.8	U	4.5	U	6	U
4,4'-DDT (p,p'-DDT)	UG/KG	4.2	U	4.3	U	4	U	4.2	U	4.1	U	4.2	U	3.8	U	4.5	U	6	U
Aldrin	UG/KG	2.2	U	2.2	U	2	U	2.2	U	2.1	U	2.2	U	2	U	2.3	U	3.1	U
alpha-BHC	UG/KG	2.2	U	2.2	U	2	U	2.2	U	2.1	U	2.2	U	2	U	1.7	NJ	3.1	U
alpha-Chlordane /2	UG/KG	2.2	U	2.2	U	2	U	2.2	U	2.1	U	2.2	U	2	U	2.3	U	3.1	U
beta-BHC	UG/KG	2.2	U	2.2	U	2	U	2.2	U	2.1	U	2.2	U	2	U	2.3	U	5.3	U
delta-BHC	UG/KG	2.2	U	2.2	U	2	U	2.2	U	2.1	U	2.2	U	2	U	2.3	U	3.1	U
Dieldrin	UG/KG	4.2	U	4.3	U	4	U	4.2	U	4.1	U	4.2	U	3.8	U	4.5	U	6	U
Endosulfan I (alpha)	UG/KG	2.2	U	2.2	U	2	U	2.2	U	2.1	U	2.2	U	2	U	2.3	U	3.1	U
Endosulfan II (beta)	UG/KG	4.2	U	4.3	U	4	U	4.2	U	4.1	U	4.2	U	3.8	U	4.5	U	6	U
Endosulfan Sulfate	UG/KG	4.2	U	4.3	U	4	U	4.2	U	4.1	U	4.2	U	3.8	U	4.5	U	6	U
Endrin	UG/KG	6.4	J	4.3	U	4	U	4.2	U	4.1	U	4.2	U	3.8	U	4.5	U	6	U
Endrin Aldehyde	UG/KG	4.2	U	4.3	U	4	U	4.2	U	4.1	U	4.2	U	3.8	U	4.5	U	6	U
Endrin Ketone	UG/KG	20	J	4.3	U	4	U	4.2	U	4.1	U	4.2	U	3.8	U	6.9	J	6	U
gamma-BHC (Lindane)	UG/KG	2.2	U	2.2	U	2	U	2.2	U	2.1	U	2.2	U	2	U	2.3	U	3.1	U
gamma-Chlordane /2	UG/KG	2.2	U	2.2	U	2	U	2.2	U	2.1	U	2.2	U	2	U	2.3	U	3.1	U
Heptachlor	UG/KG	2.2	U	2.2	U	2	U	2.2	U	2.1	U	2.2	U	2	U	2.3	U	3.1	U
Heptachlor Epoxide	UG/KG	2.2	U	2.2	U	2	U	2.2	U	2.1	U	2.2	U	2	U	2.3	U	3.1	U
Methoxychlor	UG/KG	22	U	22	U	20	U	22	U	21	U	22	U	20	U	23	U	31	U
PCB-1016 (Aroclor 1016)	UG/KG	42	U	43	U	40	U	42	U	41	U	42	U	38	U	45	U	60	U
PCB-1221 (Aroclor 1221)	UG/KG	85	U	87	U	81	U	85	U	84	U	86	U	77	U	91	U	120	U
PCB-1232 (Aroclor 1232)	UG/KG	42	U	43	U	40	U	42	U	41	U	42	U	38	U	45	U	60	U
PCB-1242 (Aroclor 1242)	UG/KG	42	U	43	U	40	U	42	U	41	U	42	U	38	U	45	U	60	U
PCB-1248 (Aroclor 1248)	UG/KG	42	U	43	U	40	U	42	U	41	U	42	U	38	U	45	U	60	U
PCB-1254 (Aroclor 1254)	UG/KG	42	U	43	U	40	U	42	U	41	U	42	U	38	U	45	U	60	U
PCB-1260 (Aroclor 1260)	UG/KG	42	U	43	U	40	U	42	U	41	U	42	U	38	U	45	U	60	U
Toxaphene	UG/KG	220	U	220	U	200	U	220	U	210	U	220	U	200	U	230	U	310	U

	Units	GS17SS		GS18SS		GS19SS		GS20SS		GS20SD		GS21SS		GS22SS		GS23SS		GS24SS	
% Moisture	%	21		23		17		21		20		22		13		26		45	
(3-and/or 4-)Methylphenol	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
1,1-Biphenyl	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
1,2,4,5-Tetrachlorobenzene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA		NA
2,4,5-Trichlorophenol	UG/KG	1100	U	1100	U	1000	U	1100	U	1000	U	1100	U	950	U	1100	U	1500	U
2,4,6-Trichlorophenol	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
2,4-Dichlorophenol	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
2,4-Dimethylphenol	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
2,4-Dinitrophenol	UG/KG	1100	U	1100	U	1000	U	1100	U	1000	U	1100	U	950	UJ	1100	UR	1500	UJ
2,4-Dinitrotoluene	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
2,6-Dinitrotoluene	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
2-Chloronaphthalene	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
2-Chlorophenol	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
2-Methyl-4,6-Dinitrophenol	UG/KG	1100	U	1100	U	1000	U	1100	U	1000	U	1100	U	950	U	1100	U	1500	UJ
2-Methylnaphthalene	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
2-Methylphenol	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
2-Nitroaniline	UG/KG	1100	U	1100	U	1000	U	1100	U	1000	U	1100	U	950	U	1100	U	1500	U
2-Nitrophenol	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
3,3'-Dichlorobenzidine	UG/KG	420	UJ	430	U	400	U	420	UJ	410	UJ	420	UJ	380	U	450	U	600	U
3-Nitroaniline	UG/KG	1100	U	1100	U	1000	U	1100	U	1000	U	1100	U	950	U	1100	U	1500	U
4-Bromophenyl Phenyl Ether	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
4-Chloro-3-Methylphenol	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
4-Chloroaniline	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
4-Chlorophenyl Phenyl Ether	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
4-Nitroaniline	UG/KG	1100	U	1100	U	1000	U	1100	U	1000	U	1100	U	950	U	1100	UJ	1500	U
4-Nitrophenol	UG/KG	1100	U	1100	U	1000	U	1100	U	1000	U	1100	U	950	U	1100	UJ	1500	U
Acenaphthene	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Acenaphthylene	UG/KG	270	J	430	U	400	U	420	U	410	U	420	U	380	U	66	J	150	J
Acetophenone	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Anthracene	UG/KG	380	J	430	U	400	U	420	U	410	U	420	U	380	U	430	U	330	J
Atrazine	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Benzaldehyde	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Benzo(a)Anthracene	UG/KG	1000		430	U	400	U	58	J	44	J	420	U	380	U	430	J	990	
Benzo(b)Fluoranthene	UG/KG	2600	J	430	U	400	U	160	J	140	J	420	U	380	U		NA	2700	J
Benzo(ghi)Perylene	UG/KG	290	J	430	U	400	U	420	U	410	U	420	U	380	U	180	J	330	J
Benzo(k)Fluoranthene	UG/KG	2700	J	430	U	400	U	170	J	150	J	420	U	380	U	520		2600	J
Benzo-a-Pyrene	UG/KG	1000		430	U	400	U	46	J	47	J	420	U	380	U	380	J	870	
Benzyl Butyl Phthalate	UG/KG	420	UJ	430	UJ	400	UJ	420	UJ	410	UJ	420	UJ	380	U	450	U	600	U
bis(2-Chloroethoxy)Methane	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
bis(2-Chloroethyl) Ether	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
bis(2-Chloroisopropyl) Ether	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
bis(2-Ethylhexyl) Phthalate	UG/KG	420	U	430	UJ	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Caprolactam	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Carbazole	UG/KG	130	J	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Chrysene	UG/KG	1600		430	U	400	U	98	J	69	J	420	U	380	U	510		1100	
Dibenzo(a,h)Anthracene	UG/KG	330	J	430	U	400	U	420	U	410	U	420	U	380	U	120	J	260	J
Dibenzofuran	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Diethyl Phthalate	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Dimethyl Phthalate	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Di-n-Butylphthalate	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Di-n-Octylphthalate	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Fluoranthene	UG/KG	2500		430	U	400	U	73	J	81	J	420	U	380	U	520		1300	
Fluorene	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Hexachlorobenzene (HCB)	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	UJ	600	U
Hexachlorobutadiene	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Hexachlorocyclopentadiene (HCCP)	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	UJ	600	U
Hexachloroethane	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Indeno (1,2,3-cd) Pyrene	UG/KG	890		430	U	400	U	63	J	51	J	420	U	380	U	340	J	550	J
Isophorone	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Naphthalene	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U

Extractables Scan

	Units	GS17SS		GS18SS		GS19SS		GS20SS		GS20SD		GS21SS		GS22SS		GS23SS		GS24SS	
Nitrobenzene	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
n-Nitrosodi-n-Propylamine	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
n-Nitrosodiphenylamine/Diphenylamine	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Pentachlorophenol	UG/KG	1100	U	1100	U	1000	U	1100	U	1000	U	1100	U	950	U	1100	UJ	1500	U
Phenanthrene	UG/KG	250	J	430	U	400	U	420	U	410	U	420	U	380	U	59	J	600	U
Phenol	UG/KG	420	U	430	U	400	U	420	U	410	U	420	U	380	U	450	U	600	U
Pyrene	UG/KG	1700		430	U	400	U	100	J	63	J	420	U	380	U	450		1600	

Volatiles Scan

		GS17SS		GS18SS		GS19SS		GS20SS		GS20SD		GS21SS		GS22SS		GS23SS		GS24SS	
% Moisture	%	21		23		17		21		20		22		13		26		45	
1,1,1-Trichloroethane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
1,1,2,2-Tetrachloroethane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
1,1,2-Trichloroethane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
1,1-Dichloroethane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
1,1-Dichloroethene (1,1-Dichloroethylene)	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
1,2,3-Trichlorobenzene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA		NA
1,2,4-Trichlorobenzene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
1,2-Dibromo-3-Chloropropane (DBCP)	UG/KG	13	UJ	13	UJ	11	UJ	12	U	11	UJ	12	UJ	11	U	13	U	25	U
1,2-Dibromoethane (EDB)	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
1,2-Dichlorobenzene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
1,2-Dichloroethane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
1,2-Dichloropropane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
1,3-Dichlorobenzene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
1,4-Dichlorobenzene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Acetone	UG/KG	260	J	130	J	180	J	83	J	230	J	270	J	110	J	130	J	220	J
Benzene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Bromochloromethane	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA		NA
Bromodichloromethane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Bromoform	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Bromomethane	UG/KG	13	UJ	13	UJ	11	UJ	12	UJ	11	UJ	12	UJ	11	U	13	UJ	25	U
Carbon Disulfide	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Carbon Tetrachloride	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Chlorobenzene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Chloroethane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Chloroform	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Chloromethane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
cis-1,2-Dichloroethene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
cis-1,3-Dichloropropene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Cyclohexane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Dibromochloromethane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Dichlorodifluoromethane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Ethyl Benzene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Isopropylbenzene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Methyl Acetate	UG/KG	13	U	13	U	3	J	12	U	11	U	12	U	11	U	13	U	25	U
Methyl Butyl Ketone	UG/KG	13	UJ	13	UJ	11	UJ	12	U	11	UJ	12	UJ	11	UJ	13	U	25	UJ
Methyl Ethyl Ketone	UG/KG	28	J	14	J	17	J	12	U	23	J	31	J	11	UJ	14		25	UJ
Methyl Isobutyl Ketone	UG/KG	13	UJ	13	UJ	11	UJ	12	U	11	UJ	12	UJ	11	UJ	13	U	25	UJ
Methyl T-Butyl Ether (MTBE)	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Methylcyclohexane	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Methylene Chloride	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Styrene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Tetrachloroethene (Tetrachloroethylene)	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Toluene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Total Xylenes	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
trans-1,2-Dichloroethene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
trans-1,3-Dichloropropene	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Trichloroethene (Trichloroethylene)	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Trichlorofluoromethane (Freon 11)	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U
Vinyl Chloride	UG/KG	13	U	13	U	11	U	12	U	11	U	12	U	11	U	13	U	25	U

Data Qualifiers

U-Analyte not detected at or above reporting limit.
J-identification of analyte is acceptable; reported value is an estimate.
UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification.
NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to interferences. | A-Analyte analyzed in replicate. Reported value is 'average' of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Table 7. Subsurface Soil Analytical Results.
Page 1 of 10

Metals Scan

		GS01SB		GS02SB		GS03SB		GS04SB		GS05SB		GS06SB		GS07SB		GS08SB	
% Moisture	%	18		19		28		27		23		27		26		18	
Aluminum	MG/KG	7300	J	7800	J	8600	J	6600	J	5300	J	7700	J	9400	J	8100	J
Antimony	MG/KG	0.59	UJ	0.59	UJ	0.67	U	0.66	U	0.62	U	0.65	U	0.65	U	0.58	U
Arsenic	MG/KG	6.7		3.4	J	9.4		1.9		0.91	U	2.7		2.7		3.5	
Barium	MG/KG	62		34		63		57		59		48		50		45	
Beryllium	MG/KG	0.31		0.36		0.64		0.41		0.27		0.24		0.35		0.59	
Cadmium	MG/KG	0.05	U	0.05	U	0.06	U	0.06	U	0.05	U	0.05	U	0.05	U	0.05	U
Calcium	MG/KG	850		170		1400		670		580		990		670		450	
Chromium	MG/KG	12		9.5		14		6.6		4.9		7.5		8		9.2	
Cobalt	MG/KG	3.3		2.6		4.3		1.4		0.78	R	1.2		1.6		9.4	
Copper	MG/KG	6.4		3.8	UJ	6	U	4	U	2.1	U	3.4	U	5.7	U	3.9	U
Cyanide	MG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Iron	MG/KG	13000		13000		22000	J	7500	J	2300	J	5800	J	8200	J	12000	J
Lead	MG/KG	8.2	J	6.6		15		9.2		6.7		11		11		5.7	
Magnesium	MG/KG	580	J	480	J	770		370		220		580		550		370	
Manganese	MG/KG	180		200		200		60		16		18		19		1000	
Nickel	MG/KG	5.2	U	4.1	U	5.1	U	3	U	1.7	U	2.7	U	3.7	U	5.3	U
Potassium	MG/KG	320	J	320	J	360		190		170		240		260		350	
Selenium	MG/KG	0.7		1.4		1.6		0.66	U	0.62	U	0.96	U	0.65	U	0.58	U
Silver	MG/KG	0.38		0.38	R	0.49	R	0.19	U	0.18	U	0.28	R	0.19	U	0.32	
Sodium	MG/KG	290		290		98	J	300		190	J	250		220		46	
Thallium	MG/KG	0.76	U	0.77	U	0.87	U	0.85	U	0.81	U	0.84	U	0.84	U	0.75	U
Total Mercury	MG/KG	0.06	U	0.06	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.06	U
Vanadium	MG/KG	22		20		33		14		6.7		17		18		22	
Zinc	MG/KG	18		20		23		15		7.3		12		15		25	

Pesticides & Aroclors Scan

		GS01SB		GS02SB		GS03SB		GS04SB		GS05SB		GS06SB		GS07SB		GS08SB	
% Moisture	%	18		19		28		23		19		26		26		17	
4,4'-DDD (p,p'-DDD)	UG/KG	4	U	4.1	U	4.6	U	4.3	U	4.1	U	4.5	U	4.5	U	4	U
4,4'-DDE (p,p'-DDE)	UG/KG	4	U	4.1	U	4.6	U	4.3	U	4.1	U	4.5	U	4.5	U	4	U
4,4'-DDT (p,p'-DDT)	UG/KG	4	U	4.1	U	4.6	U	4.3	U	4.1	U	4.5	U	4.5	U	4	U
Aldrin	UG/KG	2.1	U	2.1	U	2.4	U	2.2	U	2.1	U	2.3	U	2.3	U	2	U
alpha-BHC	UG/KG	2.1	U	2.1	U	2.4	U	2.2	U	2.1	U	2.3	U	2.3	U	2	U
alpha-Chlordane /2	UG/KG	2.1	U	2.1	U	2.4	U	2.2	U	2.1	U	2.3	U	2.3	U	2	U
beta-BHC	UG/KG	2.1	U	2.1	U	2.4	U	2.2	U	2.1	U	2.3	U	2.3	U	2	U
delta-BHC	UG/KG	2.1	U	2.1	U	2.4	U	2.2	U	2.1	U	2.3	U	2.3	U	2	U
Dieldrin	UG/KG	4	U	4.1	U	4.6	U	4.3	U	4.1	U	4.5	U	4.5	U	4	U
Endosulfan I (alpha)	UG/KG	2.1	U	2.1	U	2.4	U	2.2	U	2.1	U	2.3	U	2.3	U	2	U
Endosulfan II (beta)	UG/KG	4	U	4.1	U	4.6	U	4.3	U	4.1	U	4.5	U	4.5	U	4	U
Endosulfan Sulfate	UG/KG	4	U	4.1	U	4.6	U	4.3	U	4.1	U	4.5	U	4.5	U	4	U
Endrin	UG/KG	4	U	4.1	U	4.6	U	4.3	U	4.1	U	4.5	U	4.5	U	4	U
Endrin Aldehyde	UG/KG	4	U	4.1	U	4.6	U	4.3	U	4.1	U	4.5	U	4.5	U	4	U
Endrin Ketone	UG/KG	4	U	4.1	U	4.6	U	4.3	U	4.1	U	4.5	U	4.5	U	4	U
gamma-BHC (Lindane)	UG/KG	2.1	U	2.1	U	2.4	U	2.2	U	2.1	U	2.3	U	2.3	U	2	U
gamma-Chlordane /2	UG/KG	2.1	U	2.1	U	2.4	U	2.2	U	2.1	U	2.3	U	2.3	U	2	U
Heptachlor	UG/KG	2.1	U	2.1	U	2.4	U	2.2	U	2.1	U	2.3	U	2.3	U	2	U
Heptachlor Epoxide	UG/KG	2.1	U	2.1	U	2.4	U	2.2	U	2.1	U	2.3	U	2.3	U	2	U
Methoxychlor	UG/KG	21	U	21	U	24	U	22	U	21	U	23	U	23	U	20	U
PCB-1016 (Aroclor 1016)	UG/KG	40	U	41	U	46	U	43	U	41	U	45	U	45	U	40	U
PCB-1221 (Aroclor 1221)	UG/KG	82	U	83	U	93	U	87	U	83	U	91	U	91	U	81	U
PCB-1232 (Aroclor 1232)	UG/KG	40	U	41	U	46	U	43	U	41	U	45	U	45	U	40	U
PCB-1242 (Aroclor 1242)	UG/KG	40	U	41	U	46	U	43	U	41	U	45	U	45	U	40	U
PCB-1248 (Aroclor 1248)	UG/KG	40	U	41	U	46	U	43	U	41	U	45	U	45	U	40	U
PCB-1254 (Aroclor 1254)	UG/KG	40	U	41	U	46	U	43	U	41	U	45	U	45	U	40	U
PCB-1260 (Aroclor 1260)	UG/KG	40	U	41	U	46	U	43	U	41	U	45	U	45	U	40	U
Toxaphene	UG/KG	210	U	210	U	240	U	220	U	210	U	230	U	230	U	200	U

Extractables Scan

		GS01SB		GS02SB		GS03SB		GS04SB		GS05SB		GS06SB		GS07SB		GS08SB	
% Moisture	%	18		19		28		23		19		26		26		17	
(3-and/or 4-)Methylphenol	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
1,1-Biphenyl	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
1,2,4,5-Tetrachlorobenzene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
2,4,5-Trichlorophenol	UG/KG	1000	U	1000	U	1200	U	1100	U	1000	U	1100	U	1100	U	1000	U
2,4,6-Trichlorophenol	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
2,4-Dichlorophenol	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
2,4-Dimethylphenol	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
2,4-Dinitrophenol	UG/KG	1000	U	1000	UR	1200	U	1100	U	1000	U	1100	UJ	1100	UJ	1000	UJ
2,4-Dinitrotoluene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
2,6-Dinitrotoluene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
2-Chloronaphthalene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
2-Chlorophenol	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
2-Methyl-4,6-Dinitrophenol	UG/KG	1000	U	1000	U	1200	U	1100	U	1000	U	1100	UJ	1100	UJ	1000	UJ
2-Methylnaphthalene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
2-Methylphenol	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
2-Nitroaniline	UG/KG	1000	U	1000	U	1200	U	1100	U	1000	U	1100	U	1100	U	1000	U
2-Nitrophenol	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
3,3'-Dichlorobenzidine	UG/KG	400	UJ	410	U	460	U	430	U	410	U	450	U	450	U	400	U
3-Nitroaniline	UG/KG	1000	U	1000	U	1200	U	1100	U	1000	U	1100	U	1100	U	1000	U
4-Bromophenyl Phenyl Ether	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
4-Chloro-3-Methylphenol	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
4-Chloroaniline	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
4-Chlorophenyl Phenyl Ether	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
4-Nitroaniline	UG/KG	1000	U	1000	UJ	1200	U	1100	U	1000	U	1100	U	1100	U	1000	U
4-Nitrophenol	UG/KG	1000	U	1000	UJ	1200	U	1100	U	1000	U	1100	U	1100	U	1000	U
Acenaphthene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Acenaphthylene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Acetophenone	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Anthracene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	74	J
Atrazine	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Benzaldehyde	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Benzo(a)Anthracene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	120	J
Benzo(b)Fluoranthene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	47	J	1000	J
Benzo(ghi)Perylene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	320	J
Benzo(k)Fluoranthene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	45	J	980	J
Benzo-a-Pyrene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	240	J
Benzyl Butyl Phthalate	UG/KG	400	UJ	410	U	460	UJ	430	UJ	410	UJ	450	U	450	U	400	U
bis(2-Chloroethoxy)Methane	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
bis(2-Chloroethyl) Ether	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
bis(2-Chloroisopropyl) Ether	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
bis(2-Ethylhexyl) Phthalate	UG/KG	400	U	410	U	460	UJ	430	UJ	450	J	450	U	450	U	400	U
Caprolactam	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Carbazole	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Chrysene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	220	J
Dibenzo(a,h)Anthracene	UG/KG	400	U	410	UJ	460	U	430	U	410	U	450	U	450	U	150	J
Dibenzofuran	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Diethyl Phthalate	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Dimethyl Phthalate	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Di-n-Butylphthalate	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Di-n-Octylphthalate	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Fluoranthene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	200	J
Fluorene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Hexachlorobenzene (HCB)	UG/KG	400	U	410	UJ	460	U	430	U	410	U	450	U	450	U	400	U
Hexachlorobutadiene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Hexachlorocyclopentadiene (HCCP)	UG/KG	400	U	410	UJ	460	U	430	U	410	U	450	U	450	U	400	U
Hexachloroethane	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Indeno (1,2,3-cd) Pyrene	UG/KG	400	U	410	UJ	460	U	430	U	410	U	450	U	450	U	420	
Isophorone	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Naphthalene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Nitrobenzene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U

Extractables Scan

		GS01SB		GS02SB		GS03SB		GS04SB		GS05SB		GS06SB		GS07SB		GS08SB	
n-Nitrosodi-n-Propylamine	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
n-Nitrosodiphenylamine/Diphenylamine	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Pentachlorophenol	UG/KG	1000	U	1000	UJ	1200	U	1100	U	1000	U	1100	U	1100	U	1000	U
Phenanthrene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Phenol	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	400	U
Pyrene	UG/KG	400	U	410	U	460	U	430	U	410	U	450	U	450	U	230	J

Volatiles Scan

		GS01SB		GS02SB		GS03SB		GS04SB		GS05SB		GS06SB		GS07SB		GS08SB	
% Moisture	%	18		19		28		23		19		26		26		17	
1,1,1-Trichloroethane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
1,1,2,2-Tetrachloroethane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
1,1,2-Trichloroethane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
1,1-Dichloroethane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
1,1-Dichloroethene (1,1-Dichloroethylene)	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
1,2,3-Trichlorobenzene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
1,2,4-Trichlorobenzene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
1,2-Dibromo-3-Chloropropane (DBCP)	UG/KG	11	UJ	11	U	23	UJ	15	UJ	12	UJ	13	U	13	UJ	10	UJ
1,2-Dibromoethane (EDB)	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
1,2-Dichlorobenzene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
1,2-Dichloroethane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
1,2-Dichloropropane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
1,3-Dichlorobenzene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
1,4-Dichlorobenzene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Acetone	UG/KG	39	UJ	12	J	35	J	15	UJ	12	UJ	21	J	13	UJ	99	J
Benzene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Bromochloromethane	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Bromodichloromethane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Bromoform	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Bromomethane	UG/KG	11	UJ	11	UJ	23	UJ	15	UJ	12	UJ	13	U	13	UJ	10	UJ
Carbon Disulfide	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Carbon Tetrachloride	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Chlorobenzene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Chloroethane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Chloroform	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U

Volatiles Scan

		GS01SB		GS02SB		GS03SB		GS04SB		GS05SB		GS06SB		GS07SB		GS08SB	
Chloromethane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
cis-1,2-Dichloroethene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
cis-1,3-Dichloropropene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Cyclohexane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Dibromochloromethane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Dichlorodifluoromethane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Ethyl Benzene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Isopropylbenzene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Methyl Acetate	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Methyl Butyl Ketone	UG/KG	11	UJ	11	U	23	UJ	15	UJ	12	UJ	13	UJ	13	UJ	10	UJ
Methyl Ethyl Ketone	UG/KG	11	UJ	11	U	23	UJ	15	UJ	12	UJ	13	UJ	13	UJ	11	J
Methyl Isobutyl Ketone	UG/KG	11	UJ	11	U	23	UJ	15	UJ	12	UJ	13	UJ	13	UJ	10	UJ
Methyl T-Butyl Ether (MTBE)	UG/KG	11	U	11	U	23	UJ	15	UJ	12	UJ	13	U	13	UJ	10	UJ
Methylcyclohexane	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Methylene Chloride	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Styrene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Tetrachloroethene (Tetrachloroethylene)	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Toluene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Total Xylenes	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
trans-1,2-Dichloroethene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
trans-1,3-Dichloropropene	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Trichloroethene (Trichloroethylene)	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Trichlorofluoromethane (Freon 11)	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U
Vinyl Chloride	UG/KG	11	U	11	U	23	U	15	U	12	U	13	U	13	U	10	U

Table 7. Subsurface Soil Analytical Results.
Page 4 of 10

Metals Scan

		GS09SB		GS10SB		GS11SB		GS12SB		GS13SB		GS14SB		GS15SB		GS16SB	
% Moisture	%	20		18		18		17		15		15		21		23	
Aluminum	MG/KG	5800	J	8600	J	9600	J	3700	J	8400	J	4600	J	11000	J	12000	J
Antimony	MG/KG	0.6	UJ	0.96	R	1.6	R	0.58	U	0.58	R	0.56	UJ	0.61	UJ	0.62	UJ
Arsenic	MG/KG	0.88	U	13		6.6		4.6		4.7		7.4		8.1		7.3	
Barium	MG/KG	29		430		41		19		23		54		45		49	
Beryllium	MG/KG	0.35		1.3		0.49		0.3		0.34		0.48		0.59		0.49	
Cadmium	MG/KG	0.05	U	0.87		0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Calcium	MG/KG	540		9400		320		160		400		620		710		390	
Chromium	MG/KG	5.3		19		17		8.5		11		7.1		21		17	
Cobalt	MG/KG	1	R	12		3.2	R	1.4		1.7		12		2.9		2.1	
Copper	MG/KG	1.7	UJ	40	J	5.5	UJ	1.8	U	5.5	UJ	1.5	UJ	7	J	7.7	
Cyanide	MG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Iron	MG/KG	3800		20000		20000		13000	J	14000		14000		24000		23000	
Lead	MG/KG	8.4		71		6.7		6.7		5.1		27		9.2		8.7	J
Magnesium	MG/KG	290	J	2400	J	680	J	170		470	J	250	J	640	J	650	J
Manganese	MG/KG	9.3		1800		120		55		82		1000		410		52	
Nickel	MG/KG	2.6	U	20		5	U	1.4	U	4.3	U	3.3	U	5.8	U	4.2	U
Potassium	MG/KG	190	J	970	J	430	J	170		410	J	180	J	490	J	470	J
Selenium	MG/KG	0.6	U	1.2		1.1	R	1.4		0.57	U	0.56	U	2.3	J	1.7	J
Silver	MG/KG	0.18	U	0.76		1.1	R	0.47		0.39		0.42		0.65		0.45	
Sodium	MG/KG	440		490		350		96		310		260		290		290	
Thallium	MG/KG	0.78	U	0.76	U	0.75	U	0.75	U	0.73	U	0.73	U	0.79	U	0.8	U
Total Mercury	MG/KG	0.06	U	0.1	U	0.1	U	0.06	U	0.06	U	0.06	U	0.06	U	0.07	U
Vanadium	MG/KG	8.4		30		33		26		22		23		36		33	
Zinc	MG/KG	12		290		44		8.4		20		20		36		25	

Pesticides & Arociors Scan

		GS09SB		GS10SB		GS11SB		GS12SB		GS13SB		GS14SB		GS15SB		GS16SB	
% Moisture	%	21		17		17		26		15		15		21		22	
4,4'-DDD (p,p'-DDD)	UG/KG	4.2	U	8.7	U	4	U	4.5	U	3.9	U	3.9	U	4.2	U	4.2	U
4,4'-DDE (p,p'-DDE)	UG/KG	4.2	U	4	U	4	U	4.5	U	6.9		3.9	U	4.2	U	4.2	U
4,4'-DDT (p,p'-DDT)	UG/KG	4.2	U	110	N	4	U	4.5	U	3.9	U	16	J	4.2	U	4.2	U
Aldrin	UG/KG	2.2	U	2	U	2	U	2.3	U	2	U	2	U	2.2	U	2.2	U
alpha-BHC	UG/KG	2.2	U	2	U	2	U	2.3	U	2	U	2	U	2.2	U	2.2	U
alpha-Chlordane /2	UG/KG	2.2	U	2	U	2	U	2.3	U	2	U	2	U	2.2	U	2.2	U
beta-BHC	UG/KG	2.2	U	19	U	2	U	2.3	U	2	U	2	U	2.2	U	2.2	U
delta-BHC	UG/KG	2.2	U	2	U	2	U	2.3	U	2	U	2	U	2.2	U	2.2	U
Dieldrin	UG/KG	4.2	U	4	U	4	U	4.5	U	3.9	U	3.9	U	4.2	U	4.2	U
Endosulfan I (alpha)	UG/KG	2.2	U	2	U	2	U	2.3	U	2	U	2	U	2.2	U	2.2	U
Endosulfan II (beta)	UG/KG	4.2	U	4	U	4	U	4.5	U	3.9	U	3.9	U	4.2	U	4.2	U
Endosulfan Sulfate	UG/KG	4.2	U	4	U	4	U	4.5	U	3.9	U	3.9	U	4.2	U	4.2	U
Endrin	UG/KG	4.2	U	37	U	4	U	4.5	U	3.9	U	3.9	U	4.2	U	4.2	U
Endrin Aldehyde	UG/KG	4.2	U	15	U	4	U	4.5	U	3.9	U	3.9	U	4.2	U	4.2	U
Endrin Ketone	UG/KG	4.2	U	180	N	4	U	4.5	U	3.9	U	3.9	U	4.2	U	4.2	U
gamma-BHC (Lindane)	UG/KG	2.2	U	2	U	2	U	2.3	U	2	U	2	U	2.2	U	1.3	J
gamma-Chlordane /2	UG/KG	2.2	U	2	U	2	U	2.3	U	2	U	2	U	2.2	U	2.2	U
Heptachlor	UG/KG	2.2	U	2	U	2	U	2.3	U	2	U	2	U	2.2	U	2.2	U
Heptachlor Epoxide	UG/KG	2.2	U	2	U	2	U	2.3	U	2	U	2	U	2.2	U	2.2	U
Methoxychlor	UG/KG	22	U	360	U	20	U	23	U	20	U	43	U	22	U	22	U
PCB-1016 (Aroclor 1016)	UG/KG	42	U	40	U	40	U	45	U	39	U	39	U	42	U	42	U
PCB-1221 (Aroclor 1221)	UG/KG	85	U	81	U	81	U	91	U	79	U	79	U	85	U	86	U
PCB-1232 (Aroclor 1232)	UG/KG	42	U	40	U	40	U	45	U	39	U	39	U	42	U	42	U
PCB-1242 (Aroclor 1242)	UG/KG	42	U	40	U	40	U	45	U	39	U	39	U	42	U	42	U
PCB-1248 (Aroclor 1248)	UG/KG	42	U	40	U	40	U	45	U	39	U	39	U	42	U	42	U
PCB-1254 (Aroclor 1254)	UG/KG	42	U	40	U	40	U	45	U	39	U	39	U	42	U	42	U
PCB-1260 (Aroclor 1260)	UG/KG	42	U	40	U	40	U	45	U	39	U	39	U	42	U	70	
Toxaphene	UG/KG	220	U	200	U	200	U	230	U	200	U	200	U	220	U	220	U

Extractables Scan

		GS09SB		GS10SB		GS11SB		GS12SB		GS13SB		GS14SB		GS15SB		GS16SB	
% Moisture	%	21		17		17		26		15		15		21		22	
(3-and/or 4-)Methylphenol	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
1,1-Biphenyl	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
1,2,4,5-Tetrachlorobenzene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
2,4,5-Trichlorophenol	UG/KG	1100	U	2000	U	1000	U	1100	U	980	U	980	U	1100	U	1100	U
2,4,6-Trichlorophenol	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
2,4-Dichlorophenol	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
2,4-Dimethylphenol	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
2,4-Dinitrophenol	UG/KG	1100	UJ	2000	UJ	1000	UJ	1100	UJ	980	U	980	UJ	1100	UR	1100	U
2,4-Dinitrotoluene	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
2,6-Dinitrotoluene	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
2-Chloronaphthalene	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
2-Chlorophenol	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
2-Methyl-4,6-Dinitrophenol	UG/KG	1100	U	2000	U	1000	U	1100	UJ	980	U	980	U	1100	U	1100	U
2-Methylnaphthalene	UG/KG	420	U	200	J	400	U	450	U	390	U	390	U	420	U	420	U
2-Methylphenol	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
2-Nitroaniline	UG/KG	1100	U	2000	U	1000	U	1100	U	980	U	980	U	1100	U	1100	U
2-Nitrophenol	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
3,3'-Dichlorobenzidine	UG/KG	420	U	800	U	400	U	450	U	390	UJ	390	U	420	U	420	UJ
3-Nitroaniline	UG/KG	1100	U	2000	U	1000	U	1100	U	980	U	980	U	1100	U	1100	U
4-Bromophenyl Phenyl Ether	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
4-Chloro-3-Methylphenol	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
4-Chloroaniline	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
4-Chlorophenyl Phenyl Ether	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
4-Nitroaniline	UG/KG	1100	U	2000	U	1000	U	1100	U	980	U	980	U	1100	UJ	1100	U
4-Nitrophenol	UG/KG	1100	U	2000	U	1000	U	1100	U	980	U	980	U	1100	UJ	1100	U
Acenaphthene	UG/KG	420	U	210	J	400	U	450	U	390	U	390	U	420	U	420	U
Acenaphthylene	UG/KG	420	U	6100		400	U	450	U	390	U	330	J	420	U	420	U
Acetophenone	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Anthracene	UG/KG	420	U	12000		49	J	450	U	390	U	690		420	U	420	U
Atrazine	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Benzaldehyde	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Benzo(a)Anthracene	UG/KG	420	U	23000		400	U	450	U	56	J	1400		420	U	420	U
Benzo(b)Fluoranthene	UG/KG	420	U	37000		400	U	450	U	160	J	2400		420	U	420	U
Benzo(ghi)Perylene	UG/KG	420	U	5200		400	U	450	U	390	U	540		420	U	420	U
Benzo(k)Fluoranthene	UG/KG	420	U	26000		46	J	450	U	170	J	2000		420	U	420	U
Benzo-a-Pyrene	UG/KG	420	U	25000		400	U	450	U	390	U	1400		420	U	420	U
Benzyl Butyl Phthalate	UG/KG	420	U	800	U	400	U	450	U	390	UJ	390	U	420	U	420	UJ
bis(2-Chloroethoxy)Methane	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
bis(2-Chloroethyl) Ether	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
bis(2-Chloroisopropyl) Ether	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
bis(2-Ethylhexyl) Phthalate	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Caprolactam	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Carbazole	UG/KG	420	U	1800		400	U	450	U	390	U	210	J	420	U	420	U
Chrysene	UG/KG	420	U	35000		400	U	450	U	91	J	2100		420	U	420	U
Dibenzo(a,h)Anthracene	UG/KG	420	U	3300		400	U	450	U	390	U	390		420	UJ	420	U
Dibenzofuran	UG/KG	420	U	340	J	400	U	450	U	390	U	390	U	420	U	420	U
Diethyl Phthalate	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Dimethyl Phthalate	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Di-n-Butylphthalate	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Di-n-Octylphthalate	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Fluoranthene	UG/KG	420	U	28000		400	U	450	U	130	J	2200		420	U	420	U
Fluorene	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Hexachlorobenzene (HCB)	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	UJ	420	U
Hexachlorobutadiene	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Hexachlorocyclopentadiene (HCCP)	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	UJ	420	U
Hexachloroethane	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Indeno (1,2,3-cd) Pyrene	UG/KG	420	U	20000		400	U	450	U	51	J	1100		420	UJ	420	U
Isophorone	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Naphthalene	UG/KG	420	U	390	J	400	U	450	U	390	U	390	U	420	U	420	U
Nitrobenzene	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U

Extractables Scan

		GS09SB		GS10SB		GS11SB		GS12SB		GS13SB		GS14SB		GS15SB		GS16SB	
n-Nitrosodi-n-Propylamine	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
n-Nitrosodiphenylamine/Diphenylamine	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Pentachlorophenol	UG/KG	1100	U	680	J	1000	U	1100	U	980	U	980	U	1100	UJ	1100	U
Phenanthrene	UG/KG	420	U	2700		400	U	450	U	390	U	510		420	U	420	U
Phenol	UG/KG	420	U	800	U	400	U	450	U	390	U	390	U	420	U	420	U
Pyrene	UG/KG	420	U	37000		400	U	450	U	89	J	2400		420	U	420	U

Volatiles Scan

		GS09SB		GS10SB		GS11SB		GS12SB		GS13SB		GS14SB		GS15SB		GS16SB	
% Moisture	%	21		17		17		26		15		15		21		22	
1,1,1-Trichloroethane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
1,1,2,2-Tetrachloroethane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
1,1,2-Trichloroethane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
1,1-Dichloroethane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
1,1-Dichloroethene (1,1-Dichloroethylene)	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
1,2,3-Trichlorobenzene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
1,2,4-Trichlorobenzene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
1,2-Dibromo-3-Chloropropane (DBCP)	UG/KG	11	U	13	U	11	U	11	UJ	10	UJ	10	U	11	U	11	UJ
1,2-Dibromoethane (EDB)	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
1,2-Dichlorobenzene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
1,2-Dichloroethane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
1,2-Dichloropropane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
1,3-Dichlorobenzene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
1,4-Dichlorobenzene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Acetone	UG/KG	11	UJ	78	J	24	J	11	UJ	21	UJ	55	J	67	J	11	UJ
Benzene	UG/KG	11	U	2	J	11	U	11	U	10	U	10	U	11	U	11	U
Bromochloromethane	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Bromodichloromethane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Bromoform	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Bromomethane	UG/KG	11	U	13	UJ	11	U	11	UJ	10	UJ	10	UJ	11	UJ	11	UJ
Carbon Disulfide	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Carbon Tetrachloride	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Chlorobenzene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Chloroethane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Chloroform	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U

Volatiles Scan

		GS09SB		GS10SB		GS11SB		GS12SB		GS13SB		GS14SB		GS15SB		GS16SB	
Chloromethane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
cis-1,2-Dichloroethene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
cis-1,3-Dichloropropene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Cyclohexane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Dibromochloromethane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Dichlorodifluoromethane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Ethyl Benzene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Isopropylbenzene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Methyl Acetate	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Methyl Butyl Ketone	UG/KG	11	UJ	13	U	11	UJ	11	UJ	10	UJ	10	U	11	U	11	UJ
Methyl Ethyl Ketone	UG/KG	11	UJ	13	U	11	UJ	11	UJ	10	UJ	10	U	11	U	11	UJ
Methyl Isobutyl Ketone	UG/KG	11	UJ	13	U	11	UJ	11	UJ	10	UJ	10	U	11	U	11	UJ
Methyl T-Butyl Ether (MTBE)	UG/KG	11	U	13	U	11	U	11	UJ	10	U	10	U	11	U	11	U
Methylcyclohexane	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Methylene Chloride	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Styrene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Tetrachloroethene (Tetrachloroethylene)	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Toluene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Total Xylenes	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
trans-1,2-Dichloroethene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
trans-1,3-Dichloropropene	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Trichloroethene (Trichloroethylene)	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Trichlorofluoromethane (Freon 11)	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U
Vinyl Chloride	UG/KG	11	U	13	U	11	U	11	U	10	U	10	U	11	U	11	U

Table 7. Subsurface Soil Analytical Results.
Page 7 of 10

Metals Scan

		GS17SB		GS18SB		GS19SB		GS20SB		GS21SB	
% Moisture	%	21		18		20		16		20	
Aluminum	MG/KG	6700	J	7700	J	12000	J	4700	J	8600	J
Antimony	MG/KG	1.1	UJ	0.59	UJ	0.79	UJ	0.57	UJ	0.6	UJ
Arsenic	MG/KG	1.5		4.1		8.3		2.3		4.5	
Barium	MG/KG	61		26		43		24		28	
Beryllium	MG/KG	0.39		0.31		0.46		0.3		0.3	
Cadmium	MG/KG	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Calcium	MG/KG	620		190		190		120		140	
Chromium	MG/KG	7		8.7		12		4.7		14	
Cobalt	MG/KG	1.5		3.4		9.6		2.2		1.9	
Copper	MG/KG	2.4	U	3.9	U	6.3	U	2.3	U	3.6	
Cyanide	MG/KG		NA		NA		NA		NA		NA
Iron	MG/KG	5900		12000		20000		6900		13000	
Lead	MG/KG	9.1	J	8	J	12	J	6	J	6.8	J
Magnesium	MG/KG	310	J	470	J	680	J	210	J	420	J
Manganese	MG/KG	57		76		600		140		95	
Nickel	MG/KG	2.5	U	3.4	U	5.4	U	1.7	U	3.6	U
Potassium	MG/KG	280	J	220	J	480	J	170	J	300	J
Selenium	MG/KG	0.6	U	0.59	U	1.7	J	0.57	U	0.95	R
Silver	MG/KG	0.32	R	0.32	R	0.53		0.25	R	0.4	
Sodium	MG/KG	340		540		280		340		310	
Thallium	MG/KG	0.78	U	0.76	U	0.78	U	0.74	U	0.78	U
Total Mercury	MG/KG	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U
Vanadium	MG/KG	13		18		31		14		21	
Zinc	MG/KG	12		16		30		11		16	

Pesticides & Aroclors Scan

		GS17SB		GS18SB		GS19SB		GS20SB		GS21SB	
% Moisture	%	22		25		21		18		20	
4,4'-DDD (p,p'-DDD)	UG/KG	4.2	U	4.4	U	4.2	U	4	U	4.1	U
4,4'-DDE (p,p'-DDE)	UG/KG	4.2	U	4.4	U	4.2	U	4	U	4.1	U
4,4'-DDT (p,p'-DDT)	UG/KG	4.2	U	4.4	U	4.2	U	4	U	4.1	U
Aldrin	UG/KG	2.2	U	2.3	U	2.2	U	2.1	U	2.1	U
alpha-BHC	UG/KG	2.2	U	2.3	U	2.2	U	2.1	U	2.1	U
alpha-Chlordane /2	UG/KG	2.2	U	2.3	U	2.2	U	2.1	U	2.1	U
beta-BHC	UG/KG	2.2	U	2.3	U	2.2	U	2.1	U	2.1	U
delta-BHC	UG/KG	2.2	U	2.3	U	2.2	U	2.1	U	2.1	U
Dieldrin	UG/KG	4.2	U	4.4	U	4.2	U	4	U	4.1	U
Endosulfan I (alpha)	UG/KG	2.2	U	2.3	U	2.2	U	2.1	U	2.1	U
Endosulfan II (beta)	UG/KG	4.2	U	4.4	U	4.2	U	4	U	4.1	U
Endosulfan Sulfate	UG/KG	4.2	U	4.4	U	4.2	U	4	U	4.1	U
Endrin	UG/KG	4.2	U	4.4	U	4.2	U	4	U	4.1	U
Endrin Aldehyde	UG/KG	4.2	U	4.4	U	4.2	U	4	U	4.1	U
Endrin Ketone	UG/KG	4.2	U	4.4	U	4.2	U	4	U	4.1	U
gamma-BHC (Lindane)	UG/KG	2.2	U	1.7	J	2.2	U	2.1	U	2.1	U
gamma-Chlordane /2	UG/KG	2.2	U	2.3	U	2.2	U	2.1	U	2.1	U
Heptachlor	UG/KG	2.2	U	2.3	U	2.2	U	2.1	U	2.1	U
Heptachlor Epoxide	UG/KG	2.2	U	2.3	U	2.2	U	2.1	U	2.1	U
Methoxychlor	UG/KG	22	U	23	U	22	U	21	U	21	U
PCB-1016 (Aroclor 1016)	UG/KG	42	U	44	U	42	U	40	U	41	U
PCB-1221 (Aroclor 1221)	UG/KG	86	U	89	U	85	U	82	U	84	U
PCB-1232 (Aroclor 1232)	UG/KG	42	U	44	U	42	U	40	U	41	U
PCB-1242 (Aroclor 1242)	UG/KG	42	U	44	U	42	U	40	U	41	U
PCB-1248 (Aroclor 1248)	UG/KG	42	U	44	U	42	U	40	U	41	U
PCB-1254 (Aroclor 1254)	UG/KG	42	U	44	U	42	U	40	U	41	U
PCB-1260 (Aroclor 1260)	UG/KG	42	U	42	J	39	J	40	U	41	U
Toxaphene	UG/KG	220	U	230	U	220	U	210	U	210	U

Extractables Scan

		GS17SB		GS18SB		GS19SB		GS20SB		GS21SB	
% Moisture	%	22		25		21		18		20	
(3-and/or 4-)Methylphenol	UG/KG	420	U	440	U	420	U	400	U	410	U
1,1-Biphenyl	UG/KG	420	U	440	U	420	U	400	U	410	U
1,2,4,5-Tetrachlorobenzene	UG/KG		NA		NA		NA		NA		NA
2,4,5-Trichlorophenol	UG/KG	1100	U	1100	U	1100	U	1000	U	1000	U
2,4,6-Trichlorophenol	UG/KG	420	U	440	U	420	U	400	U	410	U
2,4-Dichlorophenol	UG/KG	420	U	440	U	420	U	400	U	410	U
2,4-Dimethylphenol	UG/KG	420	U	440	U	420	U	400	U	410	U
2,4-Dinitrophenol	UG/KG	1100	U	1100	U	1100	U	1000	U	1000	U
2,4-Dinitrotoluene	UG/KG	420	U	440	U	420	U	400	U	410	U
2,6-Dinitrotoluene	UG/KG	420	U	440	U	420	U	400	U	410	U
2-Chloronaphthalene	UG/KG	420	U	440	U	420	U	400	U	410	U
2-Chlorophenol	UG/KG	420	U	440	U	420	U	400	U	410	U
2-Methyl-4,6-Dinitrophenol	UG/KG	1100	U	1100	U	1100	U	1000	U	1000	U
2-Methylnaphthalene	UG/KG	420	U	440	U	420	U	400	U	410	U
2-Methylphenol	UG/KG	420	U	440	U	420	U	400	U	410	U
2-Nitroaniline	UG/KG	1100	U	1100	U	1100	U	1000	U	1000	U
2-Nitrophenol	UG/KG	420	U	440	U	420	U	400	U	410	U
3,3'-Dichlorobenzidine	UG/KG	420	UJ	440	U	420	U	400	UJ	410	UJ
3-Nitroaniline	UG/KG	1100	U	1100	U	1100	U	1000	U	1000	U
4-Bromophenyl Phenyl Ether	UG/KG	420	U	440	U	420	U	400	U	410	U
4-Chloro-3-Methylphenol	UG/KG	420	U	440	U	420	U	400	U	410	U
4-Chloroaniline	UG/KG	420	U	440	U	420	U	400	U	410	U
4-Chlorophenyl Phenyl Ether	UG/KG	420	U	440	U	420	U	400	U	410	U
4-Nitroaniline	UG/KG	1100	U	1100	U	1100	U	1000	U	1000	U
4-Nitrophenol	UG/KG	1100	U	1100	U	1100	U	1000	U	1000	U
Acenaphthene	UG/KG	420	U	440	U	420	U	400	U	410	U
Acenaphthylene	UG/KG	420	U	440	U	420	U	400	U	410	U
Acetophenone	UG/KG	420	U	440	U	420	U	400	U	410	U
Anthracene	UG/KG	420	U	440	U	420	U	400	U	410	U
Atrazine	UG/KG	420	U	440	U	420	U	400	U	410	U
Benzaldehyde	UG/KG	420	U	440	U	420	U	400	U	410	U
Benzo(a)Anthracene	UG/KG	420	U	440	U	420	U	400	U	410	U
Benzo(b)Fluoranthene	UG/KG	41	J	440	U	420	U	400	U	410	U
Benzo(ghi)Perylene	UG/KG	420	U	440	U	420	U	120	J	410	U
Benzo(k)Fluoranthene	UG/KG	43	J	440	U	420	U	400	U	410	U
Benzo-a-Pyrene	UG/KG	420	U	440	U	420	U	400	U	410	U
Benzyl Butyl Phthalate	UG/KG	420	UJ	440	UJ	420	UJ	400	UJ	410	UJ
bis(2-Chloroethoxy)Methane	UG/KG	420	U	440	U	420	U	400	U	410	U
bis(2-Chloroethyl) Ether	UG/KG	420	U	440	U	420	U	400	U	410	U
bis(2-Chloroisopropyl) Ether	UG/KG	420	U	440	U	420	U	400	U	410	U
bis(2-Ethylhexyl) Phthalate	UG/KG	420	U	440	UJ	420	UJ	400	U	410	U
Caprolactam	UG/KG	420	U	440	U	420	U	400	U	410	U
Carbazole	UG/KG	420	U	440	U	420	U	400	U	410	U
Chrysene	UG/KG	420	U	440	U	420	U	400	U	410	U
Dibenzo(a,h)Anthracene	UG/KG	420	U	440	U	420	U	400	U	410	U
Dibenzofuran	UG/KG	420	U	440	U	420	U	400	U	410	U
Diethyl Phthalate	UG/KG	420	U	440	U	420	U	400	U	410	U
Dimethyl Phthalate	UG/KG	420	U	440	U	420	U	400	U	410	U
Di-n-Butylphthalate	UG/KG	420	U	440	U	420	U	400	U	410	U
Di-n-Octylphthalate	UG/KG	420	U	440	U	420	U	400	U	410	U
Fluoranthene	UG/KG	420	U	440	U	420	U	400	U	410	U
Fluorene	UG/KG	420	U	440	U	420	U	400	U	410	U
Hexachlorobenzene (HCB)	UG/KG	420	U	440	U	420	U	400	U	410	U
Hexachlorobutadiene	UG/KG	420	U	440	U	420	U	400	U	410	U
Hexachlorocyclopentadiene (HCCP)	UG/KG	420	U	440	U	420	U	400	U	410	U
Hexachloroethane	UG/KG	420	U	440	U	420	U	400	U	410	U
Indeno (1,2,3-cd) Pyrene	UG/KG	420	U	440	U	420	U	400	U	410	U
Isophorone	UG/KG	420	U	440	U	420	U	400	U	410	U
Naphthalene	UG/KG	420	U	440	U	420	U	400	U	410	U
Nitrobenzene	UG/KG	420	U	440	U	420	U	400	U	410	U

Extractables Scan

		GS17SB		GS18SB		GS19SB		GS20SB		GS21SB	
n-Nitrosodi-n-Propylamine	UG/KG	420	U	440	U	420	U	400	U	410	U
n-Nitrosodiphenylamine/Diphenylamine	UG/KG	420	U	440	U	420	U	400	U	410	U
Pentachlorophenol	UG/KG	1100	U	1100	U	1100	U	1000	U	1000	U
Phenanthrene	UG/KG	420	U	440	U	420	U	400	U	410	U
Phenol	UG/KG	420	U	440	U	420	U	400	U	410	U
Pyrene	UG/KG	420	U	440	U	420	U	400	U	410	U

Volatiles Scan

		GS17SB		GS18SB		GS19SB		GS20SB		GS21SB	
% Moisture	%	22		25		21		18		20	
1,1,1-Trichloroethane	UG/KG	13	U	11	U	11	U	11	U	11	U
1,1,2,2-Tetrachloroethane	UG/KG	13	U	11	U	11	U	11	U	11	U
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/KG	13	U	11	U	11	U	11	U	11	U
1,1,2-Trichloroethane	UG/KG	13	U	11	U	11	U	11	U	11	U
1,1-Dichloroethane	UG/KG	13	U	11	U	11	U	11	U	11	U
1,1-Dichloroethene (1,1-Dichloroethylene)	UG/KG	13	U	11	U	11	U	11	U	11	U
1,2,3-Trichlorobenzene	UG/KG		NA		NA		NA		NA		NA
1,2,4-Trichlorobenzene	UG/KG	13	U	11	U	11	U	11	U	11	U
1,2-Dibromo-3-Chloropropane (DBCP)	UG/KG	13	U	11	UJ	11	UJ	11	U	11	U
1,2-Dibromoethane (EDB)	UG/KG	13	U	11	U	11	U	11	U	11	U
1,2-Dichlorobenzene	UG/KG	13	U	11	U	11	U	11	U	11	U
1,2-Dichloroethane	UG/KG	13	U	11	U	11	U	11	U	11	U
1,2-Dichloropropane	UG/KG	13	U	11	U	11	U	11	U	11	U
1,3-Dichlorobenzene	UG/KG	13	U	11	U	11	U	11	U	11	U
1,4-Dichlorobenzene	UG/KG	13	U	11	U	11	U	11	U	11	U
Acetone	UG/KG	13	U	14	UJ	26	UJ	11	U	11	UJ
Benzene	UG/KG	13	U	11	U	11	U	11	U	11	U
Bromochloromethane	UG/KG		NA		NA		NA		NA		NA
Bromodichloromethane	UG/KG	13	U	11	U	11	U	11	U	11	U
Bromoform	UG/KG	13	U	11	U	11	U	11	U	11	U
Bromomethane	UG/KG	13	UJ	11	UJ	11	UJ	11	UJ	11	UJ
Carbon Disulfide	UG/KG	13	U	11	U	11	U	11	U	11	U
Carbon Tetrachloride	UG/KG	13	U	11	U	11	U	11	U	11	U
Chlorobenzene	UG/KG	13	U	11	U	11	U	11	U	11	U
Chloroethane	UG/KG	13	U	11	U	11	U	11	U	11	U
Chloroform	UG/KG	13	U	11	U	11	U	11	U	11	U

Volatiles Scan

		GS17SB		GS18SB		GS19SB		GS20SB		GS21SB	
Chloromethane	UG/KG	13	U	11	U	11	U	11	U	11	U
cis-1,2-Dichloroethene	UG/KG	13	U	11	U	11	U	11	U	11	U
cis-1,3-Dichloropropene	UG/KG	13	U	11	U	11	U	11	U	11	U
Cyclohexane	UG/KG	13	U	11	U	11	U	11	U	11	U
Dibromochloromethane	UG/KG	13	U	11	U	11	U	11	U	11	U
Dichlorodifluoromethane	UG/KG	13	U	11	U	11	U	11	U	11	U
Ethyl Benzene	UG/KG	13	U	11	U	11	U	11	U	11	U
Isopropylbenzene	UG/KG	13	U	11	U	11	U	11	U	11	U
Methyl Acetate	UG/KG	13	U	11	U	11	U	11	U	11	U
Methyl Butyl Ketone	UG/KG	13	U	11	UJ	11	UJ	11	U	11	UJ
Methyl Ethyl Ketone	UG/KG	13	U	11	UJ	11	UJ	11	U	11	UJ
Methyl Isobutyl Ketone	UG/KG	13	U	11	UJ	11	UJ	11	U	11	UJ
Methyl T-Butyl Ether (MTBE)	UG/KG	13	U	11	U	11	U	11	U	11	U
Methylcyclohexane	UG/KG	13	U	11	U	11	U	11	U	11	U
Methylene Chloride	UG/KG	13	U	11	U	11	U	11	U	11	U
Styrene	UG/KG	13	U	11	U	11	U	11	U	11	U
Tetrachloroethene (Tetrachloroethylene)	UG/KG	13	U	11	U	11	U	11	U	11	U
Toluene	UG/KG	13	U	11	U	11	U	11	U	11	U
Total Xylenes	UG/KG	13	U	11	U	11	U	11	U	11	U
trans-1,2-Dichloroethene	UG/KG	13	U	11	U	11	U	11	U	11	U
trans-1,3-Dichloropropene	UG/KG	13	U	11	U	11	U	11	U	11	U
Trichloroethene (Trichloroethylene)	UG/KG	13	U	11	U	11	U	11	U	11	U
Trichlorofluoromethane (Freon 11)	UG/KG	13	U	11	U	11	U	11	U	11	U
Vinyl Chloride	UG/KG	13	U	11	U	11	U	11	U	11	U

Data Qualifiers

U-Analyte not detected at or above reporting limit. The number is the minimum quantitation limit.
J-Identification of analyte is acceptable; reported value is an estimate.
UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification.
NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to interferences. | A-Analyte analyzed in replicate. Reported value is 'average' of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Table 8. Sediment Analytical Results.
Page 1 of 5

Metals Scan

		GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
% Moisture	%	61		56		84		77		54		20		22		27	
Aluminum	MG/KG	8200	J	4700	J	16000	J	9100	J	4900	J	450	J	140	J	510	J
Antimony	MG/KG	1.2	UJ	2.4	UJ	4.5	UJ	2.1	UJ	2.1	R	0.7	R	0.61	UJ	0.65	U
Arsenic	MG/KG	5.7		1.8	R	7.9	R	5.5		2.9	R	0.88	U	0.9	U	0.95	U
Barium	MG/KG	89		77		300		120		71		6.8		3.2		15	
Beryllium	MG/KG	0.39		0.56		1.3		1.2		0.51		0.03	U	0.03	U	0.1	
Cadmium	MG/KG	0.1	U	0.09	U	0.25	U	0.18	U	0.09	U	0.05	U	0.05	U	0.06	U
Calcium	MG/KG	1500		880		2000		2000		1200		250		110	U	180	
Chromium	MG/KG	13		7.8		24		15		8.4		1.3	U	0.61	U	1.4	
Cobalt	MG/KG	4.4		4.7		12		11		5.5		0.61	R	0.47		1	
Copper	MG/KG	10	U	6.6	U	25	U	12	UJ	5.8	UJ	0.15	UJ	0.22	UJ	1.2	U
Cyanide	MG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Iron	MG/KG	15000		6400		24000		13000		8400		950		340		2200	J
Lead	MG/KG	12	J	20	J	41	J	21		12		1.8		1.2	J	3.6	
Magnesium	MG/KG	1000	J	410	J	1200	J	1000	J	660	J	64	J	14	UJ	81	
Manganese	MG/KG	340		500		720		280		320		52		53		44	
Nickel	MG/KG	6.6	U	4.6	U	16	U	15	U	6.5	U	0.76	U	0.6	U	1	U
Potassium	MG/KG	700	J	410	J	1100	J	811	J	480	J	90	J	52	J	56	
Selenium	MG/KG	1.9	R	1.1	U	4.2		2.1	U	1	U	0.6	U	0.61	U	0.65	U
Silver	MG/KG	0.68	R	0.45	R	1.1	R	1.1	R	0.71	R	0.24	R	0.18	U	0.19	U
Sodium	MG/KG	690		580		1500		1200		600		330		330		68	
Thallium	MG/KG	1.6	U	1.4	U	3.9	U	2.8	U	1.3	U	0.78	U	0.79	U	0.85	U
Total Mercury	MG/KG	0.13	U	0.11	U	0.31	U	0.22	U	0.11	U	0.06	U	0.06	U	0.07	U
Vanadium	MG/KG	24		13		41		23		13		1.6	R	0.57	R	2.4	
Zinc	MG/KG	36		33		130		84		39		3.6		2.9	U	4.6	

Pesticides & Aroclors Scan

		GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
% Moisture	%	55		52		79		78		54		20		18		19	
4,4'-DDD (p,p'-DDD)	UG/KG	7.3	U	6.9	U	16	U	15	U	7.2	U	4.1	U	4	U	4.1	U
4,4'-DDE (p,p'-DDE)	UG/KG	7.3	U	7.9		16	U	15	U	7.2	U	4.1	U	4	U	4.1	U
4,4'-DDT (p,p'-DDT)	UG/KG	7.3	U	6.9	U	16	U	15	U	7.2	U	4.1	U	4	U	4.1	U
Aldrin	UG/KG	3.8	U	3.5	U	8.1	U	7.7	U	3.7	U	2.1	U	2.1	U	2.1	U
alpha-BHC	UG/KG	3.8	U	3.5	U	8.1	U	7.7	U	3.7	U	2.1	U	2.1	U	2.1	U
alpha-Chlordane /2	UG/KG	3.8	U	3.5	U	8.1	U	7.7	U	3.7	U	2.1	U	2.1	U	2.1	U
beta-BHC	UG/KG	3.8	U	3.5	U	12		7.7	U	3.7	U	2.1	U	2.1	U	2.1	U
delta-BHC	UG/KG	3.8	U	3.5	U	8.1	U	7.7	U	3.7	U	2.1	U	2.1	U	2.1	U
Dieldrin	UG/KG	7.3	U	6.9	U	16	U	15	U	7.2	U	4.1	U	4	U	4.1	U
Endosulfan I (alpha)	UG/KG	3.8	U	3.5	U	8.1	U	7.7	U	3.7	U	2.1	U	2.1	U	2.1	U
Endosulfan II (beta)	UG/KG	7.3	U	6.5	J	16	U	15	U	7.2	U	4.1	U	4	U	4.1	U
Endosulfan Sulfate	UG/KG	7.3	U	10	N	14	NJ	15	U	7.2	U	4.1	U	4	U	4.1	U
Endrin	UG/KG	7.3	U	6.9	U	16	U	15	U	7.2	U	4.1	U	4	U	4.1	U
Endrin Aldehyde	UG/KG	7.3	U	6.9	U	16	U	15	U	7.2	U	4.1	U	4	U	4.1	U
Endrin Ketone	UG/KG	7.3	U	6.9	U	16	U	15	U	7.2	U	4.1	U	4	U	4.1	U
gamma-BHC (Lindane)	UG/KG	3.8	U	3.5	U	8.1	U	7.7	U	3.7	U	2.1	U	2.1	U	2.1	U
gamma-Chlordane /2	UG/KG	3.8	U	3.5	U	8.1	U	7.7	U	3.7	U	2.1	U	2.1	U	2.1	U
Heptachlor	UG/KG	3.8	U	3.5	U	8.1	U	7.7	U	3.7	U	2.1	U	2.1	U	2.1	U
Heptachlor Epoxide	UG/KG	3.8	U	3.5	U	8.1	U	7.7	U	3.7	U	2.1	U	2.1	U	2.1	U
Methoxychlor	UG/KG	38	U	35	U	81	U	77	U	37	U	21	U	21	U	21	U
PCB-1016 (Aroclor 1016)	UG/KG	73	U	69	U	160	U	150	U	72	U	41	U	40	U	41	U
PCB-1221 (Aroclor 1221)	UG/KG	150	U	140	U	320	U	300	U	150	U	84	U	82	U	83	U
PCB-1232 (Aroclor 1232)	UG/KG	73	U	69	U	160	U	150	U	72	U	41	U	40	U	41	U
PCB-1242 (Aroclor 1242)	UG/KG	73	U	69	U	160	U	150	U	72	U	41	U	40	U	41	U
PCB-1248 (Aroclor 1248)	UG/KG	73	U	69	U	160	U	150	U	72	U	41	U	40	U	41	U
PCB-1254 (Aroclor 1254)	UG/KG	73	U	69	U	160	U	150	U	72	U	41	U	40	U	41	U
PCB-1260 (Aroclor 1260)	UG/KG	73	U	69	U	160	U	150	U	72	U	41	U	40	U	41	U
Toxaphene	UG/KG	380	U	350	U	810	U	770	U	370	U	210	U	210	U	210	U

Extractables Scan

		GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
% Moisture	%	55		52		79		78		54		20		18		19	
(3-and/or 4-)Methylphenol	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
1,1-Biphenyl	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
1,2,4,5-Tetrachlorobenzene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
2,4,5-Trichlorophenol	UG/KG	1100	U	1000	U	2400	U	2300	U	1100	U	830	U	830	U	830	U
2,4,6-Trichlorophenol	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
2,4-Dichlorophenol	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
2,4-Dimethylphenol	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
2,4-Dinitrophenol	UG/KG	1100	U	1000	U	2400	U	2300	U	1100	UR	830	UJ	830	UR	830	UJ
2,4-Dinitrotoluene	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
2,6-Dinitrotoluene	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
2-Chloronaphthalene	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
2-Chlorophenol	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
2-Methyl-4,6-Dinitrophenol	UG/KG	1100	U	1000	U	2400	U	2300	U	1100	U	830	U	830	U	830	U
2-Methylnaphthalene	UG/KG	440	U	410	U	930	U	900	U	430	U	330	U	330	U	330	U
2-Methylphenol	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
2-Nitroaniline	UG/KG	1100	U	1000	U	2400	U	2300	U	1100	U	830	U	830	U	830	U
2-Nitrophenol	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
3,3'-Dichlorobenzidine	UG/KG	440	U	410	UJ	940	UJ	900	UJ	430	U	330	U	330	U	330	U
3-Nitroaniline	UG/KG	1100	U	1000	U	2400	U	2300	U	1100	U	830	U	830	U	830	U
4-Bromophenyl Phenyl Ether	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
4-Chloro-3-Methylphenol	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
4-Chloroaniline	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
4-Chlorophenyl Phenyl Ether	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
4-Nitroaniline	UG/KG	1100	U	1000	U	2400	U	2300	U	1100	UJ	830	U	830	UJ	830	U
4-Nitrophenol	UG/KG	1100	U	1000	U	2400	U	2300	U	1100	UJ	830	U	830	UJ	830	U
Acenaphthene	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Acenaphthylene	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Acetophenone	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Anthracene	UG/KG	440	U	410	U	270	J	900	U	430	U	330	U	330	U	330	U
Atrazine	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Benzaldehyde	UG/KG	89	J	410	U	110	J	130	J	430	U	330	U	330	U	330	U
Benzo(a)Anthracene	UG/KG	440	U	410	U	150	J	900	U	430	U	330	U	330	U	330	U
Benzo(b)Fluoranthene	UG/KG	440	U	410	U	540	J	900	U	430	U	330	U	330	U	330	U
Benzo(ghi)Perylene	UG/KG	92	J	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Benzo(k)Fluoranthene	UG/KG	440	U	410	U	560	J	900	U	430	U	330	U	330	U	330	U
Benzo-a-Pyrene	UG/KG	440	U	410	U	150	J	900	U	430	U	330	U	330	U	330	U
Benzyl Butyl Phthalate	UG/KG	440	UJ	410	UJ	940	UJ	900	UJ	430	U	330	U	330	U	330	U
bis(2-Chloroethoxy)Methane	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
bis(2-Chloroethyl) Ether	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
bis(2-Chloroisopropyl) Ether	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
bis(2-Ethylhexyl) Phthalate	UG/KG	440	UJ	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Caprolactam	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Carbazole	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Chrysene	UG/KG	440	U	410	U	250	J	900	U	430	U	330	U	330	U	330	U
Dibenzo(a,h)Anthracene	UG/KG	440	U	410	U	940	U	900	U	430	UJ	330	U	330	UJ	330	U
Dibenzofuran	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Diethyl Phthalate	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Dimethyl Phthalate	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Di-n-Butylphthalate	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Di-n-Octylphthalate	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Fluoranthene	UG/KG	440	U	410	U	340	J	900	U	430	U	330	U	330	U	330	U
Fluorene	UG/KG	440	U	410	U	130	U	900	U	430	U	330	U	330	U	330	U
Hexachlorobenzene (HCB)	UG/KG	440	U	410	U	940	U	900	U	430	UJ	330	U	330	UJ	330	U
Hexachlorobutadiene	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Hexachlorocyclopentadiene (HCCP)	UG/KG	440	U	410	U	940	U	900	U	430	UJ	330	U	330	UJ	330	U
Hexachloroethane	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Indeno (1,2,3-cd) Pyrene	UG/KG	440	U	410	U	180	J	900	U	430	UJ	330	U	330	UJ	330	U
Isophorone	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Naphthalene	UG/KG	440	U	410	U	940	U	3	J	430	U	330	U	330	U	330	U
Nitrobenzene	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
n-Nitrosodi-n-Propylamine	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
n-Nitrosodiphenylamine/Diphenylamine	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U

Extractables Scan

		GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
Pentachlorophenol	UG/KG	1100	U	1000	U	190	U	2300	U	1100	UJ	25	U	830	UJ	830	U
Phenanthrene	UG/KG	440	U	410	U	120	J	900	U	430	U	330	U	330	U	330	U
Phenol	UG/KG	440	U	410	U	940	U	900	U	430	U	330	U	330	U	330	U
Pyrene	UG/KG	440	U	410	U	220	J	120	J	430	U	330	U	330	U	330	U

Miscellaneous Extractables

		GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
.GAMMA.-SITOSTEROL	UG/KG		NR	1400	NJ		NR		NR		NR		NR		NR		NR
17 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
1-DOCOSENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
1-HEXADECENE	UG/KG	540	NJ		NR	1000	NJ		NR		NR		NR		NR		NR
23 UNKNOWN COMPOUNDS	UG/KG	23000	J		NR		NR		NR		NR		NR		NR		NR
24 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR	54000	J		NR		NR		NR		NR
25 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR	140000	J		NR		NR		NR
25 UNKNOWNS	UG/KG		NR		NR	54000	J		NR		NR		NR		NR		NR
28 UNIDENTIFIED COMPOUNDS	UG/KG		NR	92000	J		NR		NR		NR		NR		NR		NR
3 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR	170	J
BENZENE, 1-METHYL-2-ISOPROPYL	UG/KG		NR		NR		NR		NR	1200	NJ		NR		NR		NR
BENZO [E] PYRENE	UG/KG		NR		NR	590	NJ		NR		NR		NR		NR		NR
CHOLESTANOL	UG/KG		NR		NR		NR	1600	NJ		NR		NR		NR		NR
ERGOST-5-EN-3-OL, (3.BETA.)-	UG/KG		NR		NR		NR	1700	NJ		NR		NR		NR		NR
ERGOST-5-N-3-OL, (3.BETA.)-	UG/KG	1500	NJ		NR		NR		NR		NR		NR		NR		NR
HEXADECANOIC ACID	UG/KG	420	NJ		NR		NR		NR		NR		NR		NR		NR
PHENANTHRENONE DERIVATIVE	UG/KG		NR		NR		NR		NR	2500	NJ		NR		NR		NR
STIGMAST-4-EN-3-ONE	UG/KG	730	NJ		NR	1400	NJ	2200	NJ	800	NJ		NR		NR		NR
STIGMASTEROL	UG/KG	1100	NJ		NR		NR		NR		NR		NR		NR		NR
UNKNOWN ALCOHOL	UG/KG		NR		NR		NR	9200	J		NR		NR		NR		NR
UNKNOWN CARBOXYLIC ACID	UG/KG		NR		NR		NR		NR	500	J		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR		NR		NR		NR	61	J	69	J		NR
UNKNOWN KETONE	UG/KG		NR		NR		NR	1800	J		NR		NR		NR		NR

Hi res Extractables

		GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
2-Methylnaphthalene	UG/KG	0.6	J	0.9	J	33		2	J	0.8	J	0.4	J	0.4	J	0.8	U
Acenaphthene	UG/KG	0.5	J	1	J	100		5		0.9	J	0.8	U	0.9	U	0.8	U
Acenaphthylene	UG/KG	3		2		44		9		2	U	0.8	U	0.8	U	0.8	U
Anthracene	UG/KG	3		7		140		34		7		2	U	0.8	U	0.8	U
Benzo(a)Anthracene	UG/KG	1	J	7		110		19		12		5	U	0.8	U	1	U
Benzo(b)Fluoranthene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Benzo(ghi)Perylene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Benzo(k)Fluoranthene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Benzo-a-Pyrene	UG/KG	2		4		120		17		16		4	U	0.8	U	0.8	U
Chrysene	UG/KG	1	J	10		200		36		26		7	U	1	U	2	U
Dibenzo(a,h)Anthracene	UG/KG	1	U	1	J	40		6		4		1		0.8	U	0.8	U
Fluoranthene	UG/KG	2		21		190		50		34		12	U	2	U	2	U
Fluorene	UG/KG	0.5	J	2		82		6		1	J	0.3	J	0.8	U	0.8	U
Indeno (1,2,3-cd) Pyrene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Naphthalene	UG/KG	0.6	J	0.6	J	51		3	J	0.9	J	0.5	J	0.4	J	0.4	J
Pentachlorophenol	UG/KG	24	U	22	U	100	U	49	U	23	U	13	U	13	U	13	U
Phenanthrene	UG/KG	2	J	12		72		11		23	U	4		0.9	U	0	U
Pyrene	UG/KG	2		15		140		33		27		10	U	2	U	2	U

Volatiles Scan

		GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
% Moisture	%	55		52		79		78		54		20		18		19	
1,1,1-Trichloroethane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
1,1,2,2-Tetrachloroethane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
1,1,2-Trichloroethane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
1,1-Dichloroethane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
1,1-Dichloroethene (1,1-Dichloroethylene)	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
1,2,3-Trichlorobenzene	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
1,2,4-Trichlorobenzene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
1,2-Dibromo-3-Chloropropane (DBCP)	UG/KG	37	UJ	34	UJ	75	U	70	UJ	29	U	13	U	12	U	14	U
1,2-Dibromoethane (EDB)	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
1,2-Dichlorobenzene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
1,2-Dichloroethane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
1,2-Dichloropropane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
1,3-Dichlorobenzene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
1,4-Dichlorobenzene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Acetone	UG/KG	94	J	130	J	350	J	520	J	51	J	22	J	49	J	29	J
Benzene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Bromochloromethane	UG/KG		NA		NA		NA		NA		NA		NA		NA		NA
Bromodichloromethane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Bromoform	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Bromomethane	UG/KG	37	UJ	34	UJ	75	UJ	70	UJ	29	UJ	13	U	12	UJ	14	U
Carbon Disulfide	UG/KG	5	J	34	U	51	J	70	U	29	U	13	U	12	U	14	U
Carbon Tetrachloride	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Chlorobenzene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Chloroethane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Chloroform	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Chloromethane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
cis-1,2-Dichloroethene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
cis-1,3-Dichloropropene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Cyclohexane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Dibromochloromethane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Dichlorodifluoromethane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Ethyl Benzene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Isopropylbenzene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Methyl Acetate	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Methyl Butyl Ketone	UG/KG	37	UJ	34	UJ	75	U	70	UJ	29	U	13	UJ	12	U	14	UJ
Methyl Ethyl Ketone	UG/KG	37	UJ	34	UJ	75	U	88	J	29	U	13	UJ	12	U	14	UJ
Methyl Isobutyl Ketone	UG/KG	37	UJ	34	UJ	75	U	70	UJ	29	U	13	UJ	12	U	14	UJ
Methyl T-Butyl Ether (MTBE)	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Methylcyclohexane	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Methylene Chloride	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Styrene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Tetrachloroethene (Tetrachloroethylene)	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Toluene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Total Xylenes	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
trans-1,2-Dichloroethene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
trans-1,3-Dichloropropene	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Trichloroethene (Trichloroethylene)	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Trichlorofluoromethane (Freon 11)	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U
Vinyl Chloride	UG/KG	37	U	34	U	75	U	70	U	29	U	13	U	12	U	14	U

Miscellaneous Volatiles

		GS01SD		GS02SD		GS03SD		GS04SD		GS05SD		GS06SD		GS07SD		GS08SD	
ACETALDEHYDE	UG/KG		NR		NR		NR	71	NJ		NR		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR		NR	180	J	33	J		NR		NR	8	J

Data Qualifiers

U-Analyte not detected at or above reporting limit. The number is the minimum quantitation limit.
J-Identification of analyte is acceptable; reported value is an estimate.
UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification.
NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to interferences. | A-Analyte analyzed in replicate. Reported value is 'average' of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Table 9. Groundwater Analytical Results.
Page 1 of 4

Metals Scan

		GS01GW		GS01PB		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
Aluminum	UG/L	320	UJ	150	UJ	450	J	850	J	1700	J	370	J	74	
Antimony	UG/L	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U
Arsenic	UG/L	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U
Barium	UG/L	20		0.6	U	120		29		26		32		0.6	U
Beryllium	UG/L	0.11		0.1	U	0.14		0.11		0.1	U	0.9		0.1	U
Cadmium	UG/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Calcium	UG/L	4600		430	U	16000		3600		3500		15000		430	U
Chromium	UG/L	1.8	R	0.6	U	0.92		1.8		1.6		0.6	U	0.6	U
Cobalt	UG/L	1.2		0.9	U	1.2	R	0.9	U	0.9	U	10		0.9	U
Copper	UG/L	1.5	U	0.6	U	0.73	U	1.1	U	0.78	U	0.6	U	0.67	
Cyanide	UG/L		NA		NA		NA		NA		NA		NA		NA
Iron	UG/L	1500		52	U	1400		2100		1900		12000		52	U
Lead	UG/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Magnesium	UG/L	1500		15	U	5500		940		930		8200		15	U
Manganese	UG/L	23		0.5	U	160		110		30		320		0.5	U
Nickel	UG/L	1.5	U	1.5	U	3.5		1.5	U	3.3		20		1.5	U
Potassium	UG/L	520		130	U	1500		870		1800		1900		100	
Selenium	UG/L	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U
Silver	UG/L	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Sodium	UG/L	40000		410	U	120000		29000		5000		86000		400	
Thallium	UG/L	3.1	U	3.1	U	3.1	U	3.1	U	3.1	U	3.1	U	3.1	U
Total Mercury	UG/L	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Vanadium	UG/L	0.6	U	0.6	U	0.82	R	2		1.9		0.6	U	0.6	U
Zinc	UG/L	11	U	11	U	13		18		11	U	42		11	U

Pesticides & Aroclors Scan

		GS01GW		GS01PB		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
4,4'-DDD (p,p'-DDD)	UG/L	0.02	UJ		NR	0.02	UJ	0.02	UJ	0.02	UJ	0.02	UJ		NR
4,4'-DDE (p,p'-DDE)	UG/L	0.02	UJ		NR	0.02	UJ	0.02	UJ	0.02	UJ	0.02	UJ		NR
4,4'-DDT (p,p'-DDT)	UG/L	0.02	UJ		NR	0.02	UJ	0.02	UJ	0.02	UJ	0.02	UJ		NR
Aldrin	UG/L	0.01	U		NR	0.01	U	0.01	U	0.01	U	0.01	U		NR
alpha-BHC	UG/L	0.01	U		NR	0.01	U	0.01	U	0.01	U	0.01	U		NR
alpha-Chlordane /2	UG/L	0.01	U		NR	0.01	U	0.01	U	0.01	U	0.01	U		NR
beta-BHC	UG/L	0.01	U		NR	0.01	U	0.01	U	0.01	U	0.01	U		NR
delta-BHC	UG/L	0.01	U		NR	0.01	U	0.01	U	0.01	U	0.01	U		NR
Dieldrin	UG/L	0.02	U		NR	0.02	U	0.02	U	0.02	U	0.02	U		NR
Endosulfan I (alpha)	UG/L	0.01	U		NR	0.01	U	0.01	U	0.01	U	0.01	U		NR
Endosulfan II (beta)	UG/L	0.02	U		NR	0.02	U	0.02	U	0.02	U	0.02	U		NR
Endosulfan Sulfate	UG/L	0.02	U		NR	0.02	U	0.02	U	0.02	U	0.02	U		NR
Endrin	UG/L	0.02	UJ		NR	0.02	UJ	0.02	UJ	0.02	UJ	0.02	UJ		NR
Endrin Aldehyde	UG/L	0.02	UJ		NR	0.02	UJ	0.02	UJ	0.02	UJ	0.02	UJ		NR
Endrin Ketone	UG/L	0.02	UJ		NR	0.02	UJ	0.02	UJ	0.02	UJ	0.02	UJ		NR
gamma-BHC (Lindane)	UG/L	0.01	U		NR	0.01	U	0.01	U	0.01	U	0.01	U		NR
gamma-Chlordane /2	UG/L	0.01	U		NR	0.01	U	0.01	U	0.01	U	0.01	U		NR
Heptachlor	UG/L	0.01	U		NR	0.01	U	0.01	U	0.01	U	0.01	U		NR
Heptachlor Epoxide	UG/L	0.01	U		NR	0.01	U	0.01	U	0.01	U	0.01	U		NR
Methoxychlor	UG/L	0.1	U		NR	0.1	U	0.1	U	0.1	U	0.1	U		NR
PCB-1016 (Aroclor 1016)	UG/L	0.2	U		NR	0.2	U	0.2	U	0.2	U	0.2	U		NR
PCB-1221 (Aroclor 1221)	UG/L	0.4	U		NR	0.4	U	0.4	U	0.4	U	0.4	U		NR
PCB-1232 (Aroclor 1232)	UG/L	0.2	U		NR	0.2	U	0.2	U	0.2	U	0.2	U		NR
PCB-1242 (Aroclor 1242)	UG/L	0.2	U		NR	0.2	U	0.2	U	0.2	U	0.2	U		NR
PCB-1248 (Aroclor 1248)	UG/L	0.2	U		NR	0.2	U	0.2	U	0.2	U	0.2	U		NR

Pesticides & Aroclors Scan

		GS01GW		GS01PB		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
PCB-1254 (Aroclor 1254)	UG/L	0.2	U		NR	0.2	U	0.2	U	0.2	U	0.2	U		NR
PCB-1260 (Aroclor 1260)	UG/L	0.2	U		NR	0.2	U	0.2	U	0.2	U	0.2	U		NR
Toxaphene	UG/L	1	U		NR	1	U	1	U	1	U	1	U		NR

Extractables Scan

		GS01GW		GS01PB		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
(3-and/or 4-)Methylphenol	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
1,1-Biphenyl	UG/L	5	UJ		NR	5	UJ	5	UJ	5	U	5	U		NR
1,2,4,5-Tetrachlorobenzene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
2,4,5-Trichlorophenol	UG/L	20	UJ		NR	20	UJ	20	U	20	U	20	U		NR
2,4,6-Trichlorophenol	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
2,4-Dichlorophenol	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
2,4-Dimethylphenol	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
2,4-Dinitrophenol	UG/L	20	UJ		NR	20	UJ	20	UJ	20	UJ	20	UJ		NR
2,4-Dinitrotoluene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
2,6-Dinitrotoluene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
2-Chloronaphthalene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
2-Chlorophenol	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
2-Methyl-4,6-Dinitrophenol	UG/L	20	UJ		NR	20	UJ	20	UJ	20	UJ	20	UJ		NR
2-Methylnaphthalene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
2-Methylphenol	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
2-Nitroaniline	UG/L	20	UJ		NR	20	UJ	20	U	20	U	20	U		NR
2-Nitrophenol	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
3,3'-Dichlorobenzidine	UG/L	5	UJ		NR	5	UJ	5	UJ	5	UJ	5	UJ		NR
3-Nitroaniline	UG/L	20	UJ		NR	20	UJ	20	U	20	U	20	U		NR
4-Bromophenyl Phenyl Ether	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
4-Chloro-3-Methylphenol	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
4-Chloroaniline	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
4-Chlorophenyl Phenyl Ether	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
4-Nitroaniline	UG/L	20	UJ		NR	20	UJ	20	U	20	U	20	U		NR
4-Nitrophenol	UG/L	20	UJ		NR	20	UJ	20	U	20	U	20	U		NR
Acenaphthene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Acenaphthylene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Acetophenone	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Anthracene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Atrazine	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Benzaldehyde	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Benzo(a)Anthracene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Benzo(b)Fluoranthene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Benzo(ghi)Perylene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Benzo(k)Fluoranthene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Benzo-a-Pyrene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Benzyl Butyl Phthalate	UG/L	5	UJ		NR	5	UJ	5	UJ	5	U	5	U		NR
bis(2-Chloroethoxy)Methane	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
bis(2-Chloroethyl) Ether	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
bis(2-Chloroisopropyl) Ether	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
bis(2-Ethylhexyl) Phthalate	UG/L	5	UJ		NR	5	UJ	5	UJ	5	U	5	U		NR
Caprolactam	UG/L	5	UJ		NR	5	UJ	5	UJ	5	U	5	U		NR
Carbazole	UG/L		NA		NR		NA		NA		NA		NA		NR
Chrysene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Dibenzo(a,h)Anthracene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Dibenzofuran	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Diethyl Phthalate	UG/L	5	UJ		NR	5	UJ	5	UJ	5	U	5	U		NR
Dimethyl Phthalate	UG/L	5	UJ		NR	5	UJ	5	UJ	5	U	5	U		NR
Di-n-Butylphthalate	UG/L	5	UJ		NR	5	UJ	5	UJ	5	U	5	U		NR
Di-n-Octylphthalate	UG/L	5	UJ		NR	5	UJ	5	UJ	5	U	5	U		NR
Fluoranthene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Fluorene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Hexachlorobenzene (HCB)	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Hexachlorobutadiene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Hexachlorocyclopentadiene (HCCP)	UG/L	5	UJ		NR	5	UJ	5	UJ	5	UJ	5	UJ		NR
Hexachloroethane	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Indeno (1,2,3-cd) Pyrene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Isophorone	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Naphthalene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Nitrobenzene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
n-Nitrosodi-n-Propylamine	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR

Extractables Scan

		GS01GW		GS01PB		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
n-Nitrosodiphenylamine/Diphenylamine	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Pentachlorophenol	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Phenanthrene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Phenol	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR
Pyrene	UG/L	5	UJ		NR	5	UJ	5	U	5	U	5	U		NR

Miscellaneous Extractables

		GS01GW				GS02GW		GS03GW				GS05GW			
2 UNKNOWN COMPOUNDS	UG/L		NR				NR		NR			4.7	J		
D-LIMONENE	UG/L	2.2	NJ				NR		NR				NR		
LIMONENE	UG/L		NR			2.2	NJ	2.1	NJ				NR		

Volatiles Scan

		GS01GW		GS01PB		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
1,1,1-Trichloroethane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,1,2,2-Tetrachloroethane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,1,2-Trichloroethane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,1-Dichloroethane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,1-Dichloroethene (1,1-Dichloroethylene)	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,2,3-Trichlorobenzene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,2,4-Trichlorobenzene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,2-Dibromo-3-Chloropropane (DBCP)	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,2-Dibromoethane (EDB)	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,2-Dichlorobenzene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,2-Dichloroethane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,2-Dichloropropane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,3-Dichlorobenzene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
1,4-Dichlorobenzene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Acetone	UG/L	5	U		NR	5	U	5	U	5	U	5	U		NR
Benzene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Bromochloromethane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Bromodichloromethane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Bromoform	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Bromomethane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Carbon Disulfide	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Carbon Tetrachloride	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Chlorobenzene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Chloroethane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Chloroform	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Chloromethane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
cis-1,2-Dichloroethene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
cis-1,3-Dichloropropene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Cyclohexane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Dibromochloromethane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Dichlorodifluoromethane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Ethyl Benzene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Isopropylbenzene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Methyl Acetate	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Methyl Butyl Ketone	UG/L	5	U		NR	5	U	5	U	5	U	5	U		NR
Methyl Ethyl Ketone	UG/L	6.1	UJ		NR	5	UJ	6.9	UJ	7.2	J	6.6	UJ		NR
Methyl Isobutyl Ketone	UG/L	5	U		NR	5	U	5	U	5	U	5	U		NR
Methyl T-Butyl Ether (MTBE)	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Methylcyclohexane	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Methylene Chloride	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Styrene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Tetrachloroethene (Tetrachloroethylene)	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Toluene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Total Xylenes	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
trans-1,2-Dichloroethene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
trans-1,3-Dichloropropene	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR

Volatiles Scan

		GS01GW		GS01PB		GS02GW		GS03GW		GS04GW		GS05GW		GS06GW	
Trichloroethene (Trichloroethylene)	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Trichlorofluoromethane (Freon 11)	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR
Vinyl Chloride	UG/L	0.5	U		NR	0.5	U	0.5	U	0.5	U	0.5	U		NR

Miscellaneous Volatiles

		GS01GW				GS02GW		GS03GW				GS05GW			
INDANE	UG/L		NR				NR	1.3	NJ				NR		

Data Qualifiers

U-Analyte not detected at or above reporting limit. The number is the minimum quantitation limit.
J-Identification of analyte is acceptable; reported value is an estimate.
UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification.
NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to interferences. | A-Analyte analyzed in replicate. Reported value is 'average' of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Table 10. Surface Soil Miscellaneous Analytical Results.

Miscellaneous Extractables

	Units	GS01SS		GS02SS		GS03SS		GS04SS		GS05SS		GS06SS		GS07SS	
[3,4:9,10] DIBENZPYRENE	UG/KG		NR		NR		NR		NR	180	NJ		NR		NR
1-DOCOSENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
1,2:3,4-DIBENZPYRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
1,2:4,5-DIBENZPYRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
1,2:7,8-DIBENZPHENANTHRENE	UG/KG		NR		NR		NR		NR	260	NJ		NR		NR
1,2:7,8-DIBENZPHENANTHRRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
10 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
10 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR
11 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR	2700	J		NR		NR
11H-BENZO [A] FLUORENE	UG/KG		NR		NR		NR		NR	470	NJ		NR		NR
11H-BENZO [B] FLUORENE	UG/KG		NR		NR		NR		NR		NR		NR	740	NJ
12 UNKNOWN COMPOUNDS	UG/KG	1400	J		NR		NR		NR		NR		NR		NR
14 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR	2800	J		NR
15 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
16 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
17 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
19 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
1-EICOSANOL	UG/KG		NR		NR		NR		NR		NR		NR		NR
1-HEPTADECENE	UG/KG		NR		NR		NR		NR		NR	120	NJ		NR
1-OCTADECENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
1-TETRADECENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
2 UNKNOWN KETONES	UG/KG		NR		NR		NR	250	J		NR		NR		NR
2,2'-BINAPHTHALANE	UG/KG		NR		NR		NR		NR		NR		NR		NR
2,2'-BINAPHTHALENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
21 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
25 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
3 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
3 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR
3,4-DIHYDROCYCLOPENTA (CD) PYRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
4 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
4 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR	1500	J		NR		NR
5 UNKNOWN COMPOUNDS	UG/KG		NR	2200	J		NR		NR		NR		NR		NR
5, 12-NAPHTHACENEDIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
5,12-NAPHTAHCENEDIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
5,12-NAPHTHACENEDIONE	UG/KG		NR		NR		NR		NR	330	NJ		NR		NR
6 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
6 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR
7 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR	2000	J		NR		NR		NR
7 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR	5300	J
7H-BENZ [DE] ANTHRACEN-7-ONE	UG/KG		NR		NR		NR		NR	310	NJ		NR	850	NJ
8 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR	5900	J
8 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR
9, 10-ANTHRACENEDIONE	UG/KG		NR		NR		NR		NR	260	NJ		NR		NR
9,10-ANTHRACENEDIONE	UG/KG		NR		NR		NR		NR		NR		NR	890	NJ
9H-FLUOREN-9-ONE	UG/KG		NR		NR		NR		NR		NR		NR	460	NJ
9-OCTADECENE, (E) -	UG/KG		NR		NR		NR		NR		NR	170	NJ		NR
ANTHRACENE, 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR	1000	J
BENZ (A) ANTHRACENE-7, 12-DIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZ (A) ANTHRACENE-7,12-DIONE	UG/KG		NR		NR		NR		NR		NR		NR	540	NJ
BENZ [A] ANTHRACENE, 7-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZ [E] ACEPHENANTHRYLENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZO [B] NAPHTHO [2,1-D] THIOPH	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZO [B] NAPHTHO [2,1-D] THIOPHENE	UG/KG		NR		NR		NR		NR	380	NJ		NR		NR
BENZO [B] NAPHTHO [2,1-D] THIPHENE	UG/KG		NR		NR		NR		NR		NR		NR	670	NJ
BENZO [B] NAPHTHO [2,3-D] FURAN	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZO [B] TRIPHENYLENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZO [E] PYRENE	UG/KG		NR		NR		NR		NR	290	NJ		NR	1200	NJ

Miscellaneous Extractables

	Units	GS01SS		GS02SS		GS03SS		GS04SS		GS05SS		GS06SS		GS07SS	
BENZO [J] FLUORANTHENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZOFLUORENE	UG/KG		NR		NR		NR		NR	160	J		NR		NR
CARYOPHYLLENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
CHOLESTEROL	UG/KG		NR		NR		NR		NR		NR		NR		NR
CHRYSENE, 1-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
CHRYSENE, 5-MEHTHYL-	UG/KG		NR		NR		NR		NR		NR		NR	580	NJ
CHRYSENE, 5-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
CHRYSENE, 6-METHYL-	UG/KG		NR		NR		NR		NR	270	NJ		NR		NR
CYCLOPENTA (DEF) PHENANTHRENONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
D:C-FRIEDOOLEANAN-3-ONE	UG/KG		NR		NR		NR		NR		NR	860	NJ		NR
HEXADECANOIC ACID	UG/KG		NR		NR		NR		NR		NR	100	NJ		NR
METHYLANTHRACENE	UG/KG		NR		NR		NR		NR	190	J		NR		NR
NAPHTHALENE, 2-PHENYL-	UG/KG		NR		NR		NR		NR		NR		NR	760	NJ
PENTADECANOIC ACID	UG/KG		NR		NR		NR		NR		NR		NR		NR
PERYLENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
PHENANTHRENE, 1-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
PHENANTHRENE, 2,3-DIMETHYL-	UG/KG		NR		NR		NR		NR	160	NJ		NR		NR
PHENANTHRENE, 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR	870	NJ
PHENANTHRENE, 4,5-DIMETHYL-	UG/KG		NR		NR		NR		NR		NR		NR	830	NJ
PYRENE 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR	1200	NJ
PYRENE, 1,3-DIMETHYL-	UG/KG		NR		NR		NR		NR	280	NJ		NR		NR
PYRENE, 1-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
PYRENE, 2-METHYL-	UG/KG		NR		NR		NR		NR	250	NJ		NR		NR
PYRENE, 4-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR	740	NJ
STIGMAST-4-EN-3-ONE	UG/KG		NR	190	NJ		NR	350	J		NR	460	NJ		NR
TESTOSTERONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
TRIPHENYLENE, 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
UNKNOWN ALCOHOL	UG/KG		NR		NR		NR	92	J		NR		NR		NR
UNKNOWN ALKENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
UNKNOWN CARBOXYLIC ACID	UG/KG		NR		NR		NR		NR		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR	91	J		NR		NR		NR		NR
UNKNOWN PAH	UG/KG		NR		NR		NR		NR		NR		NR		NR
VALENCENE	UG/KG		NR		NR		NR		NR		NR		NR		NR

Miscellaneous Volatiles

		GS01SS		GS02SS		GS03SS		GS04SS		GS05SS		GS06SS		GS07SS	
2 UNKNOWN COMPOUNDS	UG/KG	19	J	51	J		NR		NR		NR	20	J		NR
3 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
ACETALDEHYDE	UG/KG		NR		NR		NR		NR		NR		NR		NR
BUTANAL	UG/KG		NR		NR		NR		NR		NR		NR		NR
HEXANAL	UG/KG		NR		NR		NR		NR		NR	64	NJ		NR
PENTANAL	UG/KG		NR		NR		NR		NR		NR		NR		NR
PROPANAL, 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR		NR	19	J	7	J		NR	10	J
UNKNOWN COMPOUNDS	UG/KG		NR		NR	6	J		NR		NR		NR		NR

Table 10. Surface Soil Miscellaneous Analytical Results.

Miscellaneous Extractables

	Units	GS08SS		GS09SS		GS10SS		GS11SS		GS12SS		GS13SS		GS14SS	
[3,4:9,10] DIBENZPYRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
1-DOCOSENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
1,2:3,4-DIBENZPYRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
1,2:4,5-DIBENZPYRENE	UG/KG	880	NJ		NR		NR		NR		NR		NR		NR
1,2:7,8-DIBENZPHENANTHRENE	UG/KG		NR		NR		NR		NR		NR		NR	550	NJ
1,2:7,8-DIBENZPHENANTHRRENE	UG/KG		NR		NR		NR	480	J		NR		NR		NR
10 UNKNOWN COMPOUNDS	UG/KG		NR	1900	J		NR		NR		NR		NR		NR
10 UNKNOWN PAHS	UG/KG		NR		NR	9400	J		NR		NR		NR		NR
11 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
11H-BENZO [A] FLUORENE	UG/KG		NR		NR	2200	NJ		NR		NR		NR	1700	NJ
11H-BENZO [B] FLUORENE	UG/KG		NR		NR		NR		NR		NR	1100	NJ		NR
12 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR	3600	J		NR	19000	J		NR
14 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
15 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
16 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
17 UNKNOWN COMPOUNDS	UG/KG	23000	J		NR		NR		NR		NR		NR		NR
19 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
1-EICOSANOL	UG/KG		NR		NR		NR		NR		NR		NR		NR
1-HEPTADECENE	UG/KG		NR	230	NJ		NR		NR		NR		NR		NR
1-OCTADECENE	UG/KG		NR	230	NJ		NR		NR		NR		NR		NR
1-TETRADECENE	UG/KG		NR	140	NJ		NR		NR		NR		NR		NR
2 UNKNOWN KETONES	UG/KG		NR		NR		NR		NR		NR		NR		NR
2,2'-BINAPHTHALANE	UG/KG		NR		NR		NR		NR		NR	560	NJ		NR
2,2'-BINAPHTHALENE	UG/KG		NR		NR	560	NJ		NR		NR		NR		NR
21 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
25 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
3 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR	410	J		NR		NR
3 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR
3,4-DIHYDROCYCLOPENTA (CD) PYRENE	UG/KG		NR		NR	550	NJ		NR		NR		NR	520	NJ
4 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
4 UNKNOWN PAHS	UG/KG	5400	J		NR		NR		NR		NR		NR		NR
5 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
5, 12-NAPHTHACENEDIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
5,12-NAPHTAHCENEDIONE	UG/KG		NR		NR		NR		NR		NR	770	NJ		NR
5,12-NAPHTHACENEDIONE	UG/KG	1400	NJ		NR	690	NJ		NR		NR		NR	380	NJ
6 UNKNOWN COMPOUNDS	UG/KG		NR		NR	4100	J		NR		NR		NR		NR
6 UNKNOWN PAHS	UG/KG		NR		NR		NR	2100	J		NR	8200	J		NR
7 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
7 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR
7H-BENZ [DE] ANTHRACEN-7-ONE	UG/KG	910	NJ		NR	1100	NJ	430	NJ		NR	1500	NJ	870	NJ
8 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR	5500	J
8 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR	5600	J
9, 10-ANTHRACENEDIONE	UG/KG		NR		NR	660	NJ	260	NJ		NR		NR		NR
9,10-ANTHRACENEDIONE	UG/KG		NR		NR		NR		NR		NR	890	NJ		NR
9H-FLUOREN-9-ONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
9-OCTADECENE, (E) -	UG/KG		NR		NR		NR		NR		NR		NR		NR
ANTHRACENE, 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZ (A) ANTHRACENE-7, 12-DIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZ (A) ANTHRACENE-7,12-DIONE	UG/KG		NR		NR		NR	330	NJ		NR		NR		NR
BENZ [A] ANTHRACENE, 7-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZ [E] ACEPHENANTHRYLENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZO [B] NAPHTHO [2,1-D] THIOPH	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZO [B] NAPHTHO [2,1-D] THIOPHENE	UG/KG		NR		NR		NR		NR		NR		NR	550	NJ
BENZO [B] NAPHTHO [2,1-D] THIPHENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZO [B] NAPHTHO [2,3-D] FURAN	UG/KG		NR		NR		NR		NR		NR	780	NJ		NR
BENZO [B] TRIPHENYLENE	UG/KG		NR		NR		NR	380	NJ		NR		NR		NR
BENZO [E] PYRENE	UG/KG		NR		NR	3300	NJ	1700	NJ		NR		NR	2600	NJ

Miscellaneous Extractables

	Units	GS08SS		GS09SS		GS10SS		GS11SS		GS12SS		GS13SS		GS14SS	
BENZO [J] FLUORANTHENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZOFLUORENE	UG/KG	920	J		NR		NR		NR		NR		NR		NR
CARYOPHYLLENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
CHOLESTEROL	UG/KG		NR		NR		NR		NR		NR		NR		NR
CHRYSENE, 1-METHYL-	UG/KG	1200	NJ		NR		NR		NR		NR		NR		NR
CHRYSENE, 5-MEHTHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
CHRYSENE, 5-METHYL-	UG/KG		NR		NR		NR		NR		NR	910	NJ		NR
CHRYSENE, 6-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
CYCLOPENTA (DEF) PHENANTHRENONE	UG/KG		NR		NR	940	NJ	320	NJ		NR	1400	NJ	470	NJ
D:C-FRIEDOOLEANAN-3-ONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
HEXADECANOIC ACID	UG/KG		NR		NR		NR	670	NJ		NR		NR		NR
METHYLANTHRACENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
NAPHTHALENE, 2-PHENYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
PENTADECANOIC ACID	UG/KG		NR	97	NJ		NR		NR		NR		NR		NR
PERYLENE	UG/KG	3900	NJ		NR	1000	NJ		NR		NR		NR	710	NJ
PHENANTHRENE, 1-METHYL-	UG/KG		NR		NR		NR		NR		NR	1100	NJ		NR
PHENANTHRENE, 2,3-DIMETHYL-	UG/KG		NR		NR		NR		NR		NR	1300	NJ		NR
PHENANTHRENE, 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
PHENANTHRENE, 4,5-DIMETHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
PYRENE 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
PYRENE, 1,3-DIMETHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
PYRENE, 1-METHYL-	UG/KG	880	NJ		NR	710	NJ	390	NJ		NR	1400	NJ	1300	NJ
PYRENE, 2-METHYL-	UG/KG	1000	NJ		NR	1700	NJ		NR		NR	660	NJ	720	NJ
PYRENE, 4-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
STIGMAST-4-EN-3-ONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
TESTOSTERONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
TRIPHENYLENE, 2-METHYL-	UG/KG		NR		NR	800	NJ	370	NJ		NR		NR	840	NJ
UNKNOWN ALCOHOL	UG/KG		NR		NR		NR		NR		NR		NR		NR
UNKNOWN ALKENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
UNKNOWN CARBOXYLIC ACID	UG/KG		NR		NR	720	J		NR		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR		NR		NR		NR		NR		NR
UNKNOWN PAH	UG/KG		NR		NR		NR		NR		NR	1200	NJ		NR
VALENCENE	UG/KG		NR		NR		NR		NR		NR		NR		NR

Miscellaneous Volatiles

		GS08SS		GS09SS		GS10SS		GS11SS		GS12SS		GS13SS		GS14SS	
2 UNKNOWN COMPOUNDS	UG/KG	18	J		NR		NR		NR		NR		NR		NR
3 UNKNOWN COMPOUNDS	UG/KG		NR		NR	29	J	35	J	30	J		NR		NR
ACETALDEHYDE	UG/KG		NR		NR		NR		NR		NR	16	NJ	12	NJ
BUTANAL	UG/KG		NR		NR		NR		NR	5	NJ		NR		NR
HEXANAL	UG/KG		NR		NR	45	NJ	37	J	18	NJ		NR		NR
PENTANAL	UG/KG		NR		NR		NR		NR		NR		NR		NR
PROPANAL, 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR		NR		NR		NR	13	J	7	J
UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR

Table 10. Surface Soil Miscellaneous Analytical Results.

Miscellaneous Extractables

	Units	GS15SS		GS16SS		GS17SS		GS18SS		GS19SS		GS20SS		GS20SD		GS21SS	
[3,4:9,10] DIBENZPYRENE	UG/KG		NR		NR		NR		NR		NR		NR				NR
1-DOCOSENE	UG/KG		NR		NR		NR		NR		NR		NR	220	NJ		
1,2:3,4-DIBENZPYRENE	UG/KG	190	NJ		NR	290	NJ		NR		NR		NR		NR		NR
1,2:4,5-DIBENZPYRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
1,2:7,8-DIBENZPHENANTHRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
1,2:7,8-DIBENZPHENANTHRRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
10 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
10 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
11 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
11H-BENZO [A] FLUORENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
11H-BENZO [B] FLUORENE	UG/KG	350	NJ		NR	510	NJ		NR		NR		NR		NR		NR
12 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
14 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR	3100	J
15 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
16 UNKNOWN COMPOUNDS	UG/KG		NR		NR	5900	J		NR		NR		NR		NR		NR
17 UNKNOWN COMPOUNDS	UG/KG		NR	24000	J		NR	3100	J		NR	8800	J	9100	J		NR
19 UNKNOWN COMPOUNDS	UG/KG	12000	J		NR		NR		NR		NR		NR		NR		NR
1-EICOSANOL	UG/KG		NR		NR		NR		NR		NR	190	NJ		NR	230	NJ
1-HEPTADECENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
1-OCTADECENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
1-TETRADECENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
2 UNKNOWN KETONES	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
2,2'-BINAPHTHALANE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
2,2'-BINAPHTHALENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
21 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
25 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR	12000	J		NR		NR		NR
3 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
3 UNKNOWN PAHS	UG/KG		NR		NR	970	J		NR		NR		NR		NR		NR
3,4-DIHYDROCYCLOPENTA (CD) PYRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
4 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
4 UNKNOWN PAHS	UG/KG	2000	J		NR		NR		NR		NR		NR		NR		NR
5 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
5, 12-NAPHTHACENEDIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
5,12-NAPHTAHCENEDIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
5,12-NAPHTHACENEDIONE	UG/KG		NR	2600	J	800	NJ		NR		NR		NR		NR		NR
6 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
6 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
7 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
7 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
7H-BENZ [DE] ANTHRACEN-7-ONE	UG/KG	440	NJ	1600	J	390	NJ		NR		NR		NR		NR		NR
8 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
8 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
9, 10-ANTHRACENEDIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
9,10-ANTHRACENEDIONE	UG/KG	700	NJ	160	J		NR		NR		NR		NR		NR		NR
9H-FLUOREN-9-ONE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
9-OCTADECENE, (E) -	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
ANTHRACENE, 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
BENZ (A) ANTHRACENE-7, 12-DIONE	UG/KG	260	NJ		NR		NR		NR		NR		NR		NR		NR
BENZ (A) ANTHRACENE-7,12-DIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
BENZ [A] ANTHRACENE, 7-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
BENZ [E] ACEPHENANTHRYLENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
BENZO [B] NAPHTHO [2,1-D] THIOPH	UG/KG		NR	1400	J		NR		NR		NR		NR		NR		NR
BENZO [B] NAPHTHO [2,1-D] THIOPHENE	UG/KG		NR		NR	310	NJ		NR		NR		NR		NR		NR
BENZO [B] NAPHTHO [2,1-D] THIPHENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
BENZO [B] NAPHTHO [2,3-D] FURAN	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
BENZO [B] TRIPHENYLENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
BENZO [E] PYRENE	UG/KG		NR		NR	880	NJ		NR		NR		NR		NR		NR

Miscellaneous Extractables

	Units	GS15SS		GS16SS		GS17SS		GS18SS		GS19SS		GS20SS		GS20SD		GS21SS	
BENZO [J] FLUORANTHENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
BENZOFLUORENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
CARYOPHYLLENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
CHOLESTEROL	UG/KG		NR		NR	650	NJ		NR		NR		NR		NR		NR
CHRYSENE, 1-METHYL-	UG/KG	300	NJ		NR		NR		NR		NR		NR		NR		NR
CHRYSENE, 5-MEHTHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
CHRYSENE, 5-METHYL-	UG/KG		NR	2300	J	310	NJ		NR		NR		NR		NR		NR
CHRYSENE, 6-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
CYCLOPENTA (DEF) PHENANTHRENONE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
D:C-FRIEDOOLEANAN-3-ONE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
HEXADECANOIC ACID	UG/KG		NR		NR		NR	110	NJ	160	J	130	NJ	150	NJ		NR
METHYLANTHRACENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
NAPHTHALENE, 2-PHENYL-	UG/KG		NR		NR	210	NJ		NR		NR		NR		NR		NR
PENTADECANOIC ACID	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
PERYLENE	UG/KG		NR	200	J		NR		NR		NR		NR		NR		NR
PHENANTHRENE, 1-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
PHENANTHRENE, 2,3-DIMETHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
PHENANTHRENE, 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
PHENANTHRENE, 4,5-DIMETHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
PYRENE 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
PYRENE, 1,3-DIMETHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
PYRENE, 1-METHYL-	UG/KG		NR	2000	J		NR		NR		NR		NR		NR		NR
PYRENE, 2-METHYL-	UG/KG		NR	1400	J		NR		NR		NR		NR		NR		NR
PYRENE, 4-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
STIGMAST-4-EN-3-ONE	UG/KG		NR		NR		NR		NR		NR		NR	320	NJ		NR
TESTOSTERONE	UG/KG		NR		NR		NR		NR	390	NJ		NR		NR		NR
TRIPHENYLENE, 2-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
UNKNOWN ALCOHOL	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
UNKNOWN ALKENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
UNKNOWN CARBOXYLIC ACID	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
UNKNOWN PAH	UG/KG		NR	580	J		NR		NR		NR		NR		NR		NR
VALENCENE	UG/KG		NR	1200	NJ		NR		NR		NR		NR		NR		NR

Miscellaneous Volatiles

		GS15SS		GS16SS		GS17SS		GS18SS		GS19SS		GS20SS		GS20SD		GS21SS	
2 UNKNOWN COMPOUNDS	UG/KG		NR	16	J		NR		NR		NR		NR		NR		NR
3 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
ACETALDEHYDE	UG/KG	24	NJ		NR	38	NJ		NR	18	NJ		NR	42	NJ	47	NJ
BUTANAL	UG/KG		NR		NR		NR		NR		NR		NR	11	NJ		NR
HEXANAL	UG/KG		NR	31	NJ		NR		NR		NR		NR		NR		NR
PENTANAL	UG/KG		NR		NR		NR		NR		NR		NR		NR	7	NJ
PROPANAL, 2-METHYL-	UG/KG		NR		NR	7	NJ		NR		NR		NR	7	NJ		NR
UNKNOWN COMPOUND	UG/KG	10	J		NR	12	J		NR		NR		NR	9	J	12	J
UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR

Table 10. Surface Soil Miscellaneous Analytical Results.

Miscellaneous Extractables

	Units	GS22SS		GS23SS		GS24SS	
[3,4:9,10] DIBENZPYRENE	UG/KG		NR		NR		NR
1-DOCOSENE	UG/KG		NR		NR		NR
1,2:3,4-DIBENZPYRENE	UG/KG		NR		NR		NR
1,2:4,5-DIBENZPYRENE	UG/KG		NR		NR		NR
1,2:7,8-DIBENZPHENANTHRENE	UG/KG		NR		NR		NR
1,2:7,8-DIBENZPHENANTHRRENE	UG/KG		NR		NR		NR
10 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
10 UNKNOWN PAHS	UG/KG		NR		NR		NR
11 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
11H-BENZO [A] FLUORENE	UG/KG		NR		NR		NR
11H-BENZO [B] FLUORENE	UG/KG		NR		NR		NR
12 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
14 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
15 UNKNOWN COMPOUNDS	UG/KG		NR		NR	5900	J
16 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
17 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
19 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
1-EICOSANOL	UG/KG		NR		NR		NR
1-HEPTADECENE	UG/KG		NR		NR		NR
1-OCTADECENE	UG/KG		NR		NR		NR
1-TETRADECENE	UG/KG		NR		NR		NR
2 UNKNOWN KETONES	UG/KG		NR		NR		NR
2,2'-BINAPHTHALANE	UG/KG		NR		NR		NR
2,2'-BINAPHTHALENE	UG/KG		NR		NR		NR
21 UNKNOWN COMPOUNDS	UG/KG		NR	3600	J		NR
25 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
3 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
3 UNKNOWN PAHS	UG/KG		NR		NR		NR
3,4-DIHYDROCYCLOPENTA (CD) PYRENE	UG/KG		NR		NR		NR
4 UNKNOWN COMPOUNDS	UG/KG	1300	J		NR		NR
4 UNKNOWN PAHS	UG/KG		NR		NR		NR
5 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
5, 12-NAPHTHACENEDIONE	UG/KG		NR	210	NJ		NR
5,12-NAPHTAHCENEDIONE	UG/KG		NR		NR		NR
5,12-NAPHTHACENEDIONE	UG/KG		NR		NR		NR
6 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
6 UNKNOWN PAHS	UG/KG		NR		NR	1700	J
7 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
7 UNKNOWN PAHS	UG/KG		NR		NR		NR
7H-BENZ [DE] ANTHRACEN-7-ONE	UG/KG		NR	210	NJ	140	NJ
8 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR
8 UNKNOWN PAHS	UG/KG		NR		NR		NR
9, 10-ANTHRACENEDIONE	UG/KG		NR		NR		NR
9,10-ANTHRACENEDIONE	UG/KG		NR		NR		NR
9H-FLUOREN-9-ONE	UG/KG		NR		NR		NR
9-OCTADECENE, (E) -	UG/KG		NR		NR		NR
ANTHRACENE, 2-METHYL-	UG/KG		NR		NR		NR
BENZ (A) ANTHRACENE-7, 12-DIONE	UG/KG		NR		NR		NR
BENZ (A) ANTHRACENE-7,12-DIONE	UG/KG		NR		NR		NR
BENZ [A] ANTHRACENE, 7-METHYL-	UG/KG		NR	240	NJ		NR
BENZ [E] ACEPHENANTHRYLENE	UG/KG		NR	110	NJ		NR
BENZO [B] NAPHTHO [2,1-D] THIOPH	UG/KG		NR		NR		NR
BENZO [B] NAPHTHO [2,1-D] THIOPHENE	UG/KG		NR		NR		NR
BENZO [B] NAPHTHO [2,1-D] THIPHENE	UG/KG		NR		NR		NR
BENZO [B] NAPHTHO [2,3-D] FURAN	UG/KG		NR		NR		NR
BENZO [B] TRIPHENYLENE	UG/KG		NR		NR		NR
BENZO [E] PYRENE	UG/KG		NR	240	NJ	840	NJ

Miscellaneous Extractables

	Units	GS22SS		GS23SS		GS24SS	
BENZO [J] FLUORANTHENE	UG/KG		NR	440	NJ		NR
BENZOFLUORENE	UG/KG		NR		NR		NR
CARYOPHYLLENE	UG/KG		NR		NR	1600	NJ
CHOLESTEROL	UG/KG		NR		NR		NR
CHRYSENE, 1-METHYL-	UG/KG		NR		NR		NR
CHRYSENE, 5-MEHTHYL-	UG/KG		NR		NR		NR
CHRYSENE, 5-METHYL-	UG/KG		NR		NR		NR
CHRYSENE, 6-METHYL-	UG/KG		NR		NR		NR
CYCLOPENTA (DEF) PHENANTHRENONE	UG/KG		NR	140	NJ		NR
D:C-FRIEDOOLEANAN-3-ONE	UG/KG		NR		NR		NR
HEXADECANOIC ACID	UG/KG	110	NJ		NR		NR
METHYLANTHRACENE	UG/KG		NR		NR		NR
NAPHTHALENE, 2-PHENYL-	UG/KG		NR		NR		NR
PENTADECANOIC ACID	UG/KG		NR		NR		NR
PERYLENE	UG/KG		NR		NR	260	
PHENANTHRENE, 1-METHYL-	UG/KG		NR		NR		NR
PHENANTHRENE, 2,3-DIMETHYL-	UG/KG		NR		NR		NR
PHENANTHRENE, 2-METHYL-	UG/KG		NR		NR		NR
PHENANTHRENE, 4,5-DIMETHYL-	UG/KG		NR		NR		NR
PYRENE 2-METHYL-	UG/KG		NR		NR		NR
PYRENE, 1,3-DIMETHYL-	UG/KG		NR		NR		NR
PYRENE, 1-METHYL-	UG/KG		NR		NR	160	NJ
PYRENE, 2-METHYL-	UG/KG		NR	130	NJ		NR
PYRENE, 4-METHYL-	UG/KG		NR		NR		NR
STIGMAST-4-EN-3-ONE	UG/KG		NR	170	NJ	2600	NJ
TESTOSTERONE	UG/KG		NR		NR		NR
TRIPHENYLENE, 2-METHYL-	UG/KG		NR		NR		NR
UNKNOWN ALCOHOL	UG/KG		NR		NR		NR
UNKNOWN ALKENE	UG/KG		NR		NR	200	J
UNKNOWN CARBOXYLIC ACID	UG/KG		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR		NR
UNKNOWN PAH	UG/KG		NR		NR		NR
VALENCENE	UG/KG		NR		NR		NR

Miscellaneous Volatiles

		GS22SS		GS23SS		GS24SS	
2 UNKNOWN COMPOUNDS	UG/KG		NR		NR	150	J
3 UNKNOWN COMPOUNDS	UG/KG		NR	30	J		NR
ACETALDEHYDE	UG/KG		NR	14	NJ		NR
BUTANAL	UG/KG		NR		NR		NR
HEXANAL	UG/KG		NR		NR		NR
PENTANAL	UG/KG		NR		NR		NR
PROPANAL, 2-METHYL-	UG/KG		NR		NR		NR
UNKNOWN COMPOUND	UG/KG	6	J		NR		NR
UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR

Data Qualifiers

U-Analyte not detected at or above reporting limit. The number is the minimum quantitation limit.
J-Identification of analyte is acceptable; reported value is an estimate.
UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification.
NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to interferences. | A-Analyte analyzed in replicate. Reported value is 'average' of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Table 11. Subsurface Soil Miscellaneous Analytical Results.

Miscellaneous Extractables

	Units	GS01SB		GS02SB		GS03SB		GS06SB		GS07SB		GS08SB		GS09SB		GS10SB	
1,2:3,4-DIBENZPYRENE	UG/KG		NR		NR		NR		NR		NR	190	NJ		NR		NR
1,2:7,8-DIBENZPHENANTHRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR	7400	NJ
1,2-BENZENEDICARBOXYLIC ACID	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
10 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
11H-BENZO [B] FLUORENE	UG/KG		NR		NR		NR		NR		NR		NR		NR	9900	NJ
13 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR	65000	J
1-PHENANTHRENECARBOXYLIC ACID	UG/KG	92	NJ		NR		NR		NR		NR		NR		NR		NR
2 UNKNOWN COMPOUNDS	UG/KG		NR		NR	250	J		NR		NR		NR		NR		NR
2 UNKNOWN OCMPOUNDS	UG/KG		NR	220	J		NR		NR		NR		NR		NR		NR
2 UNKNOWN PHTHALATES	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
2,2'-BINAPHTHALENE	UG/KG		NR		NR		NR		NR		NR		NR		NR	3100	NJ
3 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR	370	J		NR
3 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR	560	J		NR		NR
3,4-DIHYDROCYCLOPENTA (CD) PYRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR	2800	NJ
4 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR	17000	J
5 UNKNOWN COMPOUNDS	UG/KG	840	J		NR		NR		NR		NR		NR		NR		NR
5,12-NAPHTACENEDIONE -	UG/KG		NR		NR		NR		NR		NR		NR		NR	4600	NJ
5,12-NAPHTHACENEDIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
7 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR	1500	J		NR		NR
7 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
7H-BENZ [DE] ANTHRACEN-7-ONE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
7H-BENZ [DE] ANTHRACENEDIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR	4600	NJ
9,10-ANTHRACENEDIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
BENZ [A] ANTHRACENE, 8-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR	2800	NJ
BENZO [B] NAPHTHO [1,2-D] THIOPHENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
BENZO [B] NAPHTHO [2,3-D] THIOPHENE	UG/KG		NR		NR		NR		NR		NR		NR		NR	4600	NJ
BENZO [B] TRIPHENYLENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
BENZO [E] PYRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR	6200	NJ
CHRYSENE, 6-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR	6000	NJ
CYCLOPENTA (dEF) PHENANTHRENONE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
CYCLOPENTA (DEF) PHENANTHRENONE	UG/KG		NR		NR		NR		NR		NR		NR		NR	4700	NJ
ELLIPTICINE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
NAPHTHO [1,2,3,4-DEF] CHRYSENE	UG/KG		NR		NR		NR		NR		NR	120	NJ		NR		NR
PERYLENE	UG/KG		NR		NR		NR		NR		NR	490	NJ		NR	16000	NJ
PYRENE, 1-METHY-	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
PYRENE, 1-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR	9200	NJ
UNKNOWN AMIDE	UG/KG		NR		NR		NR		NR		NR	110	J		NR		NR
UNKNOWN CARBOXYLIC ACID	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR		NR		NR	190	J		NR		NR		NR
VALENCENE	UG/KG		NR		NR		NR		NR		NR		NR		NR		NR

Miscellaneous Volatiles

		GS01SB		GS02SB		GS03SB		GS06SB		GS07SB		GS08SB		GS09SB		GS10SB	
2 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR	25	J
UNKNOWN COMPOUND	UG/KG		NR		NR		NR	8	J		NR	8	J		NR		NR

Table 11. Subsurface Soil Miscellaneous Analytical Results.
Page 2 of 3

Miscellaneous Extractables

	Units	GS11SB		GS13SB		GS14SB		GS15SB		GS16SB		GS18SB		GS19SB	
1,2:3,4-DIBENZPYRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
1,2:7,8-DIBENZPHENANTHRENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
1,2-BENZENEDICARBOXYLIC ACID	UG/KG		NR		NR		NR		NR		NR	120	NJ		NR
10 UNKNOWN COMPOUNDS	UG/KG		NR		NR	3900	J		NR		NR		NR		NR
11H-BENZO [B] FLUORENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
13 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR
1-PHENANTHRENECARBOXYLIC ACID	UG/KG		NR		NR		NR		NR		NR		NR		NR
2 UNKNOWN COMPOUNDS	UG/KG		NR	1000	J		NR		NR	220	J	450	J		NR
2 UNKNOWN OCMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
2 UNKNOWN PHTHALATES	UG/KG		NR		NR		NR		NR		NR	230	J		NR
2,2'-BINAPHTHALENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
3 UNKNOWN COMPOUNDS	UG/KG	530	J		NR		NR		NR		NR		NR		NR
3 UNKNOWN PAHS	UG/KG		NR		NR		NR		NR		NR		NR		NR
3,4-DIHYDROCYCLOPENTA (CD) PYRENE	UG/KG		NR		NR	290	NJ		NR		NR		NR		NR
4 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
5 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
5,12-NAPHTACENEDIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
5,12-NAPHTHACENEDIONE	UG/KG		NR		NR	290	NJ		NR		NR		NR		NR
7 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR		NR		NR		NR		NR
7 UNKNOWN PAHS	UG/KG		NR		NR	3200	J		NR		NR		NR		NR
7H-BENZ [DE] ANTHRACEN-7-ONE	UG/KG		NR		NR	500	NJ		NR		NR		NR		NR
7H-BENZ [DE] ANTHRACENEDIONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
9,10-ANTHRACENEDIONE	UG/KG		NR		NR	320	NJ		NR		NR		NR		NR
BENZ [A] ANTHRACENE, 8-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZO [B] NAPHTHO [1,2-D] THIOPHENE	UG/KG		NR		NR	270	NJ		NR		NR		NR		NR
BENZO [B] NAPHTHO [2,3-D] THIOPHENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
BENZO [B] TRIPHENYLENE	UG/KG		NR		NR	340	NJ		NR		NR		NR		NR
BENZO [E] PYRENE	UG/KG		NR		NR	1900	NJ		NR		NR		NR		NR
CHRYSENE, 5-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
CYCLOPENTA (dEF) PHENANTHRENONE	UG/KG		NR		NR	320	NJ		NR		NR		NR		NR
CYCLOPENTA (DEF) PHENANTHRENONE	UG/KG		NR		NR		NR		NR		NR		NR		NR
ELLIPTICINE	UG/KG		NR		NR	270	NJ		NR		NR		NR		NR
NAPHTHO [1,2,3,4-DEF] CHRYSENE	UG/KG		NR		NR		NR		NR		NR		NR		NR
PERYLENE	UG/KG		NR		NR	420	NJ		NR		NR		NR		NR
PYRENE, 1-METHY-	UG/KG		NR		NR	340	NJ		NR		NR		NR		NR
PYRENE, 1-METHYL-	UG/KG		NR		NR		NR		NR		NR		NR		NR
UNKNOWN AMIDE	UG/KG		NR		NR		NR		NR		NR		NR		NR
UNKNOWN CARBOXYLIC ACID	UG/KG	86	J		NR		NR		NR		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR		NR	310	J		NR		NR	95	J
VALENCENE	UG/KG		NR		NR		NR		NR		NR		NR		NR

Miscellaneous Volatiles

		GS11SB		GS13SB		GS14SB		GS15SB		GS16SB		GS18SB		GS19SB	
2 UNKNOWN COMPOUNDS	UG/KG		NR		NR		NR	20	J		NR		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR	8	J		NR		NR		NR		NR

Table 11. Subsurface Soil Miscellaneous Analytical Results.
Page 3 of 3

Miscellaneous Extractables

	Units	GS20SB		GS21SB	
1,2:3,4-DIBENZPYRENE	UG/KG		NR		NR
1,2:7,8-DIBENZPHENANTHRENE	UG/KG		NR		NR
1,2-BENZENEDICARBOXYLIC ACID	UG/KG		NR		NR
10 UNKNOWN COMPOUNDS	UG/KG		NR		NR
11H-BENZO [B] FLUORENE	UG/KG		NR		NR
13 UNKNOWN PAHS	UG/KG		NR		NR
1-PHENANTHRENECARBOXYLIC ACID	UG/KG		NR		NR
2 UNKNOWN COMPOUNDS	UG/KG		NR		NR
2 UNKNOWN OCMPOUNDS	UG/KG		NR		NR
2 UNKNOWN PHTHALATES	UG/KG		NR		NR
2,2'-BINAPHTHALENE	UG/KG		NR		NR
3 UNKNOWN COMPOUNDS	UG/KG		NR		NR
3 UNKNOWN PAHS	UG/KG		NR		NR
3,4-DIHYDROCYCLOPENTA (CD) PYRENE	UG/KG		NR		NR
4 UNKNOWN COMPOUNDS	UG/KG		NR		NR
5 UNKNOWN COMPOUNDS	UG/KG		NR		NR
5,12-NAPHTACENEDIONE	UG/KG		NR		NR
5,12-NAPHTHACENEDIONE	UG/KG		NR		NR
7 UNKNOWN COMPOUNDS	UG/KG		NR		NR
7 UNKNOWN PAHS	UG/KG		NR		NR
7H-BENZ [DE] ANTHRACEN-7-ONE	UG/KG		NR		NR
7H-BENZ [DE] ANTHRACENEDIONE	UG/KG		NR		NR
9,10-ANTHRACENEDIONE	UG/KG		NR		NR
BENZ [A] ANTHRACENE, 8-METHYL-	UG/KG		NR		NR
BENZO [B] NAPHTHO [1,2-D] THIOPHENE	UG/KG		NR		NR
BENZO [B] NAPHTHO [2,3-D] THIOPHENE	UG/KG		NR		NR
BENZO [B] TRIPHENYLENE	UG/KG		NR		NR
BENZO [E] PYRENE	UG/KG		NR		NR
CHRYSENE, 5-METHYL-	UG/KG		NR		NR
CYCLOPENTA (dEF) PHENANTHRENONE	UG/KG		NR		NR
CYCLOPENTA (DEF) PHENANTHRENONE	UG/KG		NR		NR
ELLIPTICINE	UG/KG		NR		NR
NAPHTHO [1,2,3,4-DEF] CHRYSENE	UG/KG		NR		NR
PERYLENE	UG/KG		NR		NR
PYRENE, 1-METHY-	UG/KG		NR		NR
PYRENE, 1-METHYL-	UG/KG		NR		NR
UNKNOWN AMIDE	UG/KG		NR		NR
UNKNOWN CARBOXYLIC ACID	UG/KG		NR		NR
UNKNOWN COMPOUND	UG/KG	130	J	84	J
VALENCENE	UG/KG	120	NJ		NR

Miscellaneous Volatiles

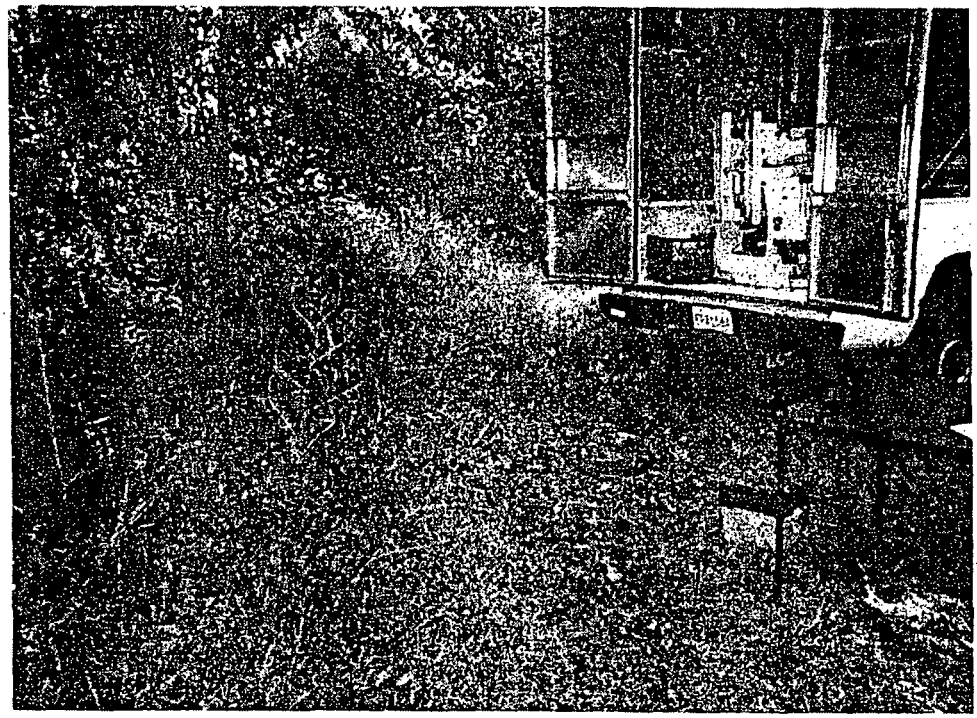
		GS20SB		GS21SB	
2 UNKNOWN COMPOUNDS	UG/KG		NR		NR
UNKNOWN COMPOUND	UG/KG		NR		NR

Data Qualifiers

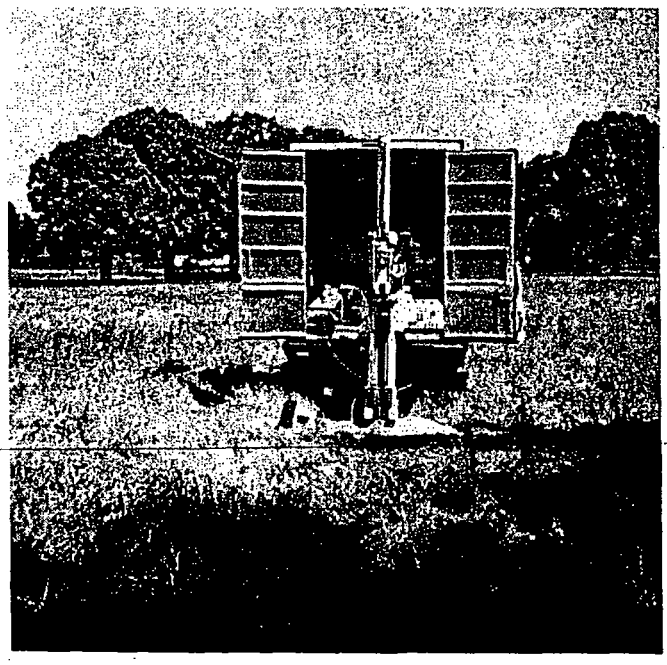
U-Analyte not detected at or above reporting limit. The number is the minimum quantitation limit.
J-Identification of analyte is acceptable; reported value is an estimate.
UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification.
NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to interferences. | A-Analyte analyzed in replicate. Reported value is 'average' of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Appendix C
Site Photographs

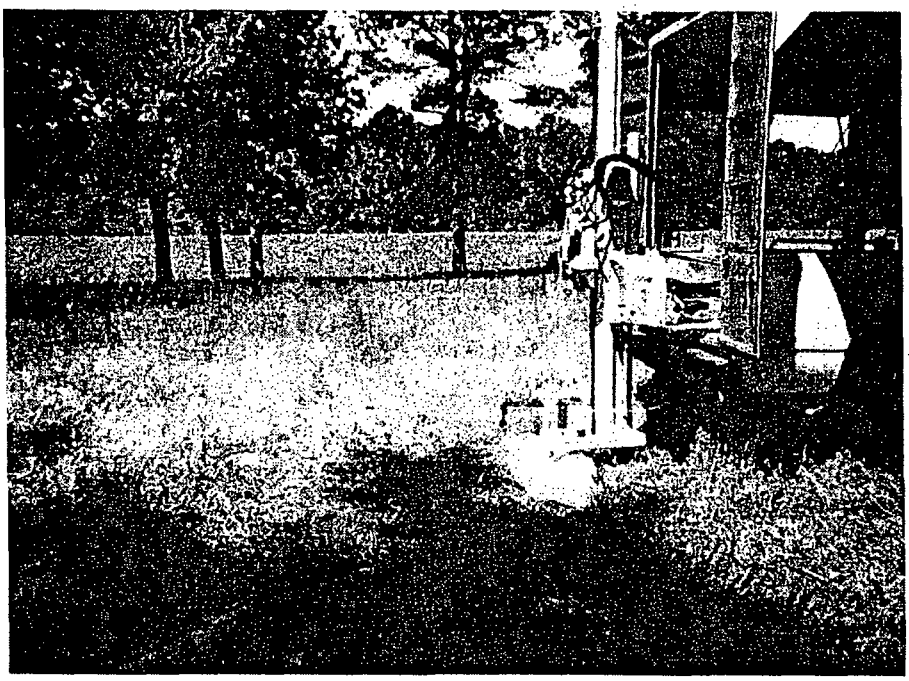
Groundwater



Site of GS-01-SS,SB,GW
(Roll 3, frame 24)

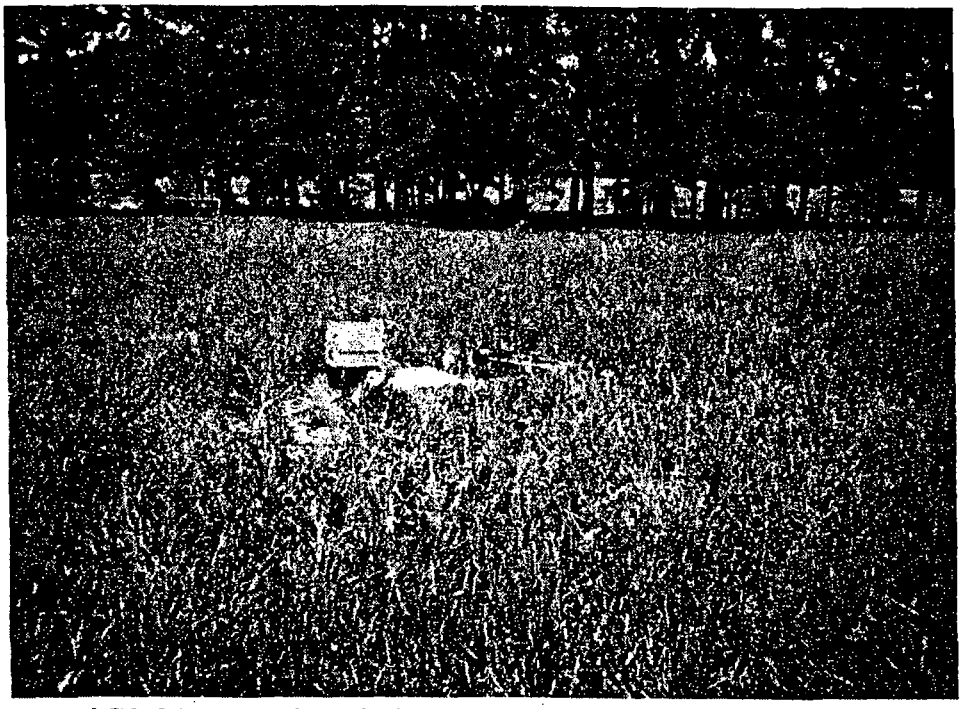


Site of GS-02-GW,SS,SB, facing east
(Roll 3, frame 21)



Site of GS-02-GW, looking north
(Roll 3, frame 22)

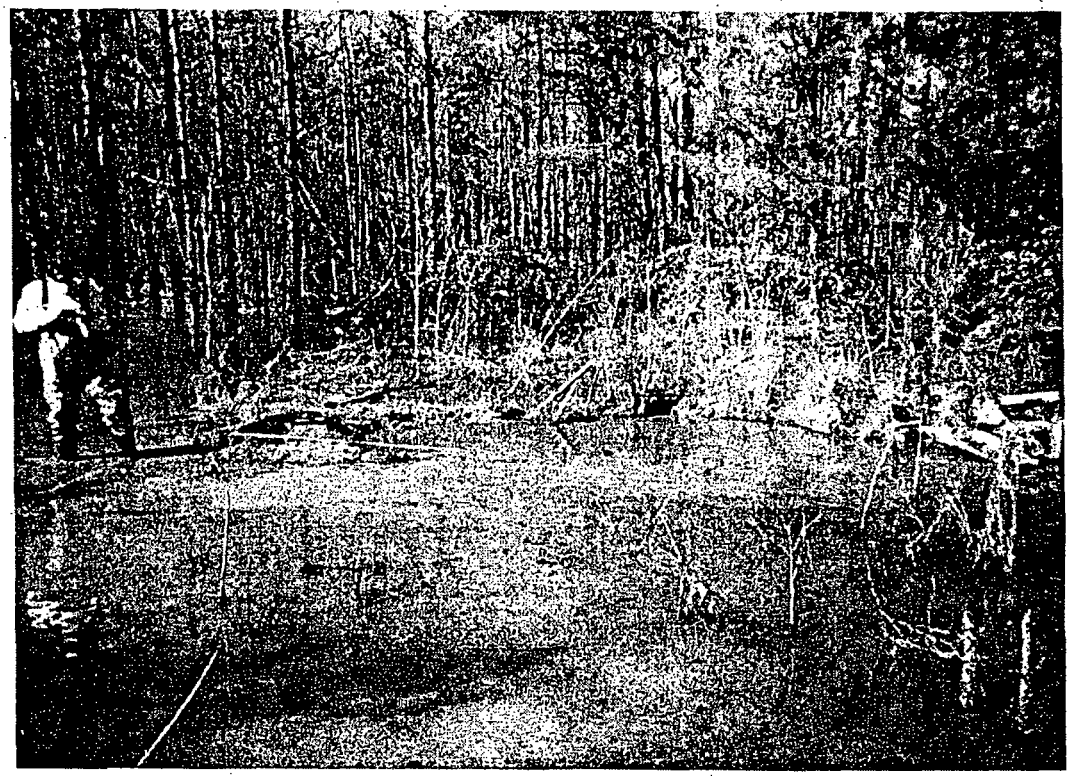
Site of GS-03-GW, edge of woods surrounding Creosote Slough
(Roll 3, frame 20)



Site of GS-04-SS,SB,GW, facing west
(Roll 1, frame 19)

Site of GS-05-GW/SS/SB, facing west
(Roll 3, frame 18)

Sediment

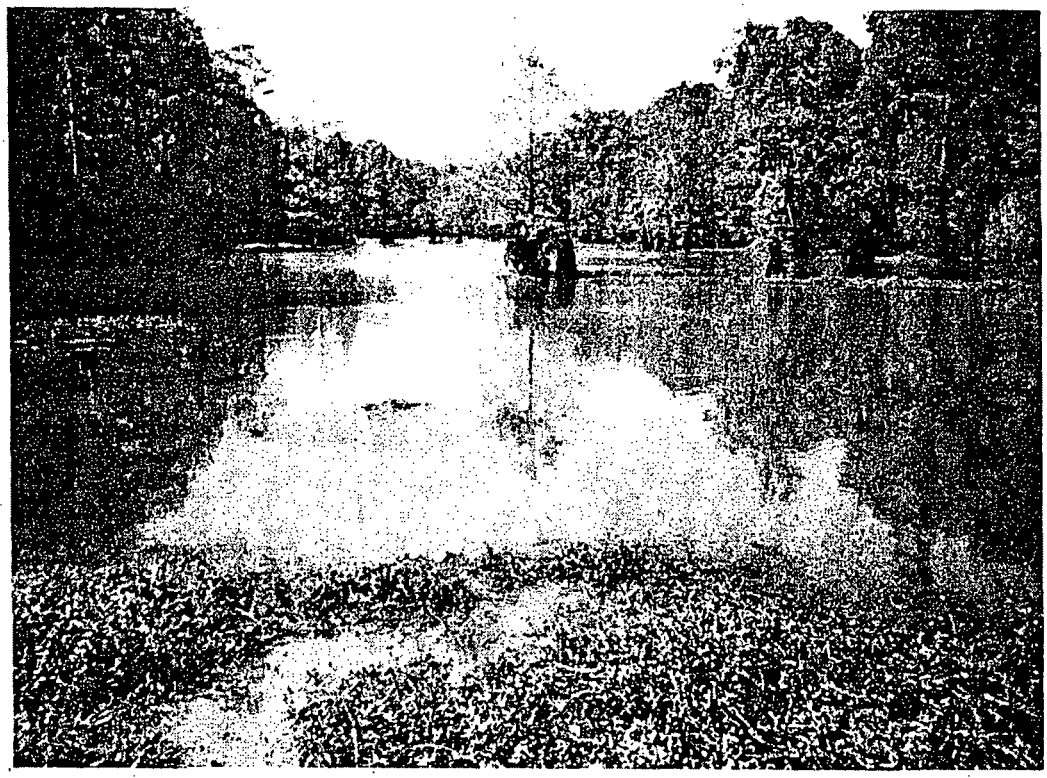


Site of GS-01-SD
(Roll 2, frame 23)

Sample GS-01-SD in pan
(Roll 2, frame 22)

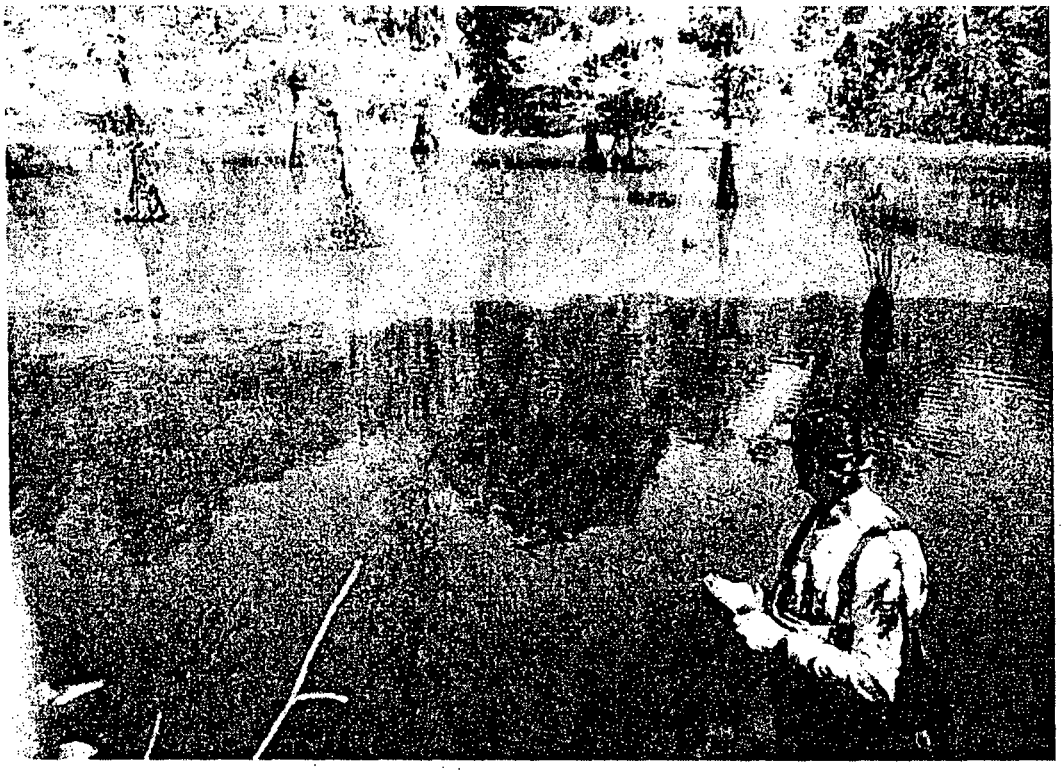
Site of GS-02-SD, facing east
(Roll 2, frame 21)

Sample GS-02-SD in pan
(Roll 2, frame 20)



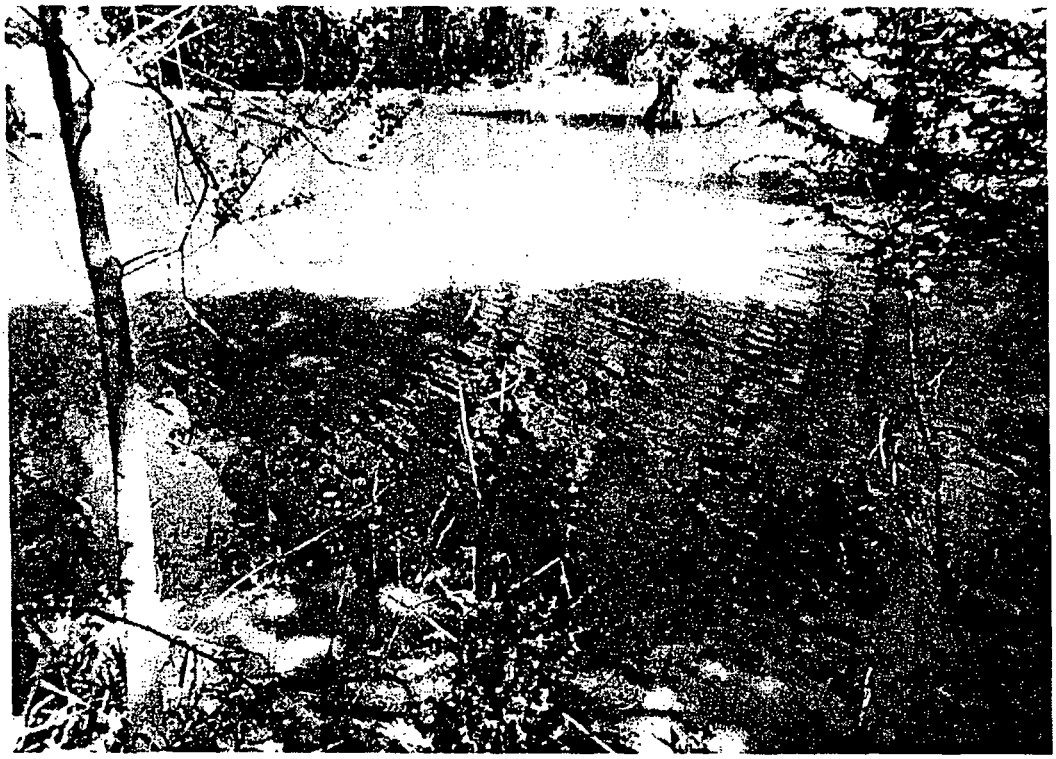
Site of GS-03-SD, facing east
(Roll 2, frame 19)

Sample GS-03-SD in pan
(Roll 2, frame 18)

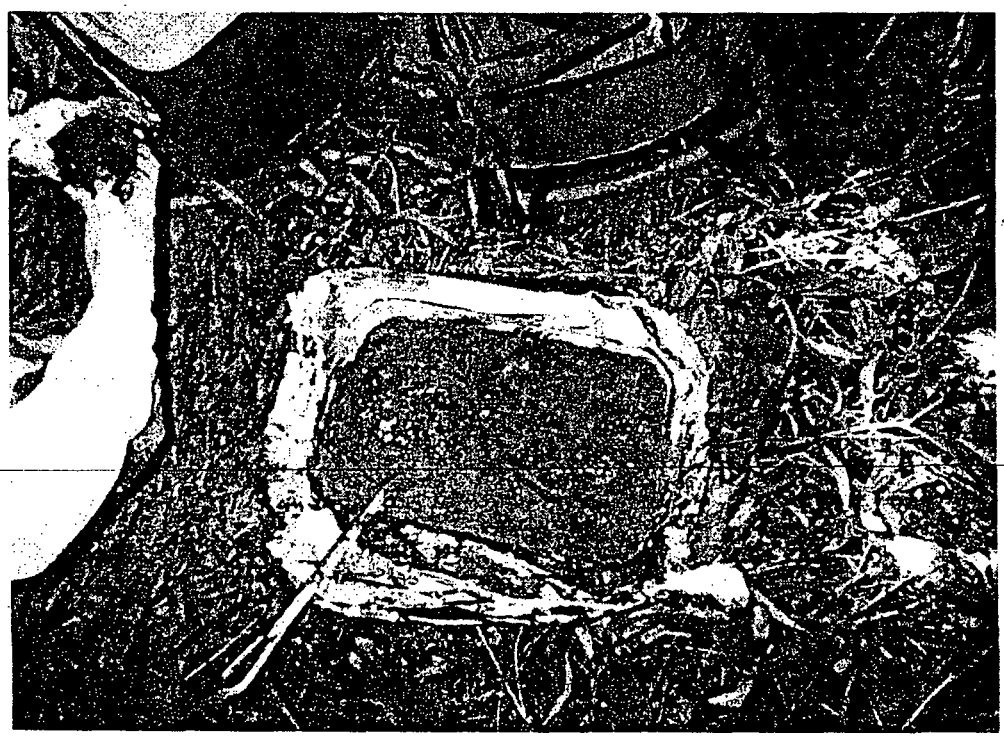


Site of GS-04-SD, facing north
(Roll 2, frame 17)

Sample GS-04-SD in pan
(Roll 2, frame 16)



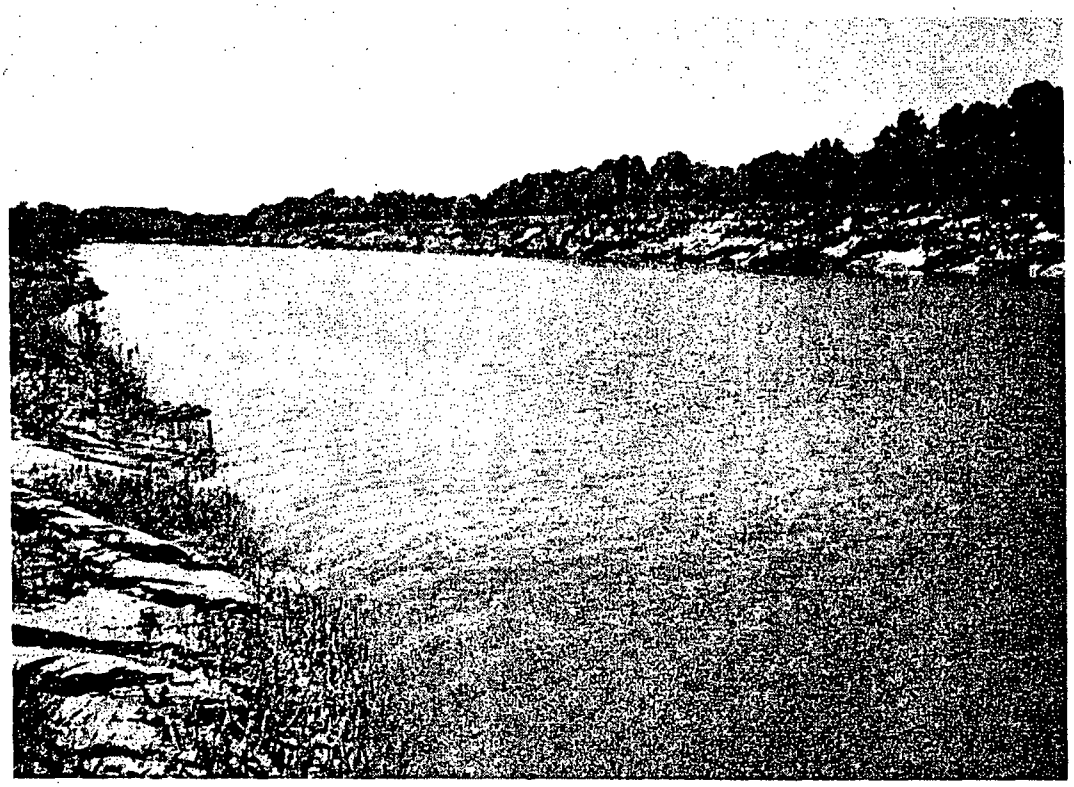
Site of GS-05-SD
(Roll 2, frame 15



Sample GS-05SD in pan
(Roll 2, frame 14)

Site of GS-06-SD
(Roll 2, frame 11)

Sample GS-06-SD in pan
(Roll 2, frame 10)



Site of GS-07-SD
(Roll 2, frame 13)

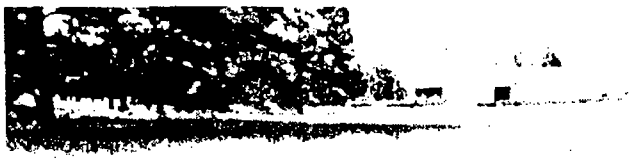
Sample GS-07-SD in pan
(Roll 2, frame 12)

Site of GS-08-SD
(Roll 2, frame 8)

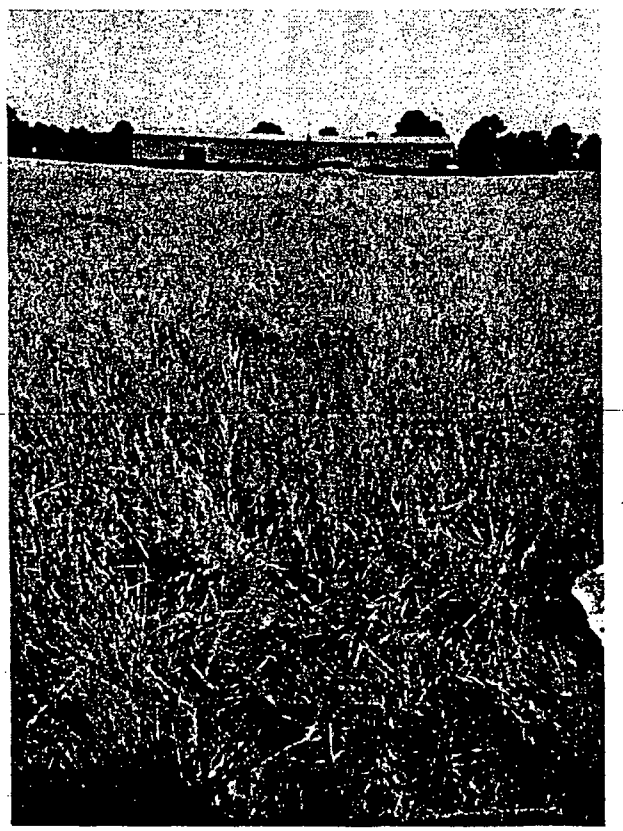
Site of GS-08-SD
(Roll 2, frame 8)

Sample GS-08-SD in pan
(Roll 2, frame 7)

Soil Sample Locations



Site of GS-06-GW,SS,SB, facing north
(Roll 3, frame 24)

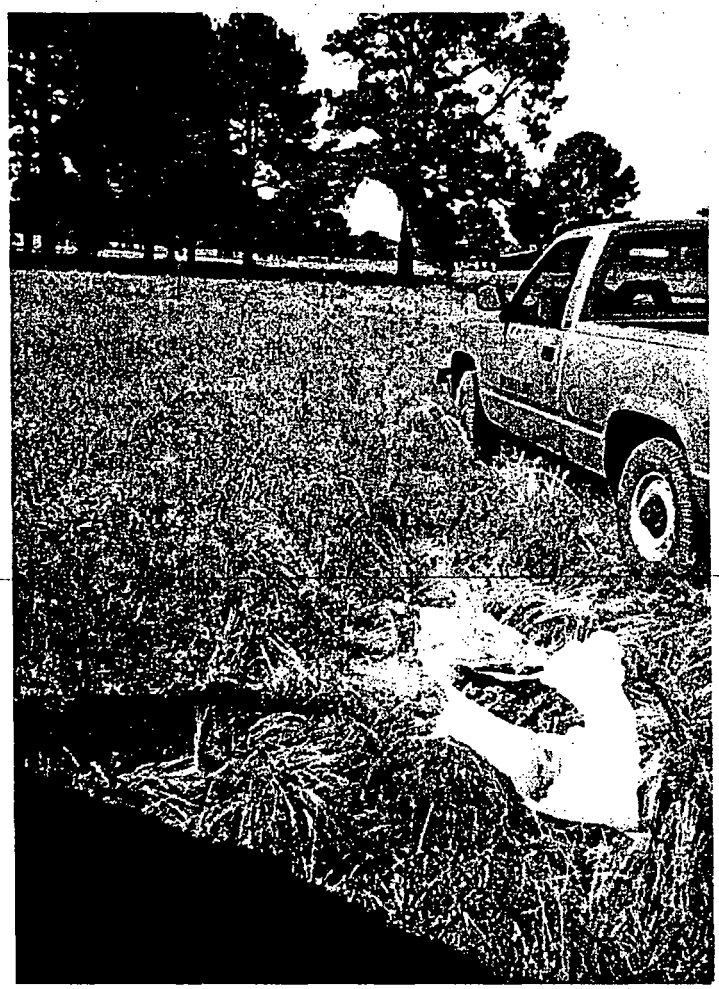


Site of GS-07-SS,SB, facing north
(Roll 3, frame 21)

Site of GS-08-,SS,SB, facing north
(Roll 3, frame 22)

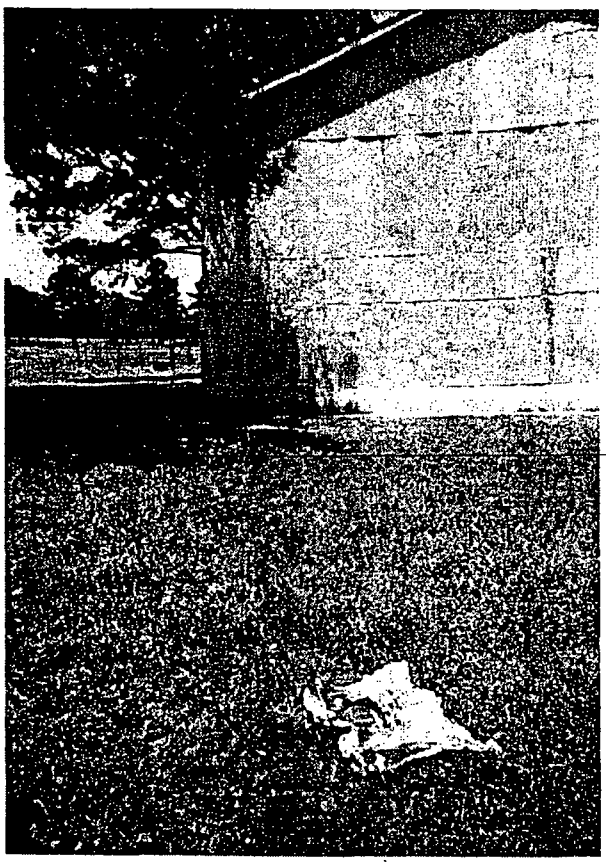
Site of GS-09-,SS,SB, facing north
(Roll 3, frame 25)

Site of GS-10-,SS,SB, facing north
(Roll 3, frame 27)



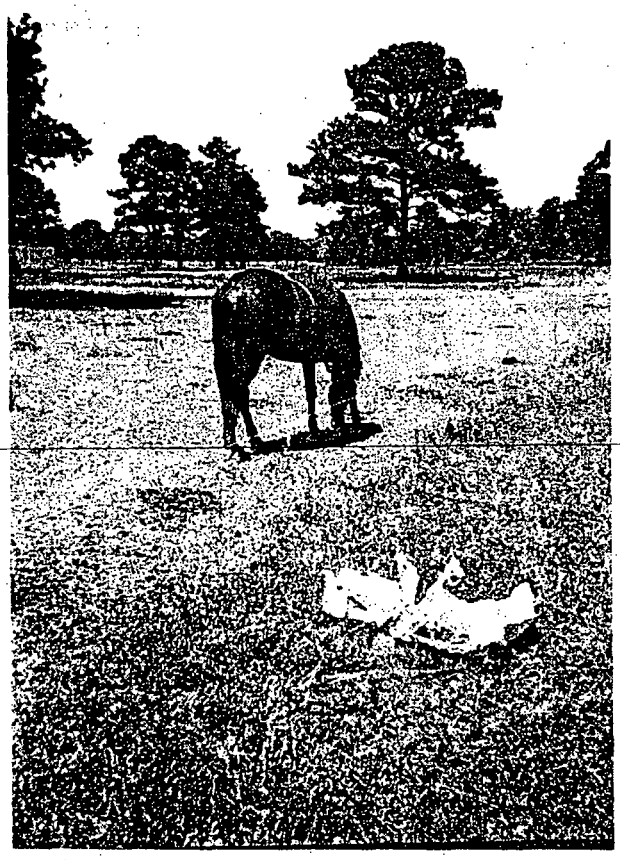
Site of GS-11-,SS,SB, facing north
(Roll 3, frame 26)

Site of GS-12-,SS,SB, facing north
(Roll 3, frame 23)



Site of GS-13-,SS,SB, facing north
(Roll 3, frame 31)

Site of GS-14-,SS,SB, facing north
(Roll 3, frame 28)



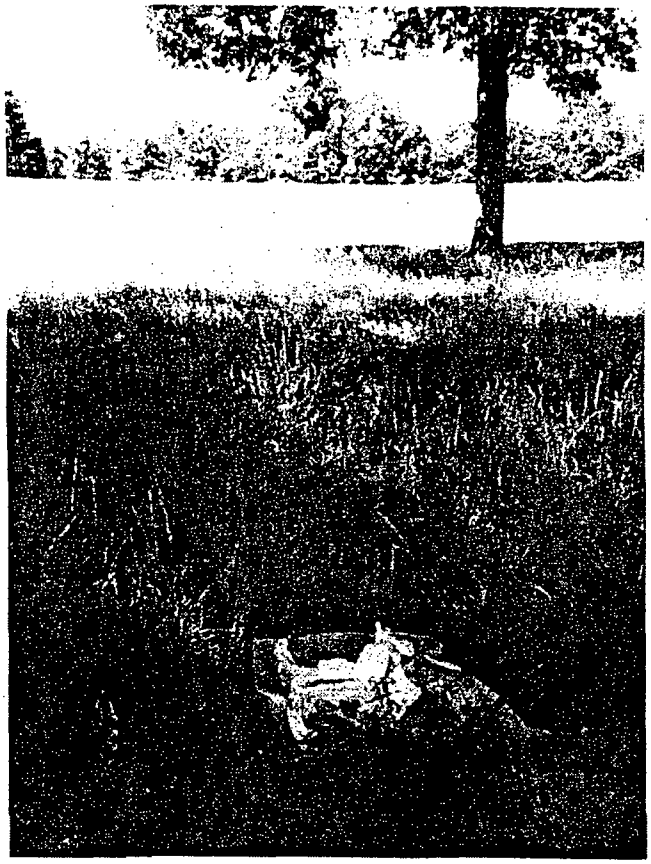
Site of GS-15-,SS,SB, facing north
(Roll 3, frame 30)

Site of GS-16-,SS,SB, facing north
(Roll 3, frame 33)

Site of GS-17-,SS,SB, facing north
(Roll 3, frame 35)

Site of GS-18-,SS,SB, facing north
(Roll 3, frame 37)

Site of GS-19-,SS,SB, facing north
(Roll 3, frame 36)



Site of GS-20-,SS,SB, facing north
(Roll 3, frame 34)

Site of GS-21-,SS,SB, facing north
(Roll 3, frame 32)

Site of GS-23-SS, facing north
(Roll 3, frame 29)

Appendix D
Log Book Photocopies

03-0474 Book 2

4-22-05
DB

GULF STATES
FLOWOOD MS

ONSITE 0715
CLEAR WARM
HELD SAFETY MEETING

THOMAS
BARRIER

COLLECT SOIL SAMPLES FOR VOA, EXTRACTABLES
AND METALS

- WILL COLLECT 3 ENCORE
1 DUP
3 - DUP WHICH INCLUDES
SPLIT FOR OWNER

DEPTH 0-6 -SS
24-36 -SB
AT EACH LOCATION WITH SS AUGER
UNLESS OTHERWISE NOTED.

USED DEET

4-22-02 OL

GS-18-SS N 361188?.48
0-6" E 3623?74.73 OL

TIME 0840
FABRIER COLLECTED
THOMAN MIXED FILLED 3 ENC
GRAY/TAN CLAY 1-2 oz
3-8 oz

GS-18-SB 24-36"
TIME 0850
FABRIER COLLECTED
THOMAN MIXED/FILLED 3-ENC
1-2 oz
GRAY/TAN CLAY MOIST 3-8 oz

PICTURE 1 LOOKING NORTH

4-22 OL

GS-19-SS N 361232?.02
0-6" E 362292.82

TIME 0930
FABRIER COLLECTED
THOMAN MIXED FILLED 3-ENC
DARK BROWN SANDY CLAY 1-2 oz
3-8 oz

GS-19-SB 24-36"
TIME 0935
FABRIER COLLECTED
THOMAN MIXED FILLED 3-ENC
1-2 oz
BROWN SANDY CLAY 3-8 oz

PICTURE 2 LOOKING NORTH

4-22
OB

17-SS 0-6"
TIME 1055
FARRIER COLLECTED
THOMAN MIXED/FILLED 3-ENC
1-2g
~~TIME 1005~~ 3-8g
BROWN SANDY SOIL

17-SB 24-36"
TIME 1020
FARRIER COLLECTED
THOMAN MIXED/FILLED 3-ENC
1-2g
BROWN CLAY-MOIST 3-8g

PICTURE 3 LOOKING NORTH

OB 4-22

20-SS 0-6"
TIME 1045
FARRIER COLLECTED
THOMAN MIXED/FILLED 6-ENC
2-2g
5-8g
20-SD DUP (SAME PAN) OF 20SS

BROWN SOIL

20-SB 24-36"
TIME 1055
FARRIER COLLECTED
THOMAN MIXED/FILLED 3-ENC
1-2g
3-8g
GRAY CLAY MOIST

PICTURE 4 LOOKING NORTH

4-22
DR

16-SS 0-6"
TIME 1130
FARRIER COLLECTED
TAMAN MIXED FILLED 3-ENC
1-2oz
3-8oz

DARK BROWN SOIL

16-SB 24-36"
TIME 1140
FARRIER COLLECTED
TAMAN MIXED FILLED 4-ENC
1-2oz
MS/MSD 3-8oz

GRAY/ORANGE CLAY

PICTURE 5 LOOKING NORTH

4-22
DR

21-SS 0-6"
TIME 1205
FARRIER COLLECTED
TAMAN MIXED/FILLED 3-ENC
1-2oz
3-8oz

DARK BROWN CLAY

21-SB
TIME 1215 24-36"
FARRIER COLLECTED
TAMAN MIXED/FILLED 3-ENC
1-2oz
3-8oz

DR
PICTURE 6 LOOKING NORTH

GRAY/ORANGE CLAY

13 SS
TIME 1315 0-6"
FARRIER COLLECTED
THOMAS MIXED FILLED 3-ENC
1-2g
3-8g

BROWN SOIL

13 SB
TIME 1325 24-36"
FARRIER COLLECTED
THOMAS FILLED/MIXED 3-ENC
1-2g
3-8g
ORANGE CLAY (SANDY)

PICTURE 7 LOOKING NORTH

15-SS 0-6
TIME 1340
FARRIER COLLECTED
THOMAS MIXED/FILLED 3-ENC
1-2g
3-8g

BROWN SOIL

15-SB TIME 1350 24-36"
FARRIER COLLECTED
THOMAS MIXED/FILLED 3-ENC
1-2g
3-8g

BROWN CLAY

PICTURE 8 LOOKING NORTH

4-22 DB

PICTURE 9 - LOCATION 23
LOOKING NORTH
STRAW COLLECTED SAMPLE

~~DS-14-SB~~ 14-55 0-6"
TIME 1440
FARRER COLLECTED
HUMAN MIXED/FILLED 3-ENC
1-2g
3-8g

BROWN SANDY SOIL

DS 14-SB 6-12"
TIME 1450
FARRIER COLLECTED
HUMAN MIXED/FILLED 3-ENC
1-2g
3-8g

BROWN SANDY SOIL
PICTURE 10 LOOKING NORTH

4-22 DB

10-55 0-6"
TIME 1505
FARRER COLLECTED
HUMAN MIXED/FILLED 3-ENC
1-2g
3-8g

BROWN SANDY SOIL

10-SB 6-12"
TIME 1515
FARRER COLLECTED
HUMAN MIXED/FILLED 3-ENC
1-2g
3-8g

BROWN SANDY SOIL

PICTURE 11 LOOKING NORTH

4-22 DB

11-S5 0-6"
TIME
FARRIER COLLECTED
THOMAN ~~[illegible]~~ MIXED/FILLED 3-ENC
1600 1-2g
3-8g

BROWN SANDY SOIL

11-SB 24-36"
TIME
FARRIER COLLECTED
THOMAN MIXED/FILLED 3-ENC
1610 1-2g
3-8g

BROWN CLAY

PICTURE 12 LOOKING NORTH

4-22 DB

09-S5 0-6
TIME 1615
FARRIER COLLECTED
THOMAN MIXED/FILLED 3-ENC
1-2g
BROWN CLAY-WET 3-8g.

09-SB 24-36
TIME 1625
FARRIER COLLECTED
THOMAN MIXED/FILLED 3-ENC
1-2g
3-8g

BROWN CLAY

PICTURE 13 LOOKING NORTH

--2

6-SS 0-6" TIME 1640
FARRIER COLLECTED
THOMAN MIXED FILLED 3-ENC
1-2g
BROWN CLAY MOIST 3-4g

6-SB 24-36" TIME 1650
FARRIER COLLECTED
THOMAN MIXED FILLED 3-ENC
1-2g
3-8g
BROWN CLAY

PICTURE 14 LOOKING NORTH

HELD SAFETY MEETING . ON SITE 0710
P. CLOUDY COOL 4-23-03
45 - DEGS

12-SS 0-6"
TIME 0740
FARRIER COLLECTED
THOMAN MIXED/FILLED 3-ENC
1-2g
3-8g

BROWN SANDY SOIL

12-SB 24-36"
TIME 0750
FARRIER COLLECTED
THOMAN MIXED/FILLED 3-ENC
1-2g
3-8g

GRAY CLAY

PICTURE 15 LOOKING NORTH

4-23 DB

8-55 0-6"
TIME 0810
FARMER COLLECTED
BROWN MIXED/FILLED 3-ENC
1-2g
3-8g

BROWN SOIL

8-5B 24-36"
TIME 0820
FARMER COLLECTED
BROWN MIXED/FILLED 3-ENC
1-2g
3-8g

BROWN SANDY CLAY - MOIST

PICTURE 16 LOOKING NW

4-23 DB

DB
7-7-5 0-6"
TIME 0835
FARMER COLLECTED
BROWN MIXED/FILLED 3-ENC
1-2g
3-8g

BROWN SOIL

7-5B 24-36"
TIME 0845
FARMER COLLECTED
BROWN MIXED/FILLED 3-ENC
1-2g
3-8g

BROWN GRAY CLAY

PICTURE 17 LOOKING NORTH

4-23 DM

05-S5 0-6'
DATE 0915
SAMPLES COLLECTED
BROWN MIXED/FILLED

3-ENC
1-2g
3-8g

BROWN SANDY SOIL

05-SB 2K-36'
DATE 0925
SAMPLES COLLECTED
BROWN MIXED/FILLED

3-ENC
1-2g
3-8g

GREY CLAY - WET

PICMLE 18 LOOKING NORTH

DM 4-23

1625 Flowood Drive
Flowood, MS

USEPA
980 College Station Rd
Athens, GA 30605

Brian Striggow - project leader

Week of April 20, 2003

Bobby Lewis

Tim Simpson

4-22-2003

Start Time 7:00

- Safety meeting held. Tim Simpson is SSO

Simpson / Lewis - sediment sampling
Thomson / Farrier - soil
Simmons / Allen - ground water
Crowe - Forms
Staggow - Project Leader

Site Recon done on ~~4-20-03~~ 4-21-2003 by Staggow, Lewis, Simpson + Farrier.

Departed Athens via GOV to Site on 4/21/03

- Sunny, clear, warm

(2)

4-22-2003

GSO1SD - Background sample

Sampler - B Lewis Containers received/mixed by Simpson
Sample time - 900
Samples collected - TOC
- VOCs (Not mixed), % Moisture
- SVOCs/PEST/PAH
- metals

sample - Fine clay - gray
- Coarse organic matter
- pine straw + sticks Removed from sample

Photo 1 + 2 - Large Cottonmouth
- B Lewis, 904

Photo 3 - Background location in Bayou
905, Lewis, Facing SW (230°)

Photo 4 - Sample in pan
905, Lewis

gps data collected By B. Lewis

Location - Jackson Prep Bayou
Left of "pathway"

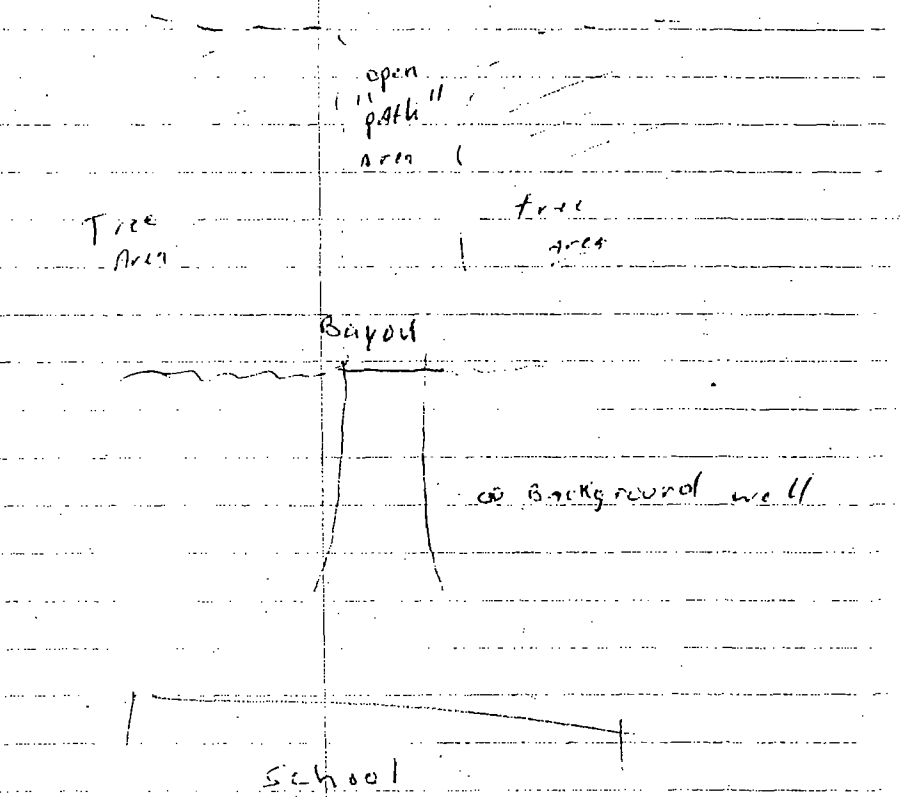
Samples iced in cooler.

(3)

4/22/03

Critter list - mosquito fish, Canadian Goose, crow, cricket Frog, Cottonmouth

Sample chain of custody maintained
Samples collected using a stainless steel scoop, spoon + glass pan - VOCs collected directly into an Encore Sampler



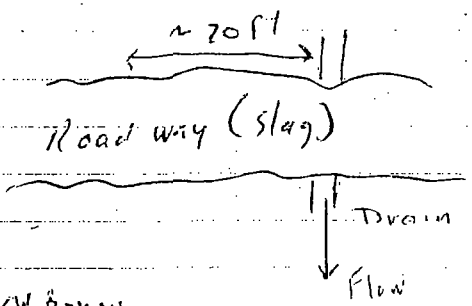
4/22/2003

GS02 SD

sampler - B Lewis
Sample time - 950
Samples - TOC, metals, SVOC/Pest/PAH, % moisture
stainless steel sampling equipment + glass pan used
Sample - gray/brown - silty clay mix
some organic material Root mass
Removed, Approx. 4" deep where
sample collected. slight sheen seen
in sample pan.
photo 5 - B Lewis 955 - Facing west, NW 310°
photo 6 - B Lewis 955 Sample 02

Bayou 02 location is SW of site
- Location about 8 ft From Bank
gps coordinate collected by B Lewis
Approx 20 ft From drainage

NW Bayou



4/22/03

GS03 SD

Sampler - B Lewis
Sample time - 1030
collected - TOC, SVOC, Texture, VOC,
Pest/PCB/PAH
Stainless steel scoop, spoon + glass pan used
brown/gray sample - heavy w/organic (coarse)
material Root mass

Note - sheen SEEN. Creosote smell
detected

photo 7 - sample location 945
- Facing East 130°

photo 8 - sample 03, Lewis, 945

gps data collected by B. Lewis

Location From non-vegetative area
Emergent Vegetation near bank

(6)

4/22/03

GS04SD

sampler - Lewis
sample time - 1155
Samples - VOC, % moisture, SVOC/Pest/PAH, met, VOC
NO TOC

photo 9 Sampling location facing N
" 10 Sediment Sample

Sediment sample fine green/black grayish brown

Photos By Bobby Lewis @ 1140

Stainless steel scoop/spoon used. Mixed in glass pan

(7)

4/22/0

GS 05SD

Sampler - Lewis
Sample time - 1215
Samples - TOC, % moisture, VOC
SVOC/PEST/PAH/PCB, metals

photo 11 Sampling location
" 12 Sediment Sample

Sample was grayish brown muck

Location - Bayou, just upstream of Pearl River

Photos by Bobby Lewis at 1220

stainless steel scoop/spoon used to collect sample. Mixed in glass pan

(8)

4/22/03

GS07SD

sampler – B. Lewis
sample time – ~~12:30~~ RK 1245
samples – ~~TOC~~ RK, VOC, % moisture, metals
SVOC / Pest / PAH

Location – Pearl River, downstream of Bayou discharge

Sample was gray sand
Fine – med sand

photo	13	Location	– Lewis	1248
"	14	Sample	– Lewis	1248

Stainless steel scoop/spoon used
Mixed in glass pan.

glass 8-oz jars used for All samples except % moisture ~~(24~~ B 4/21
(2 oz glass) + Encores (for VOCs)

(9)

4/22/2003

GS 08SD Prairie Branch

Sampler – B Lewis
sample time – 1550
samples – TOC, % moisture, VOCs, SVOC, met

photo	18	Location
"	19	Sample

Sediment was fine brown sand
Prairie creek just had sandy shoals along its length
No organic muck was encountered

VOCs directly into Encores
Collected w/ stainless steel scoop
mixed in glass pan

photo	20	Banded water snake
"	21	spring in creek

4/22/2003

LGS06SD
Pearl River location, upstream of Prairie Branch
Collected Sample 1515
Collected By Lewis
Collected 3 Encore, 3 8oz glass E/M/TOC

photo 15 Location 1523
photo 16 Sample 1529

Sediment was fine to medium coarse sand.
The while river was sandy
no organic muck observed

Photo 17, Lewis, @1530
- Live mussels in shallows along River. Mosquito fish identified. Other large fish seen hitting surface.

collected w/s.steel Auger
mixed in glass pan w/s.steel spoon

VOCs - directly into Encore (no mixing)

4/22/03

~~GS0~~ TB 4/21/03 GS24SS

0-6" surface soil sample
collected w/hand auger (s.steel)
mixed in glass pan w/s.steel spoon

sampler -
sample time - 1635
collected - metals, SVOCs/Pest/PAH, % moisture
VOCs
collected 1 Extra 8 oz to split

photo 22 Location by Lewis
23 Sample by Lewis

Soil was dark brown organic rich root matter

Collected 2 6" Augers side by side

TB
4/22/03

GS03 4/23/13

Surface Soil 55
0-6"
Collection Time - 740
By B Lewis
Samples collected - VOC (9 encores), % moisture
MS/MSD - SVOC/PAH/Pest, met
- Extra 8 oz for split
Brown/gray (w/some orange) clay. Some organic material (Black material) present
gps data by Bobby Lewis

Subsurface soil
sample - B Lewis
depth - 12-18", due to water we sampled at 12-18"
Sample time - 755
collected - VOC, SVOC/PAH/Pest
metals, % moisture
Extra 8oz for split
Brown clay

location - near well 3 on edge of creosote slough

photo 24 by Lewis @ 812 Facing south Sample location 03

GS04 4/23/13

Surface soil - 0-6"
Sampler B Lewis
Sample time - 0930
collected - VOC, % moisture, Metals, SVOC/Pest/PAH
also collected an extra 8oz for split
gray/brown clay

Subsurface soil
24-36"
sample time 840
sampler - Simpson
sticky gray/brown clay. Some orange
collected - SVOC/PAH/Pest, met, VOC, % moisture, extra 8oz
photo 25, camera 2 @ 855 by Lewis
of location, facing east

gps data collected by Bobby Lewis

sampled w/stainless steel hand auger

(14)

4/23/03

1045 - B Lewis / T. Simpson
Departed to Sanford site

Note: All photos taken with camera Two

(15)

4/23/2003

END

03-0474 Book 4

Crew: Simmons / Allen

Photograph Log Camera #3

1. GS-01-SS|SB locations
2. GS-01-SS|SB locations w/ Geoprobe in background
3. GS-01-GW well purging
4. GS-02-SS|SB|GW looking North
5. " looking East
6. GS-03-GW looking West
7. GS-04-GW looking West
8. GS-05-GW looking West
9. Geoprobe rod extraction @ Sanford site
10. Geoprobe rod extraction @ Sanford site

0830 Arrived at Jackson Preparatory School property for background sample GS-01.

0900 Collected 01-SS @ 0'-6"
9 Encores (MS|MSO)
1 2oz
2 5oz
Brownish red sandy clay

0915 Collected GS-01-SB @ 24"-36"
3 Encores
1 2oz
2 5oz
Brownish red sandy clay, more moist & tackier than surface sample
Location moved 12" due to obstruction.

H2O Instrument calibration

Hach 2100P Turbidimeter #9

		Std values
low std =	4.53	4.78
mid std =	56.4	56.4
high std =	532	530

Orion 230A pH #6

Self test - OK

7 std = 7.08 mV

4 std = 4.01

slope = 101.5

Orion 140 Conductivity #710151

467 =	46.7
445 =	427

GS-01-GW well put in by Geoprobe

Total well depth 20.0' Screen @ 16'-20'

Depth to H2O 8.6' (from ground level)

11.4'

1000 Began purge of well

Time	pH	°C	Cond µS	NTU
1003	5.4+	18.6	251	—
1010	5.51	18.3	214	344
1016	5.58	18.2	214	42.8
1026	5.66	18.2	213	13.3
1032	5.70	18.2	215	8.53
1039	—	—	—	6.24
1042	Began collecting metals, but turbidity went back up to >1000 NTU. Continuing purge.			
1051	—	—	—	187
1052		18.4	218	30.0
1057	—	—	—	6.69
1100	5.41	18.5	218	5.97
1105	Collected water sample 8 1L amber (MS/MSD) 2 1L poly " 6 40ml "			

Sampled metals thru pump.

A

GS-02-SS

1313 Collected sample from 0" - 6".
3 Encores
1 2oz
3 8oz (1 for property owner)
Brown organic soil, flood plain.

1334 Collected GS-02-SB from 24" - 36"
3 Encores
1 2oz
3 8oz (1 for owner)
Tan clay soil

1350 Began well installation for GS-02-GW with Geoprobe
Total depth 20.0' Screen @ 16'-20'

1405 Began purge

Time	pH	°C	Cond	NTU
1410	5.35	19.1	750	—
1420	4.89	18.4	726	135
1430	4.91	18.4	722	17.2
1440	4.54	18.5	726	5.97
1450	4.95	18.4	724	3.70

1455 Sampled well GS-02-GW
Turbidity increased, purged more for metals sample
1520 — — — 8.23

1642 - Collected GS-22-SS from 0"-6"
Tan sandy clay

4/23/03 GS-03-GW location

0735 Instrument calibration

Hach 2100P Turbidimeter #9	Std values
low std = 4.85	4.78
mid std = 56.7	56.4
high std = 532	530

Orion 230A pH #6
7 std = 7.04
4 std = 4.00
slope = 102.6
10 std check = 10.13

Orion 110 Conductivity #710151
46.7 = 47.0
445 = 431

1600 Post calibration check

Hach 2100P #9
low std = 4.79
mid std = 56.3
high std = 528

Orion 230A pH #6
4 = 4.4
7 = 7.2

Orion 110 Conductivity

0740 Began installation of GS-03-GW with Geoprobe

Total depth 20' Screen @ 16'-20'
Depth to H_2O ~ 7' below ground surface

0800 Started purge

Time	pH	°C	Cond µS	NTU	
0802	6.81	17.7	~~397~~ 405	—	initial
0807	—	—	—	E3	
0812	5.89	17.5	186	>1000	
0822	5.92	17.4	181	274	
0832	5.93	17.5	181	126	
0842	5.93	17.4	180	71.1	
0852	—	—	—	55.5	
0857	—	—	—	49.0	
0907	—	—	—	31.9	
0922		17.5	180	19.7	
0932	—	—	—	14.4	
0942	—	—	—	12.2	
0947	—	—	—	10.2	
0952	—	—	—	9.84	

0955 Collected sample GS-03-GW

GS-04-GW
Total depth 20' Screen @ 16'-20'

1045 Began purge of GS-04-GW

Time	pH	°C	Cond	NTU	
1045	6.1+	18.2	156	—	initial
11:10	5.86	17.9	60	15.4	
11:25	5.91	18.2	58	15.2	
11:40	5.99	18.5	59	14.6	
12:30	5.68	19.1	61	10.7	
12:45	6.00	19.0	60	11.7	
13:00	5.77	19.0	59	11.0	
13:15	5.81	18.9	59	11.0	

1320 Collected sample GS-04-GW

GS-05-GW
Total depth

1100 Began purge of GS-05-GW

Time	pH	°C	Cond	NTU	
1102	—	17.5	696	—	initial
11:12	5.39	17.6	595	37.6	
1122	5.43	17.6	603	16.1	
1132	5.53	17.6	605	8.69	
1142	5.32	17.6	608	6.23	

1145 Collected sample 05-GW

Appendix E
Laboratory Data Sheets

EPA USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31635 **R**
DAS No:

Region:	4
Project Code:	03-0474
Account Code:	50102D04ZZQB00
CERCLIS ID:	
Spill ID:	
Site Name/State:	Gulf States Creosoting/MS
Project Leader:	Brian Striggow
Action:	Screening Site Investigation
Sampling Co:	USEPA SESD

Date Shipped:	4/22/03
Carrier Name:	FedEx
Airbill:	836362682006
Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1			
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XR4	Sediment/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-01-SD	S: 4/22/03	9:00	MD1XR4	--
D1XR5	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-18-SB	S: 4/22/03	8:50	MD1XR5	--
D1XR6	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-18-SS	S: 4/22/03	8:40	MD1XR6	--
D1XR7	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-19-SB	S: 4/22/03	9:35	MD1XR7	--
D1XR8	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-19-SS	S: 4/22/03	9:30	MD1XR8	--
D1XR9	Sediment/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-02-SD	S: 4/22/03	9:50	MD1XR9	--
D1XS0	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-17-SS	S: 4/22/03	10:05	MD1XS0	--
D1XS1	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-17-SB	S: 4/22/03	10:20	MD1XS1	--
D1XS2	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-20-SS	S: 4/22/03	10:45	MD1XS2	--
D1XS3	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-20-SB	S: 4/22/03	10:55	MD1XS3	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	D1XS7, D1XT2		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

MOICA = CLP %Moisture/Calcareous (soil), VOA-s = CLP TCL Volatiles (soil)

TR Number: 4-252433676-042203-0001

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31635 **R**
DAS No:

Region:	4	Date Shipped:	4/22/03	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		Carrier Name:	FedEx		
Account Code:	03-0474 50102D04ZZQB00	Airbill:	836362682006	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
CERCLIS ID:		Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	1	
Spill ID:				2	
Site Name/State:	Gulf States Creosoting/MS			3	
Project Leader:	Brian Striggow			4	
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XS4	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-20-SD	S: 4/22/03	10:45	MD1XS4	--
D1XS5	Sediment/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-03-SD	S: 4/22/03	10:30	MD1XS5	--
D1XS6	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-16-SS	S: 4/22/03	11:30	MD1XS6	--
D1XS7	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (10)	GS-16-SB	S: 4/22/03	11:40	MD1XS7	--
D1XS8	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-21-SS	S: 4/22/03	12:05	MD1XS8	--
D1XS9	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-21-SB	S: 4/22/03	12:15	MD1XS9	--
D1XT1	Subsurface Soil (24"-36")/ Kevin Simmons	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-01-SB	S: 4/22/03	9:15	MD1XT1	--
D1XT2	Surface Soil (0"-6")/ Kevin Simmons	L/G	MOICA (21), VOA-s (21)	(Ice Only) (10)	GS-01-SS	S: 4/22/03	9:00	MD1XT2	--
D1XT3	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-13-SS	S: 4/22/03	13:15	MD1XT3	--
D1XT4	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-13-SB	S: 4/22/03	13:25	MD1XT4	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	D1XS7, D1XT2		
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?**

MOICA = CLP %Moisture/Calcareous (soil), VOA-s = CLP TCL Volatiles (soil)

TR Number: 4-252433676-042203-0001

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31635 **R**
DAS No:

Region:	4	Date Shipped:	4/22/03
Project Code:		Carrier Name:	FedEx
Account Code:	03-0474 50102D04ZZQB00	Airbill:	836362682006
CERCLIS ID:		Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100
Spill ID:			
Site Name/State:	Gulf States Creosoting/MS		
Project Leader:	Brian Striggow		
Action:	Screening Site Investigation		
Sampling Co:	USEPA SESD		

Chain of Custody Record		Sampler Signature:	
Relinquished By	(Date / Time)	Received By	(Date / Time)
1			
2			
3			
4			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XT5	Sediment/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-04-SD	S: 4/22/03	11:35	MD1XT5	--
D1XT6	Sediment/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-05-SD	S: 4/22/03	12:15	MD1XT6	--
D1XT7	Sediment/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-07-SD	S: 4/22/03	12:45	MD1XT7	--
D1XT8	Surface Soil (0"-6")/ Brian Striggow	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-23-SS	S: 4/22/03	13:55	MD1XT8	--
D1XT9	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-15-SS	S: 4/22/03	13:40	MD1XT9	--
D1XW0	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-15-SB	S: 4/22/03	13:50	MD1XW0	--
D1XW1	Surface Soil (0"-6")/ Kevin Simmons	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-02-SS	S: 4/22/03	13:13	MD1XW1	--
D1XW2	Subsurface Soil (24"-36")/ Kevin Simmons	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-02-SB	S: 4/22/03	13:34	MD1XW2	--
D1XW3	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-14-SS	S: 4/22/03	14:40	MD1XW3	--
D1XW4	Subsurface Soil (6"-12")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-14-SB	S: 4/22/03	14:50	MD1XW4	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	D1XS7, D1XT2		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

MOICA = CLP %Moisture/Calcareous (soil), VOA-s = CLP TCL Volatiles (soil)

TR Number: 4-252433676-042203-0001

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31635 **R**
DAS No:

Region:	4
Project Code:	03-0474
Account Code:	50102D04ZZQB00
CERCLIS ID:	
Spill ID:	
Site Name/State:	Gulf States Creosoting/MS
Project Leader:	Brian Striggow
Action:	Screening Site Investigation
Sampling Co:	USEPA SESD

Date Shipped:	4/22/03
Carrier Name:	FedEx
Airbill:	836362682006
Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1			
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XW5	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-10-SS	S: 4/22/03	15:05	MD1XW5	--
D1XW6	Subsurface Soil (6"-12")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-10-SB	S: 4/22/03	15:15	MD1XW6	--
D1XW8	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-11-SS	S: 4/22/03	16:00	MD1XW8	--
D1XW9	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-11-SB	S: 4/22/03	16:10	MD1XW9	--
D1XX0	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-09-SS	S: 4/22/03	16:15	MD1XX0	--
D1XX1	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-09-SB	S: 4/22/03	16:25	MD1XX1	--
D1XX2	Sediment/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-06-SD	S: 4/22/03	15:15	MD1XX2	--
D1XX3	Sediment/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-08-SD	S: 4/22/03	15:50	MD1XX3	--
D1XX4	Surface Soil (0"-6")/ Kevin Simmons	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-22-SS	S: 4/22/03	16:42	MD1XX4	--
D1XX5	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-06-SS	S: 4/22/03	16:40	MD1XX5	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	D1XS7, D1XT2		

Analysis Key: Concentration: L = Low, M = Low/Medium, H = High Type/Designate: Composite = C, Grab = G Shipment Iced? _____

MOICA = CLP %Moisture/Calcareous (soil), VOA-s = CLP TCL Volatiles (soil)

TR Number: 4-252433676-042203-0001

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Organic Traffic Report & Chain of Custody Record

Case No: 31635
DAS No:

Region:	4	Date Shipped:	4/22/03
Project Code:	03-0474	Carrier Name:	FedEx
Account Code:	50102D04ZZQB00	Airbill:	836362682006
CERCLIS ID:		Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100
Spill ID:			
Site Name/State:	Gulf States Creosoting/MS		
Project Leader:	Brian Striggow		
Action:	Screening Site Investigation		
Sampling Co:	USEPA SESD		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1			
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XX6	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-06-SB	S: 4/22/03	16:50	MD1XX6	--
D1XX7	Surface Soil (0"-6")/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-24-SS	S: 4/22/03	16:35	MD1XX7	--
D1XX8	Trip Blank - Soil/ Brian Striggow	L/G	VOA-s (21)	(Ice Only) (2)	GS-01-TB	S: 4/22/03	17:54		Field QC

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	D1XS7, D1XT2		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

MOICA = CLP %Moisture/Calcareous (soil), VOA-s = CLP TCL Volatiles (soil)

TR Number: 4-252433676-042203-0001

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FedEx Express **USA Airbill** FedEx Tracking Number 836362682006

Form I.D. No. 0200

1 From Please print and press hard.

Date 4/22/03 Sender's FedEx Account Number 2148-8184-5

Sender's Name Brian Stryger Phone (706) 340-6352

Company USEPA SESD

Address 980 College Station Rd. Dept/Floor/Suite/Room

City Athens State GA ZIP 30605

2 Your Internal Billing Reference First 24 characters will appear on invoice OPTIONAL

3 To

Recipient's Name Sample Custodian Phone (919) 379-4100

Company Liberty Analytical

Address 501 Madison Avenue

To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address Dept/Floor/Suite/Room

City Cary State NC ZIP 27513

Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

Questions? Visit our Web site at fedex.com
or call 1.800.Go.FedEx® 800.463.3339.

4a Express Package Service *Packages up to 150 lbs.* Delivery commitment may be later in some areas

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day — Second business day
- [ ] FedEx Express Saver — Third business day

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation:

5 Packaging * Declared value limit $500

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [X] Other

6 Special Handling Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — NOT Available for FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous Goods (including Dry Ice) cannot be shipped in FedEx packaging

- [ ] Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [X] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No. / Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value†
2	80	$ .00

†Our liability is limited to $100 unless you declare a higher value. See back for details. FedEx Use Only

8 Release Signature Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

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- Email Track
- FedEx InSight
- Custom Critical
- Cargo Track
- FedEx Freight

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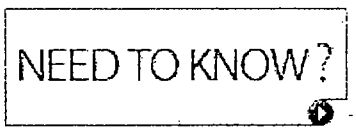
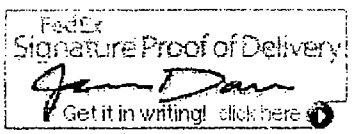
- My FedEx
- FedEx Wireless Solutions
- FedEx Address Checker





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Detailed Results

Quick Help

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Tracking Number	836362682006
Reference Number	
Ship Date	04/22/2003
Delivered To	Ship'g/Receiv'g
Delivery Location	CARY NC
Delivery Date/Time	04/23/2003 08:47
Signed For By	E.SCHILLER
Service Type	Priority Overnight
Master Tracking Number	836362682006
Total Pieces	1 of 2

Tracking Options
- Obtain a Signature Proof of Delivery
- Email these tracking results to one or more recipients
- Return to Multiple Piece Shipments
- Return to Summary Results
- Track More Shipments

Scan Activity	Date/Time	Comments
Delivered/CARY NC	04/23/2003 08:47	
On FedEx vehicle for delivery/RALEIGH NC	04/23/2003 07:38	
Arrived at FedEx Destination Location/RALEIGH NC	04/23/2003 06:51	
Arrived at FedEx Ramp/RALEIGH NC	04/23/2003 05:57	
Left FedEx Ramp/RALEIGH NC	04/23/2003 05:50	
Left FedEx Sort Facility/MEMPHIS TN	04/23/2003 03:18	
Arrived at Sort Facility/MEMPHIS TN	04/23/2003 00:04	
Left FedEx Origin Location/RICHLAND MS	04/22/2003 21:55	
Picked up by FedEx/JACKSON MS	04/22/2003 18:56	

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Enter your email (optional), up to three email addresses as recipients, add your message, and click on **Send Email**.

From

To

To

To

Add a message to this email.

Send Email

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No:	31635	R
DAS No:		

Region:	4	Date Shipped:	4/23/03
Project Code:	03-0474	Carrier Name:	FedEx
Account Code:	50102D04ZZQB00	Airbill:	836362681960
CERCLIS ID:		Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100
Spill ID:			
Site Name/State:	Gulf States Creosoting/MS		
Project Leader:	Brian Striggow		
Action:	Screening Site Investigation		
Sampling Co:	USEPA SESD		

Chain of Custody Record		Sampler Signature: B. Striggow
Relinquished By	(Date / Time)	Received By (Date / Time)
1 B. Striggow	4-23-03 / 17:00	
2		
3		
4		

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XX9	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-12-SS	S: 4/23/03	7:40	MD1XX9	--
D1XY0	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-12-SB	S: 4/23/03	7:50	MD1XY0	--
D1XY1	Surface Soil (0"-6")/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (10)	GS-03-SS	S: 4/23/03	7:40	MD1XY1	--
D1XY2	Subsurface Soil (24"-36")/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-03-SB	S: 4/23/03	7:55	MD1XY2	--
D1XY3	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-08-SS	S: 4/23/03	8:10	MD1XY3	--
D1XY4	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-08-SB	S: 4/23/03	8:20	MD1XY4	--
D1XY5	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-07-SS	S: 4/23/03	8:35	MD1XY5	--
D1XY6	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-07-SB	S: 4/23/03	8:45	MD1XY6	--
D1XY7	Surface Soil (0"-6")/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-04-SS	S: 4/23/03	8:30	MD1XY7	--
D1XY8	Subsurface Soil (24"-36")/ Bobby Lewis	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-04-SB	S: 4/23/03	8:40	MD1XY8	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

MOICA = CLP %Moisture/Calcareous (soil), VOA-s = CLP TCL Volatiles (soil)

TR Number: 4-252433676-042303-0002

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EPA USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31635
DAS No:

R

Region:	4	Date Shipped:	4/23/03	**Chain of Custody Record**	Sampler Signature: B_
Project Code:	03-0474	Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	50102D04ZZQB00	Airbill:	836362681960	1 B. Striggow 4-23-03 17:00	
CERCLIS ID:		Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	2	
Spill ID:				3	
Site Name/State:	Gulf States Creosoting/MS			4	
Project Leader:	Brian Striggow				
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XY9	Surface Soil (0"-6")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-05-SS	S: 4/23/03	9:15	MD1XY9	--
D1XZ0	Subsurface Soil (24"-36")/ Dan Thoman	L/G	MOICA (21), VOA-s (21)	(Ice Only) (4)	GS-05-SB	S: 4/23/03	9:25	MD1XZ0	--
D1XZ2	Trip Blank - Soil/ Brian Striggow	L/G	VOA-s (21)	(Ice Only) (2)	GS-02-TS	S: 4/23/03	15:57		Field QC

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
		D Thoman	

Analysis Key: Concentration: L = Low, M = Low/Medium, H = High Type/Designate: Composite = C, Grab = G Shipment Iced? _____

MOICA = CLP %Moisture/Calcareous (soil), VOA-s = CLP TCL Volatiles (soil)

TR Number: 4-252433676-042303-0002

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31635
DAS No:
R

Region:	4
Project Code:	03-0474
Account Code:	50102D04ZZQB00
CERCLIS ID:	
Spill ID:	
Site Name/State:	Gulf States Creosoting/MS
Project Leader:	Brian Striggow
Action:	Screening Site Investigation
Sampling Co:	USEPA SESD

Date Shipped:	4/25/03
Carrier Name:	FedEx
Airbill:	836362681948
Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100

Chain of Custody Record

Sampler Signature: B. L

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 B. L	4-25-03/14:40		
2			
3			
4			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XR4	Sediment/ Bobby Lewis	L/G	Ext/PAH (s (21)	(Ice Only) (1)	GS-01-SD	S: 4/22/03	9:00	MD1XR4	--
D1XR5	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-18-SB	S: 4/22/03	8:50	MD1XR5	--
D1XR6	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-18-SS	S: 4/22/03	8:40	MD1XR6	--
D1XR7	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-19-SB	S: 4/22/03	9:35	MD1XR7	--
D1XR8	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-19-SS	S: 4/22/03	9:30	MD1XR8	--
D1XR9	Sediment/ Bobby Lewis	L/G	Ext/PAH (s (21)	(Ice Only) (1)	GS-02-SD	S: 4/22/03	9:50	MD1XR9	--
D1XS0	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-17-SS	S: 4/22/03	10:05	MD1XS0	--
D1XS1	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-17-SB	S: 4/22/03	10:20	MD1XS1	--
D1XS2	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-20-SS	S: 4/22/03	10:45	MD1XS2	--
D1XS3	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-20-SB	S: 4/22/03	10:55	MD1XS3	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	D1XT2		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

BNA/PEST-s = CLP TCL Semivolatiles and Pesticides , Ext/PAH (s = CLP BNA/PEST/LowPAH (sediment.)

TR Number: 4-252433676-042503-0001

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31635
DAS No:
R

Region:	4	Date Shipped:	4/25/03	**Chain of Custody Record**	Sampler Signature: B. L
Project Code:		Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	03-0474 50102D04ZZQB00	Airbill:	836362681948	1 B. L 4-25-03 / 14:40	
CERCLIS ID:		Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	2	
Spill ID:				3	
Site Name/State:	Gulf States Creosoting/MS			4	
Project Leader:	Brian Striggow				
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XS4	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-20-SD	S: 4/22/03	10:45	MD1XS4	--
D1XS5	Sediment/ Bobby Lewis	L/G	Ext/PAH (s (21)	(Ice Only) (1)	GS-03-SD	S: 4/22/03	10:30	MD1XS5	--
D1XS6	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-16-SS	S: 4/22/03	11:30	MD1XS6	--
D1XS7	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-16-SB	S: 4/22/03	11:40	MD1XS7	--
D1XS8	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-21-SS	S: 4/22/03	12:05	MD1XS8	--
D1XS9	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-21-SB	S: 4/22/03	12:15	MD1XS9	--
D1XT1	Subsurface Soil (24"-36")/ Kevin Simmons	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-01-SB	S: 4/22/03	9:15	MD1XT1	--
D1XT2	Surface Soil (0"-6")/ Kevin Simmons	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-01-SS	S: 4/22/03	9:00	MD1XT2	--
D1XT3	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-13-SS	S: 4/22/03	13:15	MD1XT3	--
D1XT4	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-13-SB	S: 4/22/03	13:25	MD1XT4	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	D1XT2		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

BNA/PEST-s = CLP TCL Semivolatiles and Pesticides , Ext/PAH (s = CLP BNA/PEST/LowPAH (sediment.)

TR Number: 4-252433676-042503-0001

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31635
DAS No:
R

Region:	4	Date Shipped:	4/25/03	**Chain of Custody Record**	Sampler Signature: B. [signature]
Project Code:	03-0474	Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	50102D04ZZQB00	Airbill:	836362681948	1 B. [signature] 4-25-03/14:40	
CERCLIS ID:		Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	2	
Spill ID:				3	
Site Name/State:	Gulf States Creosoting/MS			4	
Project Leader:	Brian Striggow				
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XT5	Sediment/ Bobby Lewis	L/G	Ext/PAH (s (21)	(Ice Only) (1)	GS-04-SD	S: 4/22/03	11:35	MD1XT5	--
D1XT6	Sediment/ Bobby Lewis	L/G	Ext/PAH (s (21)	(Ice Only) (1)	GS-05-SD	S: 4/22/03	12:15	MD1XT6	--
D1XT7	Sediment/ Bobby Lewis	L/G	Ext/PAH (s (21)	(Ice Only) (1)	GS-07-SD	S: 4/22/03	12:45	MD1XT7	--
D1XT8	Surface Soil (0"-6")/ Brian Striggow	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-23-SS	S: 4/22/03	13:55	MD1XT8	--
D1XT9	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-15-SS	S: 4/22/03	13:40	MD1XT9	--
D1XW0	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-15-SB	S: 4/22/03	13:50	MD1XW0	--
D1XW1	Surface Soil (0"-6")/ Kevin Simmons	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-02-SS	S: 4/22/03	13:13	MD1XW1	--
D1XW2	Subsurface Soil (24"-36")/ Kevin Simmons	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-02-SB	S: 4/22/03	13:34	MD1XW2	--
D1XW3	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-14-SS	S: 4/22/03	14:40	MD1XW3	--
D1XW4	Subsurface Soil (6"-12")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-14-SB	S: 4/22/03	14:50	MD1XW4	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	D1XT2		
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

BNA/PEST-s = CLP TCL Semivolatiles and Pesticides , Ext/PAH (s = CLP BNA/PEST/LowPAH (sediment.)

TR Number: 4-252433676-042503-0001

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31635 **R**
DAS No:

Region:	4	Date Shipped:	4/25/03	**Chain of Custody Record**	Sampler Signature: B. L
Project Code:	03-0474	Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	50102D04ZZQB00	Airbill:	836362681948	1 B. L 4-25-03/14:40	
CERCLIS ID:		Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	2	
Spill ID:				3	
Site Name/State:	Gulf States Creosoting/MS			4	
Project Leader:	Brian Striggow				
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XW5	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-10-SS	S: 4/22/03	15:05	MD1XW5	--
D1XW6	Subsurface Soil (6"-12")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-10-SB	S: 4/22/03	15:15	MD1XW6	--
D1XW8	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-11-SS	S: 4/22/03	16:00	MD1XW8	--
D1XW9	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-11-SB	S: 4/22/03	16:10	MD1XW9	--
D1XX0	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-09-SS	S: 4/22/03	16:15	MD1XX0	--
D1XX1	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-09-SB	S: 4/22/03	16:25	MD1XX1	--
D1XX2	Sediment/ Bobby Lewis	L/G	Ext/PAH (s (21)	(Ice Only) (1)	GS-06-SD	S: 4/22/03	15:15	MD1XX2	--
D1XX3	Sediment/ Bobby Lewis	L/G	Ext/PAH (s (21)	(Ice Only) (1)	GS-08-SD	S: 4/22/03	15:50	MD1XX3	--
D1XX4	Surface Soil (0"-6")/ Kevin Simmons	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-22-SS	S: 4/22/03	16:42	MD1XX4	--
D1XX5	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-06-SS	S: 4/22/03	16:40	MD1XX5	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	D1XT2		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

BNA/PEST-s = CLP TCL Semivolatiles and Pesticides , Ext/PAH (s = CLP BNA/PEST/LowPAH (sediment.)

TR Number: 4-252433676-042503-0001

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31635 **R**
DAS No:

Region:	4	Date Shipped:	4/25/03	Chain of Custody Record	Sampler Signature: B. [illegible]
Project Code:	03-0474	Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	50102D04ZZQB00	Airbill:	836362681948	1 B. [illegible] 4-25-03/14:40	
CERCLIS ID:		Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	2	
Spill ID:				3	
Site Name/State:	Gulf States Creosoting/MS			4	
Project Leader:	Brian Striggow				
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XX6	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-06-SB	S: 4/22/03	16:50	MD1XX6	--
D1XX7	Surface Soil (0"-6")/ Bobby Lewis	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-24-SS	S: 4/22/03	16:35	MD1XX7	--
D1XX9	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-12-SS	S: 4/23/03	7:40	MD1XX9	--
D1XY0	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-12-SB	S: 4/23/03	7:50	MD1XY0	--
D1XY1	Surface Soil (0"-6")/ Bobby Lewis	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-03-SS	S: 4/23/03	7:40	MD1XY1	--
D1XY2	Subsurface Soil (24"-36")/ Bobby Lewis	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-03-SB	S: 4/23/03	7:55	MD1XY2	--
D1XY3	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-08-SS	S: 4/23/03	8:10	MD1XY3	--
D1XY4	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-08-SB	S: 4/23/03	8:20	MD1XY4	--
D1XY5	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-07-SS	S: 4/23/03	8:35	MD1XY5	--
D1XY6	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-07-SB	S: 4/23/03	8:45	MD1XY6	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	D1XT2		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

BNA/PEST-s = CLP TCL Semivolatiles and Pesticides , Ext/PAH (s = CLP BNA/PEST/LowPAH (sediment.)

TR Number: 4-252433676-042503-0001

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USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31635 **R**
DAS No:

Region:	4
Project Code:	03-0474
Account Code:	50102D04ZZQB00
CERCLIS ID:	
Spill ID:	
Site Name/State:	Gulf States Creosoting/MS
Project Leader:	Brian Striggow
Action:	Screening Site Investigation
Sampling Co:	USEPA SESD

Date Shipped:	4/25/03
Carrier Name:	FedEx
Airbill:	836362681948
Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	4-25-03/14:40		
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XY7	Surface Soil (0"-6")/ Bobby Lewis	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-04-SS	S: 4/23/03	8:30	MD1XY7	--
D1XY8	Subsurface Soil (24"-36")/ Bobby Lewis	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-04-SB	S: 4/23/03	8:40	MD1XY8	--
D1XY9	Surface Soil (0"-6")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-05-SS	S: 4/23/03	9:15	MD1XY9	--
D1XZ0	Subsurface Soil (24"-36")/ Dan Thoman	L/G	BNA/PEST-s (21)	(Ice Only) (1)	GS-05-SB	S: 4/23/03	9:25	MD1XZ0	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D1XT2	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

BNA/PEST-s = CLP TCL Semivolatiles and Pesticides , Ext/PAH (s = CLP BNA/PEST/LowPAH (sediment.)

TR Number: 4-252433676-042503-0001

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FedEx Express **USA Airbill**

FedEx Tracking Number **836362681948**

Form I.D. No. 0200

1 From Please print and press hard

Date 4/25/03

Sender's FedEx Account Number 2148-6184-5

Sender's Name Brian Striggow Phone (706) 355-8619

Company USEPA SESD

Address 980 College Station Rd.

Dept/Floor/Suite/Room

City Athens State GA ZIP 30605

2 Your Internal Billing Reference
First 24 characters will appear on invoice.

3 To

Recipient's Name Sample Custodian Phone (919) 379-4100

Company Liberty Analytical

Address 501 Madison Avenue

To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Dept/Floor/Suite/Room

City Cary State NC ZIP 27513

Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

Questions? Visit our Web site at fedex.com
or call 1.800.Go.FedEx® 800.463.3339.

4a Express Package Service — *Packages up to 150 lbs* — Delivery commitment may be later in some areas

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day — Second business day
- [ ] FedEx Express Saver — Third business day

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs* — Delivery commitment may be later in some areas

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation

5 Packaging — * Declared value limit $50

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [X] Other

6 Special Handling — Include FedEx address in Section 3.

- [X] SATURDAY Delivery — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — NOT Available for FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 — x — 1 2

Dangerous Goods (including Dry Ice) cannot be shipped in FedEx packaging.

- [ ] Cargo Aircraft Only

7 Payment *Bill to:* — Enter FedEx Acct. No. or Credit Card No. below.

- [X] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No / Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value†	FedEx Use Only
1		$ .00	

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature *Sign to authorize delivery without obtaining signature.*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

446

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- Track Shipments
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- Email Track
- FedEx InSight
- Custom Critical
- Cargo Track
- FedEx Freight

Related Links
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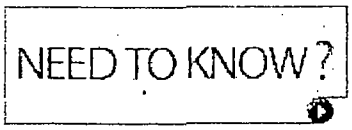
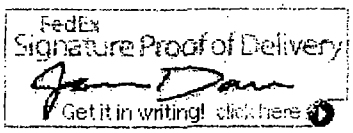
- My FedEx
- FedEx Wireless Solutions
- FedEx Address Checker





Track Shipments

Detailed Results

Quick Help

View detailed results for: Previous 836362681948 Next

Tracking Number	836362681948
Reference Number	
Ship Date	04/25/2003
Delivered To	Ship'g/Receiv'g
Delivery Location	CARY NC
Delivery Date/Time	04/26/2003 10:16
Signed For By	E.SCHILLER
Service Type	Priority Overnight

Tracking Options
- Obtain a Signature Proof of Delivery
- Email these tracking results to one or more recipients
- Return to Summary Results
- Track More Shipments

Scan Activity	Date/Time	Comments
Delivered/CARY NC	04/26/2003 10:16	
On FedEx vehicle for delivery/RALEIGH NC	04/26/2003 09:15	
On FedEx vehicle for delivery/RALEIGH NC	04/26/2003 08:35	
Arrived at FedEx Destination Location/RALEIGH NC	04/26/2003 07:57	
Left FedEx Ramp/RALEIGH NC	04/26/2003 06:44	
Arrived at FedEx Ramp/RALEIGH NC	04/26/2003 06:04	
Left FedEx Sort Facility/MEMPHIS TN	04/26/2003 03:25	
Left FedEx Ramp/ATLANTA GA	04/26/2003 00:59	
Arrived at Sort Facility/MEMPHIS TN	04/25/2003 23:39	
Arrived at FedEx Ramp/ATLANTA GA	04/25/2003 21:18	
Left FedEx Origin Location/ATHENS GA	04/25/2003 19:23	
Picked up by FedEx/ATHENS GA	04/25/2003 16:21	

Email Your Detailed Tracking Results

Enter your email (optional), up to three email addresses as recipients, add your message, and click on **Send Email**.

From

To

To

To

Add a message to this email.

Send Email

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31635 **R**
DAS No:

Region:	4
Project Code:	03-0474
Account Code:	50102D04ZZQB00
CERCLIS ID:	
Spill ID:	
Site Name/State:	Gulf States Creosoting/MS
Project Leader:	Brian Striggow
Action:	Screening Site Investigation
Sampling Co:	USEPA SESD

Date Shipped:	4/25/03
Carrier Name:	FedEx
Airbill:	836362681992
Shipped to:	A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277

Chain of Custody Record

Sampler Signature: B. C

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 B. C	4.25.03 14:40		
2			
3			
4			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
D1XT0	Ground Water/ Kevin Simmons	L/G	BNA/PEST-w (21), VOA-w (21)	(Ice Only) (14)	GS-01-GW	S: 4/22/03	11:05	MD1XT0	--
D1XW7	Ground Water/ Kevin Simmons	L/G	BNA/PEST-w (21), VOA-w (21)	(Ice Only) (6)	GS-02-GW	S: 4/22/03	14:55	MD1XW7	--
D1XZ1	Ground Water/ Brian Striggow	L/G	BNA/PEST-w (21), VOA-w (21)	(Ice Only) (6)	GS-03-GW	S: 4/23/03	9:55	MD1XZ1	--
D1XZ3	Ground Water/ Brian Striggow	L/G	BNA/PEST-w (21), VOA-w (21)	(Ice Only) (6)	GS-04-GW	S: 4/23/03	13:20	MD1XZ3	--
D1XZ4	Ground Water/ Brian Striggow	L/G	BNA/PEST-w (21), VOA-w (21)	(Ice Only) (6)	GS-05-GW	S: 4/23/03	11:45	MD1XZ4	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D1XT0	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

BNA/PEST-w = CLP TCL Semivolatiles and Pesticides , VOA-w = CLP TCL Volatiles (water)

TR Number: 4-252433676-042503-0002

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USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 31635
DAS No:

R

Region:	4	Date Shipped:	4/25/03	**Chain of Custody Record**	Sampler Signature: B. L
Project Code:		Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	03-0474 50102D04ZZQB00	Airbill:	836362681981	1 B. L 4-25-03 / 14:40	
CERCLIS ID:		Shipped to:	Sentinel Inc. 116 Washington Street, NE Huntsville AL 35801 (256) 534-9800	2	
Spill ID:				3	
Site Name/State:	Gulf States Creosoting/MS			4	
Project Leader:	Brian Striggow				
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MD1XR3	Ground Water/ Brian Striggow	L/G	TM-w (21)	(HNO3) (1)	GS-06-GW	S: 4/24/03 13:45		--
MD1XR4	Sediment/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-01-SD	S: 4/22/03 9:00	D1XR4	--
MD1XR5	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-18-SB	S: 4/22/03 8:50	D1XR5	--
MD1XR6	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-18-SS	S: 4/22/03 8:40	D1XR6	--
MD1XR7	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-19-SB	S: 4/22/03 9:35	D1XR7	--
MD1XR8	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-19-SS	S: 4/22/03 9:30	D1XR8	--
MD1XR9	Sediment/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-02-SD	S: 4/22/03 9:50	D1XR9	--
MD1XS0	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-17-SS	S: 4/22/03 10:05	D1XS0	--
MD1XS1	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-17-SB	S: 4/22/03 10:20	D1XS1	--
MD1XS2	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-20-SS	S: 4/22/03 10:45	D1XS2	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	MD1XT0, MD1XT2		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____
TM-s = CLP TAL Total Metals (soil), TM-w = CLP TAL Total Metals (water)			

TR Number: 4-252433676-042503-0003

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USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 31635 **R**
DAS No:

Region:	4	Date Shipped:	4/25/03	**Chain of Custody Record**	Sampler Signature: B. [illegible]
Project Code:	03-0474	Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	50102D04ZZQB00	Airbill:	836362681981	1 B-2 4.25.03/14:40	
CERCLIS ID:		Shipped to:	Sentinel Inc. 116 Washington Street, NE Huntsville AL 35801 (256) 534-9800	2	
Spill ID:				3	
Site Name/State:	Gulf States Creosoting/MS			4	
Project Leader:	Brian Striggow				
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MD1XS3	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-20-SB	S: 4/22/03	10:55	D1XS3	--
MD1XS4	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-20-SD	S: 4/22/03	10:45	D1XS4	--
MD1XS5	Sediment/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-03-SD	S: 4/22/03	10:30	D1XS5	--
MD1XS6	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-16-SS	S: 4/22/03	11:30	D1XS6	--
MD1XS7	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-16-SB	S: 4/22/03	11:40	D1XS7	--
MD1XS8	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-21-SS	S: 4/22/03	12:05	D1XS8	--
MD1XS9	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-21-SB	S: 4/22/03	12:15	D1XS9	--
MD1XT0	Ground Water/ Kevin Simmons	L/G	TM-w (21)	(HNO3) (2)	GS-01-GW	S: 4/22/03	11:05	D1XT0	--
MD1XT1	Subsurface Soil (24"-36")/ Kevin Simmons	L/G	TM-s (21)	(Ice Only) (1)	GS-01-SB	S: 4/22/03	9:15	D1XT1	--
MD1XT2	Surface Soil (0"-6")/ Kevin Simmons	L/G	TM-s (21)	(Ice Only) (1)	GS-01-SS	S: 4/22/03	9:00	D1XT2	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	MD1XT0, MD1XT2		
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

TM-s = CLP TAL Total Metals (soil), TM-w = CLP TAL Total Metals (water)

TR Number: 4-252433676-042503-0003

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USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No:	31635	R
DAS No:		

Region:	4	Date Shipped:	4/25/03	**Chain of Custody Record**	Sampler Signature: B. C
Project Code:	03-0474	Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	50102D04ZZQB00	Airbill:	836362681981	1 B. C 4-25-03/14.44	
CERCLIS ID:		Shipped to:	Sentinel Inc. 116 Washington Street, NE Huntsville AL 35801 (256) 534-9800	2	
Spill ID:				3	
Site Name/State:	Gulf States Creosoting/MS			4	
Project Leader:	Brian Striggow				
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MD1XT3	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-13-SS	S: 4/22/03	13:15	D1XT3	--
MD1XT4	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-13-SB	S: 4/22/03	13:25	D1XT4	--
MD1XT5	Sediment/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-04-SD	S: 4/22/03	11:35	D1XT5	--
MD1XT6	Sediment/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-05-SD	S: 4/22/03	12:15	D1XT6	--
MD1XT7	Sediment/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-07-SD	S: 4/22/03	12:45	D1XT7	--
MD1XT8	Surface Soil (0"-6")/ Brian Striggow	L/G	TM-s (21)	(Ice Only) (1)	GS-23-SS	S: 4/22/03	13:55	D1XT8	--
MD1XT9	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-15-SS	S: 4/22/03	13:40	D1XT9	--
MD1XW0	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-15-SB	S: 4/22/03	13:50	D1XW0	--
MD1XW1	Surface Soil (0"-6")/ Kevin Simmons	L/G	TM-s (21)	(Ice Only) (1)	GS-02-SS	S: 4/22/03	13:13	D1XW1	--
MD1XW2	Subsurface Soil (24"-36")/ Kevin Simmons	L/G	TM-s (21)	(Ice Only) (1)	GS-02-SB	S: 4/22/03	13:34	D1XW2	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	MD1XT0, MD1XT2		

Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TM-s = CLP TAL Total Metals (soil), TM-w = CLP TAL Total Metals (water)

TR Number: 4-252433676-042503-0003

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USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 31635
DAS No:
R

Region:	4	Date Shipped:	4/25/03	**Chain of Custody Record**	Sampler Signature: B. [signature]
Project Code:	03-0474	Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	50102D04ZZQB00	Airbill:	836362681981	1 B. [signature] 4.25.03/1440	
CERCLIS ID:		Shipped to:	Sentinel Inc. 116 Washington Street, NE Huntsville AL 35801 (256) 534-9800	2	
Spill ID:				3	
Site Name/State:	Gulf States Creosoting/MS			4	
Project Leader:	Brian Striggow				
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MD1XW3	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-14-SS	S: 4/22/03	14:40	D1XW3	--
MD1XW4	Subsurface Soil (6"-12")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-14-SB	S: 4/22/03	14:50	D1XW4	--
MD1XW5	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-10-SS	S: 4/22/03	15:05	D1XW5	--
MD1XW6	Subsurface Soil (6"-12")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-10-SB	S: 4/22/03	15:15	D1XW6	--
MD1XW7	Ground Water/ Kevin Simmons	L/G	TM-w (21)	(HNO3) (1)	GS-02-GW	S: 4/22/03	14:55	D1XW7	--
MD1XW8	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-11-SS	S: 4/22/03	16:00	D1XW8	--
MD1XW9	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-11-SB	S: 4/22/03	16:10	D1XW9	--
MD1XX0	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-09-SS	S: 4/22/03	16:15	D1XX0	--
MD1XX1	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-09-SB	S: 4/22/03	16:25	D1XX1	--
MD1XX2	Sediment/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-06-SD	S: 4/22/03	15:15	D1XX2	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	MD1XT0, MD1XT2		
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?**

TM-s = CLP TAL Total Metals (soil), TM-w = CLP TAL Total Metals (water)

TR Number: 4-252433676-042503-0003

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USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 31635 R
DAS No:

Region:	4	Date Shipped:	4/25/03	Chain of Custody Record	Sampler Signature: B. L
Project Code:	03-0474	Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	50102D04ZZQB00	Airbill:	836362681981	1 B. L 4-25-03 / 14:40	
CERCLIS ID:		Shipped to:	Sentinel Inc. 116 Washington Street, NE Huntsville AL 35801 (256) 534-9800	2	
Spill ID:				3	
Site Name/State:	Gulf States Creosoting/MS			4	
Project Leader:	Brian Striggow				
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MD1XX3	Sediment/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-08-SD	S: 4/22/03	15:50	D1XX3	--
MD1XX4	Surface Soil (0"-6")/ Kevin Simmons	L/G	TM-s (21)	(Ice Only) (1)	GS-22-SS	S: 4/22/03	16:42	D1XX4	--
MD1XX5	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-06-SS	S: 4/22/03	16:40	D1XX5	--
MD1XX6	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-06-SB	S: 4/22/03	16:50	D1XX6	--
MD1XX7	Surface Soil (0"-6")/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-24-SS	S: 4/22/03	16:35	D1XX7	--
MD1XX9	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-12-SS	S: 4/23/03	7:40	D1XX9	--
MD1XY0	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-12-SB	S: 4/23/03	7:50	D1XY0	--
MD1XY1	Surface Soil (0"-6")/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-03-SS	S: 4/23/03	7:40	D1XY1	--
MD1XY2	Subsurface Soil (24"-36")/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-03-SB	S: 4/23/03	7:55	D1XY2	--
MD1XY3	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-08-SS	S: 4/23/03	8:10	D1XY3	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	MD1XT0, MD1XT2		

Analysis Key: Concentration: L = Low, M = Low/Medium, H = High Type/Designate: Composite = C, Grab = G Shipment Iced? _____

TM-s = CLP TAL Total Metals (soil), TM-w = CLP TAL Total Metals (water)

TR Number: 4-252433676-042503-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 31635 R
DAS No:

Region:	4	Date Shipped:	4/25/03	Chain of Custody Record	Sampler Signature: B. C
Project Code:	03-0474	Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	50102D04ZZQB00	Airbill:	836362681981	1 B. C 4-25-03 /1440	
CERCLIS ID:		Shipped to:	Sentinel Inc. 116 Washington Street, NE Huntsville AL 35801 (256) 534-9800	2	
Spill ID:				3	
Site Name/State:	Gulf States Creosoting/MS			4	
Project Leader:	Brian Striggow				
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MD1XY4	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-08-SB	S: 4/23/03	8:20	D1XY4	--
MD1XY5	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-07-SS	S: 4/23/03	8:35	D1XY5	--
MD1XY6	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-07-SB	S: 4/23/03	8:45	D1XY6	--
MD1XY7	Surface Soil (0"-6")/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-04-SS	S: 4/23/03	8:30	D1XY7	--
MD1XY8	Subsurface Soil (24"-36")/ Bobby Lewis	L/G	TM-s (21)	(Ice Only) (1)	GS-04-SB	S: 4/23/03	8:40	D1XY8	--
MD1XY9	Surface Soil (0"-6")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-05-SS	S: 4/23/03	9:15	D1XY9	--
MD1XZ0	Subsurface Soil (24"-36")/ Dan Thoman	L/G	TM-s (21)	(Ice Only) (1)	GS-05-SB	S: 4/23/03	9:25	D1XZ0	--
MD1XZ1	Ground Water/ Brian Striggow	L/G	TM-w (21)	(HNO3) (1)	GS-03-GW	S: 4/23/03	9:55	D1XZ1	--
MD1XZ3	Ground Water/ Brian Striggow	L/G	TM-w (21)	(HNO3) (1)	GS-04-GW	S: 4/23/03	13:20	D1XZ3	--
MD1XZ4	Ground Water/ Brian Striggow	L/G	TM-w (21)	(HNO3) (1)	GS-05-GW	S: 4/23/03	11:45	D1XZ4	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	MD1XT0, MD1XT2		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____
TM-s = CLP TAL Total Metals (soil), TM-w = CLP TAL Total Metals (water)			

TR Number: 4-252433676-042503-0003

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

REGION COPY

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 31635
DAS No:
R

Region:	4	Date Shipped:	4/25/03	**Chain of Custody Record**	Sampler Signature: B. L
Project Code:	03-0474	Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	50102D04ZZQB00	Airbill:	836362681981	1 B. L 4-25-03/14:40	
CERCLIS ID:		Shipped to:	Sentinel Inc. 116 Washington Street, NE Huntsville AL 35801 (256) 534-9800	2	
Spill ID:				3	
Site Name/State:	Gulf States Creosoting/MS			4	
Project Leader:	Brian Striggow				
Action:	Screening Site Investigation				
Sampling Co:	USEPA SESD				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MD1XZ5	Preservative Blank/ Kevin Simmons	L/G	TM-w (21)	(HNO3) (1)	GS-01-PB	S: 4/24/03 14:00		Field QC

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	MD1XT0, MD1XT2		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?
TM-s = CLP TAL Total Metals (soil), TM-w = CLP TAL Total Metals (water)			

TR Number: 4-252433676-042503-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

FedEx Express **USA Airbill** FedEx Tracking Number **836362681960**

Form 0200

1 From *Please print and press hard*

Date 4/23/03 Sender's FedEx Account Number 2148-6164-5

Sender's Name Brian Stroggen Phone (706) 340-6352

Company USEPA SESD

Address 980 College Station Rd Dept/Floor/Suite/Room

City Athens State GA ZIP 30605

2 Your Internal Billing Reference *First 24 characters will appear on invoice.*

3 To

Recipient's Name Sample Custodian Phone (919) 379-4100

Company Liberty Analytical

Address 501 Madison Avenue
To "HOLD" at FedEx location, print FedEx address — We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address Dept/Floor/Suite/Room

City Cary N.C. State NC ZIP 27513

Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

Questions? Visit our Web site at fedex.com
or call 1.800.Go.FedEx® 800.463.3339.

4a Express Package Service — *Packages up to 150 lbs.* Delivery commitment may be later in some areas.

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day — Second business day
- [ ] FedEx Express Saver — Third business day

FedEx Envelope rate not available. Minimum charge: One pound rate

4b Express Freight Service — *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation:

5 Packaging — * Declared value limit $500

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [X] Other

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — NOT Available for FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous Goods (including Dry Ice) cannot be shipped in FedEx packaging.

- [ ] Cargo Aircraft Only

7 Payment *Bill to:* — Enter FedEx Acct. No. or Credit Card No. below

- [X] Sender — Acct. No. in Section 1 will be billed
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No / Credit Card No. Exp Date

Total Packages	Total Weight	Total Declared Value†
1	36	$ .00

†Our liability is limited to $100 unless you declare a higher value. See back for details. — FedEx Use Only

8 Release Signature *Sign to authorize delivery without obtaining signature.*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

446

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- Track Shipments
- Alternate Reference Track
- Email Track
- FedEx InSight
- Custom Critical
- Cargo Track
- FedEx Freight

Related Links

- Signature Proof
- My FedEx
- FedEx Wireless Solutions
- FedEx Address Checker

Track Shipments

Detailed Results

Quick Help

View detailed results for: 836362681960 Next

Tracking Number	836362681960
Reference Number	
Ship Date	04/23/2003
Delivered To	Ship'g/Receiv'g
Delivery Location	CARY NC
Delivery Date/Time	04/24/2003 08:59
Signed For By	E.SCHUILLER
Service Type	Priority Overnight

Tracking Options

- Obtain a Signature Proof of Delivery
- Email these tracking results to one or more recipients
- Return to Summary Results
- Track More Shipments

Scan Activity	Date/Time	Comments
Delivered/CARY NC	04/24/2003 08:59	
On FedEx vehicle for delivery/RALEIGH NC	04/24/2003 07:44	
Arrived at FedEx Destination Location/RALEIGH NC	04/24/2003 06:43	
Left FedEx Ramp/RALEIGH NC	04/24/2003 05:14	
Arrived at FedEx Ramp/RALEIGH NC	04/24/2003 05:01	
Left FedEx Sort Facility/MEMPHIS TN	04/24/2003 03:35	
Arrived at Sort Facility/MEMPHIS TN	04/24/2003 00:08	
Left FedEx Origin Location/RICHLAND MS	04/23/2003 21:45	
Picked up by FedEx/JACKSON MS	04/23/2003 17:30	

Email Your Detailed Tracking Results

Enter your email (optional), up to three email addresses as recipients, add your message, and click on **Send Email**.

From

To

To

To

Add a message to this email.

Send Email

FedEx Express **USA Airbill**

FedEx Tracking Number **836362681992**

Form I.D. No. 0200

1 From *Please print and press hard.*

Date 4/25/03 Sender's FedEx Account Number 2148-8184-5

Sender's Name Brian Striggow Phone (706) 340-6352

Company USEPA SESD

Address 980 College Station Rd. Dept./Floor/Suite/Room

City Athens State GA ZIP 30605

2 Your Internal Billing Reference First 24 characters will appear on invoice.

3 To

Recipient's Name Sample Custodian Phone (281) 292-5277

Company A4 Scientific

Address 1544 Sawdust Rd.

To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address Suite 505 Dept/Floor/Suite/Room

City The Woodlands State TX ZIP 77380

Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

Questions? Visit our Web site at fedex.com
or call 1.800.Go.FedEx® 800.463.3339.

4a Express Package Service *Packages up to 150 lbs.* Delivery commitment may be later in some areas.

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day — Second business day
- [ ] FedEx Express Saver — Third business day

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation:

5 Packaging * Declared value limit $500

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [X] Other

6 Special Handling Include FedEx address in Section 3.

- [X] **SATURDAY Delivery** Available ONLY for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] **HOLD Weekday** at FedEx Location NOT Available for FedEx First Overnight
- [ ] **HOLD Saturday** at FedEx Location Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous Goods (including Dry Ice) cannot be shipped in FedEx packaging. [ ] Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [X] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No. / Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value†	FedEx Use Only
2		$ .00	

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature *Sign to authorize delivery without obtaining signature.*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

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- Track Shipments
- Alternate Reference Track
- Email Track
- FedEx InSight
- Custom Critical
- Cargo Track
- FedEx Freight

Related Links
- Signature Proof
- My FedEx
- FedEx Wireless Solutions
- FedEx Address Checker

Track Shipments

Detailed Results

Quick Help

View detailed results for: 836362681992 Next

Tracking Number	836362681992
Reference Number	
Ship Date	04/25/2003
Delivered To	
Delivery Location	SPRING TX
Delivery Date/Time	04/26/2003 09:45
Signed For By	A.4 SCINTIFIC
Service Type	Priority Overnight
Master Tracking Number	836362681992
Total Pieces	1 of 2

Tracking Options
- Obtain a Signature Proof of Delivery
- Email these tracking results to one or more recipients
- Return to Multiple Piece Shipments
- Return to Summary Results
- Track More Shipments

Scan Activity	Date/Time	Comments
Delivered/SPRING TX	04/26/2003 09:45	No signature required - release waiver on file
Delivered/SPRING TX	04/26/2003 09:45	No signature required - release waiver on file
On FedEx vehicle for delivery/CONROE TX	04/26/2003 08:58	
On FedEx vehicle for delivery/CONROE TX	04/26/2003 08:04	
Arrived at FedEx Destination Location/CONROE TX	04/26/2003 08:03	
Arrived at FedEx Ramp/HOUSTON TX	04/26/2003 04:47	
Left FedEx Ramp/HOUSTON TX	04/26/2003 04:02	
Left FedEx Sort Facility/MEMPHIS TN	04/26/2003 03:47	
Left FedEx Ramp/ATLANTA GA	04/26/2003 00:59	
Arrived at Sort Facility/MEMPHIS TN	04/25/2003 23:39	
Arrived at FedEx Ramp/ATLANTA GA	04/25/2003 21:18	
Left FedEx Origin Location/ATHENS GA	04/25/2003 19:23	

Email Your Detailed Tracking Results

Enter your email (optional), up to three email addresses as recipients, add your message, and click on **Send Email**.

From

To

To

To

Add a message to this email.

FedEx Express USA Airbill

FedEx Tracking Number 8363626819 81

Form I.D. No. 0200

1 From Please print and press hard.

Date 4/25/03 Sender's FedEx Account Number 2148-8184-5

Sender's Name Brian Striggow Phone (706) 340-6352

Company USEPA SESD

Address 980 College Station Rd. Dept/Floor/Suite/Room

City Athens State GA ZIP 30605

2 Your Internal Billing Reference First 24 characters will appear on invoice.

3 To

Recipient's Name Sample Custodian Phone (256) 534-9800

Company Sentinel Inc.

Address 116 Washington Street NE

To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address Dept/Floor/Suite/Room

City Huntsville State AL ZIP 35801

4a Express Package Service *Packages up to 150 lbs.* Delivery commitment may be later in some areas.

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day — Second business day
- [ ] FedEx Express Saver — Third business day

FedEx Envelope rate not available. Minimum charge. One-pound rate

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation:

5 Packaging * Declared value limit $500

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [X] Other

6 Special Handling Include FedEx address in Section 3.

- [X] SATURDAY Delivery — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — NOT Available for FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous Goods (including Dry Ice) cannot be shipped in FedEx packaging. [ ] Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [X] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No. / Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value†	FedEx Use Only
2		$ .00	

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature *Sign to authorize delivery without obtaining signature.*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

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- Track Shipments
- Alternate Reference Track
- Email Track
- FedEx InSight
- Custom Critical
- Cargo Track
- FedEx Freight

Related Links
- Signature Proof
- My FedEx
- FedEx Wireless Solutions
- FedEx Address Checker

Track Shipments

Detailed Results

Quick Help

View detailed results for: 836362681981 Next

Tracking Number	836362681981
Reference Number	
Ship Date	04/25/2003
Delivered To	Ship'g/Receiv'g
Delivery Location	HUNTSVILLE AL
Delivery Date/Time	04/26/2003 10:07
Signed For By	N.MAGHSOUDLOU
Service Type	Priority Overnight
Master Tracking Number	836362681981
Total Pieces	1 of 2

Tracking Options
- Obtain a Signature Proof of Delivery
- Email these tracking results to one or more recipients
- Return to Multiple Piece Shipments
- Return to Summary Results
- Track More Shipments

Scan Activity	Date/Time	Comments
Delivered/HUNTSVILLE AL	04/26/2003 10:07	
On FedEx vehicle for delivery/MADISON AL	04/26/2003 08:20	
Arrived at FedEx Destination Location/MADISON AL	04/26/2003 08:13	
Left FedEx Sort Facility/MEMPHIS TN	04/26/2003 03:26	
Left FedEx Ramp/ATLANTA GA	04/26/2003 00:59	
Arrived at Sort Facility/MEMPHIS TN	04/25/2003 23:39	
Arrived at FedEx Ramp/ATLANTA GA	04/25/2003 21:18	
Left FedEx Origin Location/ATHENS GA	04/25/2003 19:23	
Picked up by FedEx/ATHENS GA	04/25/2003 16:18	

Email Your Detailed Tracking Results

Enter your email (optional), up to three email addresses as recipients, add your message, and click on **Send Email**.

From

To

To

To

Add a message to this email

Send Email

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

MEMORANDUM

Date: 06/20/2003

Subject: Results of VOLATILES Sample Analysis
03-0474 Gulf States Creosoting
Flowood, MS

From: Goddard, Denise

To: Striggow, Brian

Thru: QA Office

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

ORGANIC DATA QUALIFIER REPORT

Case Number: 31635 Project Number 03-0474 SOW Number OLC03.2, OLM04.2

Site ID. Gulf States Creosoting, Flowood, MS Date 6/07/03

Affected Samples	Compound or Fraction	Flag Used	Reason
Volatiles			
6754, 6755, 6756, 6757, 6758, 6759, 6760, 6761, 6762, 6763, 6764, 6765, 6766, 6767, 6768, 6769, 6771, 6772, 6773, 6774, 6775	bromomethane	J	continuing calibration %D outlier
6754, 6755, 6756, 6757, 6758, 6759, 6760, 6764, 6767, 6768, 6769, 6771, 6772, 6773, 6774, 6775	acetone, 2-butanone, 4-methyl-2-pentanone, 2-hexanone, 1,2-dibromo-3-chloropropane	J	continuing calibration %D outlier
6754, 6756, 6758, 6759, 6760, 6762, 6764, 6765, 6766, 6768, 6773, 6775	acetone	J	contaminated storage blank
6754, 6765	carbon disulfide	J	< quantitation limit
6758, 6764	methyl acetate	J	< quantitation limit
6772, 6776, 6777, 6778, 6779, 6780, 6781, 6782, 6783, 6784, 6785, 6786, 6788, 6789, 6790, 6791, 6792, 6793, 6794, 6795	acetone	J	continuing calibration %D outlier and/or contaminated storage blank
6772, 6776, 6777, 6778, 6779, 6780, 6781, 6782, 6783, 6784, 6785, 6786, 6790	bromomethane	J	continuing calibration %D outlier

ORGANIC DATA QUALIFIER REPORT

Case Number:	31635	Project Number	03-0474	SOW Number	OLC03.2, OLM04.2
Site ID.	Gulf States Creosoting, Flowood, MS			Date	6/07/03

Affected Samples	Compound or Fraction	Flag Used	Reason
6770, 6787, 6811, 6812, 6813	2-butanone	J	continuing calibration outlier
6788, 6789, 6790, 6791, 6792, 6793, 6794, 6795	2-butanone, 4-methyl-2-pentanone, 2-hexanone	J	continuing calibration %D outlier
6779	methyl acetate	J	< quantitation limit
6786	benzene	J	< quantitation limit
6790	methyl tert-butyl ether, 1,2-dibromo-3-chloropropane	J	continuing calibration %D outlier
6796, 6797, 6798, 6799, 6800, 6801, 6802, 6804, 6805, 6806, 6807, 6808, 6809, 6810, 6814	acetone, 2-butanone, 4-methyl-2-pentanone, 2-hexanone	J	continuing calibration %D outlier
6799, 6800, 6801, 6802, 6804, 6805, 6806, 6807, 6808, 6809, 6810, 6814	bromomethane, methyl tert-butyl ether, 1,2-dibromo-3-chloropropane	J	continuing calibration %D outlier

ORGANIC DATA QUALIFIER REPORT

Case Number: 31635 Project Number 03-0474 SOW Number OLC03.2, OLM04.2

Site ID. Gulf States Creosoting, Flowood, MS Date 6/07/03

Affected Samples	Compound or Fraction	Flag Used	Reason
Extractables			
6754, 6755, 6756, 6757, 6758, 6759, 6760, 6761, 6762, 6763, 6764, 6765, 6766, 6767, 6768, 6769, 6771, 6773, 6774, 6775	butylbenzylphthalate	J	continuing calibration %D outlier
6754, 6755, 6756, 6757, 6758	bis(2-ethylhexyl)phthalate	J	continuing calibration %D outlier
6759, 6760, 6761, 6762, 6763, 6764, 6765, 6766, 6767, 6768, 6769, 6771, 6773, 6774, 6775	3,3'-dichlorobenzidine	J	continuing calibration %D outlier
6760, 6761, 6762, 6764, 6765, 6766, 6773, 6774	benzo(b)fluoranthene, benzo(k)fluoranthene	J	isomers could not be resolved by GC
6754	benzaldehyde, benzo(g,h,i)perylene	J	< quantitation limit
6763	benzo(g,h,i)perylene	J	< quantitation limit
6760	acenaphthylene, phenanthrene, anthracene, carbazole, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit
6761	benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
6762	fluoranthene, pyrene, chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene	J	< quantitation limit

ORGANIC DATA QUALIFIER REPORT

Case Number: 31635 Project Number 03-0474 SOW Number OLC03.2, OLM04.2

Site ID. Gulf States Creosoting, Flowood, MS Date 6/07/03

Affected Samples	Compound or Fraction	Flag Used	Reason
6764	fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene	J	< quantitation limit
6765	benzaldehyde, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene	J	< quantitation limit
6766	acenaphthylene, phenanthrene, carbazole, benzo(a)anthracene, chrysene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit
6770, 6787, 6811, 6812, 6813	hexachlorocyclopentadiene, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, 3,3'-dichlorobenzidine	J	continuing calibration outlier
6770	all compounds	J	extraction holding time outliers
6770	4,6-dinitro-2-methylphenol	J	surrogate outlier
6773	carbazole	J	< quantitation limit
6774	fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene	J	< quantitation limit
6775	benzaldehyde, pyrene	J	< quantitation limit
6772, 6776, 6777, 6778, 6779, 6780, 6781, 6782	2,4-dinitrophenol	R	poor instrument response during calibration
6783, 6784, 6785, 6786, 6788, 6789, 6790, 6791, 6792, 6793, 6794, 6795	2,4-dinitrophenol	J	continuing calibration %D and RPD outliers

ORGANIC DATA QUALIFIER REPORT

Case Number: 31635 Project Number 03-0474 SOW Number OLC03.2, OLM04.2

Site ID. Gulf States Creosoting, Flowood, MS Date 6/07/03

Affected Samples	Compound or Fraction	Flag Used	Reason
6772, 6776, 6777, 6778, 6779, 6780, 6781, 6782	hexachlorocyclopentadiene, 4-nitrophenol, 4-nitroaniline, hexachlorobenzene, pentachlorophenol, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene	J	continuing calibration %D outlier
6778	acenaphthylene, phenanthrene, anthracene, benzo(a)anthracene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit
6779	acenaphthylene, anthracene, carbazole, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit
6783	phenanthrene, carbazole	J	< quantitation limit
6784	acenaphthylene, carbazole	J	< quantitation limit
6785, 6786	naphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, pentachlorophenol	J	< quantitation limit
6787	all compounds	J	extraction holding time outliers
6787	2-methylphenol, 4-methylphenol, 1,1-biphenyl 2,4-dimethylphenol, caprolactam, dimethylphthalate, diethylphthalate, 4,6-dinitro-2-methylphenol, di-n-butylphthalate, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate	J	surrogate outlier
6788	naphthalene, 2-methylnaphthalene, acenaphthylene, dibenzofuran, pentachlorophenol, carbazole, dibenzo(a,h)anthracene	J	< quantitation limit
6789	anthracene, benzo(k)fluoranthene	J	< quantitation limit
6791, 6793, 6794, 6795	benzaldehyde	J	< quantitation limit

ORGANIC DATA QUALIFIER REPORT

Case Number: 31635 Project Number 03-0474 SOW Number OLC03.2, OLM04.2

Site ID. Gulf States Creosoting, Flowood, MS Date 6/07/03

Affected Samples	Compound or Fraction	Flag Used	Reason
6795	hexachlorocyclopentadiene	J	continuing calibration %D outlier
6796, 6797, 6798, 6799, 6800, 6802, 6804, 6805, 6806	2,4-dinitrophenol, 4,6-dinitro-2-methylphenol	J	continuing calibration %D outlier
6801, 6807, 6808, 6809, 6810	butylbenzylphthalate, bis(2-ethylhexyl)phthalate	J	continuing calibration %D outlier
6797, 6802, 6804, 6805, 6806, 6809	benzo(b)fluoranthene, benzo(k)fluoranthene	J	isomers could not be resolved by GC
6797	acenaphthylene, anthracene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit
6802	acenaphthylene, phenanthrene, anthracene, carbazole	J	< quantitation limit
6804	anthracene, fluoranthene, pyrene, chrysene, benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit
6805	naphthalene, 2-methylnaphthalene, 1,1'-biphenyl, acenaphthylene, acenaphthene, dibenzofuran, fluorene	J	< quantitation limit
6806	benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
6809	acenaphthylene, phenanthrene, carbazole, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit
6811	caprolactam, 1,1-biphenyl, dimethylphthalate, diethylphthalate, 4,6-dinitro-2-methylphenol, di-n-butylphthalate, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate	J	surrogate outlier
6812	4,6-dinitro-2-methylphenol	J	surrogate outlier

ORGANIC DATA QUALIFIER REPORT

Case Number:	31635 Project Number 03-0474	SOW Number	OLC03.2, OLM04.2
Site ID.	Gulf States Creosoting, Flowood, MS	Date	6/07/03

Affected Samples	Compound or Fraction	Flag Used	Reason
PAHs by GC/MS SIM			
6754	naphthalene, 2-methylnaphthalene, acenaphthene, fluorene, benzo(a)anthracene, chrysene	J	< quantitation limit
6759	naphthalene, 2-methylnaphthalene, acenaphthene, dibenzo(a,h)anthracene	J	< quantitation limit
6775	naphthalene, 2-methylnaphthalene	J	< quantitation limit
6776	naphthalene, 2-methylnaphthalene, acenaphthene, fluorene	J	< quantitation limit
6777	naphthalene, 2-methylnaphthalene	J	< quantitation limit
6792	naphthalene, 2-methylnaphthalene, fluorene	J	< quantitation limit
6793	naphthalene	J	< quantitation limit

ORGANIC DATA QUALIFIER REPORT

Case Number: 31635 Project Number 03-0474 SOW Number OLC03.2, OLM04.2

Site ID. Gulf States Creosoting, Flowood, MS Date 6/07/03

Affected Samples	Compound or Fraction	Flag Used	Reason
Pesticides			
6755	gamma-BHC (Lindane), Aroclor 1260	J	< quantitation limit
6757	Aroclor 1260	J	< quantitation limit
6759	Endosulfan II	J	< quantitation limit
6759	Endosulfan sulfate	N	%D between columns
6760	Endrin, Endrin ketone	J	surrogate outlier
6762	4,4'-DDE	J	< quantitation limit
6762	4,4'-DDE	N	%D between columns
6764	4,4'-DDE	J	< quantitation limit
6764	4,4'-DDE	N	%D between columns
6765	Endosulfan sulfate	J	< quantitation limit
6765	Endosulfan sulfate	N	%D between columns
6766	4,4'-DDE	J	< quantitation limit
6766	Endrin ketone	J	surrogate outlier
6767	gamma-BHC (Lindane)	J	< quantitation limit
6770, 6787, 6811, 6812, 6813	4,4'-DDD, 4,4'-DDE, 4,4'-DDT, Endrin, Endrin ketone, Endrin aldehyde	J	% breakdown (poor system performance)
6773	Endrin, Endrin aldehyde	J	surrogate outlier
6778	alpha-BHC	N	%D between columns
6778	alpha-BHC	J	< quantitation limit
6778	alpha-BHC, Endrin ketone	J	surrogate outlier
6779	4,4'-DDT, Endrin aldehyde	N	%D between columns
6779	4,4'-DDT, Endrin aldehyde	J	surrogate outlier

ORGANIC DATA QUALIFIER REPORT

Case Number: 31635 Project Number 03-0474 SOW Number OLC03.2, OLM04.2

Site ID. Gulf States Creosoting, Flowood, MS Date 6/07/03

Affected Samples	Compound or Fraction	Flag Used	Reason
6783	4,4'-DDT, Methoxychlor	N	%D between columns
6783	4,4'-DDT, Methoxychlor	J	surrogate outlier
6784	4,4'-DDT	J	surrogate outlier
6785	Methoxychlor	N	%D between columns
6785	4,4'-DDT, Methoxychlor	J	surrogate outlier
6786	4,4'-DDT, endrin ketone	N	%D between columns
6788	4,4'-DDT	J	surrogate outlier
6802	4,4'-DDT, Methoxychlor, Endrin aldehyde	J	surrogate outlier
6802	Methoxychlor	N	%D between columns
6805	4,4'-DDT	J	surrogate outlier
6809	Endrin aldehyde	J	surrogate outlier

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6793** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS08SD / MD No: 1XX3 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XX3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
14 U	UG/KG	Dichlorodifluoromethane
14 U	UG/KG	Chloromethane
14 U	UG/KG	Vinyl Chloride
14 U	UG/KG	Bromomethane
14 U	UG/KG	Chloroethane
14 U	UG/KG	Trichlorofluoromethane (Freon 11)
14 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
14 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
29 J	UG/KG	Acetone
14 U	UG/KG	Carbon Disulfide
14 U	UG/KG	Methyl Acetate
14 U	UG/KG	Methylene Chloride
14 U	UG/KG	trans-1,2-Dichloroethene
14 U	UG/KG	Methyl T-Butyl Ether (MTBE)
14 U	UG/KG	1,1-Dichloroethane
14 U	UG/KG	cis-1,2-Dichloroethene
14 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
14 U	UG/KG	Chloroform
14 U	UG/KG	1,1,1-Trichloroethane
14 U	UG/KG	Cyclohexane
14 U	UG/KG	Carbon Tetrachloride
14 U	UG/KG	Benzene
14 U	UG/KG	1,2-Dichloroethane
14 U	UG/KG	Trichloroethene (Trichloroethylene)
14 U	UG/KG	Methylcyclohexane
14 U	UG/KG	1,2-Dichloropropane
14 U	UG/KG	Bromodichloromethane
14 U	UG/KG	cis-1,3-Dichloropropene
14 UJ	UG/KG	Methyl Isobutyl Ketone
14 U	UG/KG	Toluene
14 U	UG/KG	trans-1,3-Dichloropropene
14 U	UG/KG	1,1,2-Trichloroethane
14 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
14 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
14 U	UG/KG	Dibromochloromethane
14 U	UG/KG	1,2-Dibromoethane (EDB)
14 U	UG/KG	Chlorobenzene
14 U	UG/KG	Ethyl Benzene
14 U	UG/KG	Total Xylenes
14 U	UG/KG	Styrene
14 U	UG/KG	Bromoform
14 U	UG/KG	Isopropylbenzene
14 U	UG/KG	1,1,2,2-Tetrachloroethane
14 U	UG/KG	1,3-Dichlorobenzene
14 U	UG/KG	1,4-Dichlorobenzene
14 U	UG/KG	1,2-Dichlorobenzene
14 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
14 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
19	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6793** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS08SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XX3
D No: 1XX3

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:50
Ending:

RESULTS	UNITS	ANALYTE
8 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6792** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS06SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XX2
D No: 1XX2

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dichlorodifluoromethane
13 U	UG/KG	Chloromethane
13 U	UG/KG	Vinyl Chloride
13 U	UG/KG	Bromomethane
13 U	UG/KG	Chloroethane
13 U	UG/KG	Trichlorofluoromethane (Freon 11)
13 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
13 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
22 J	UG/KG	Acetone
13 U	UG/KG	Carbon Disulfide
13 U	UG/KG	Methyl Acetate
13 U	UG/KG	Methylene Chloride
13 U	UG/KG	trans-1,2-Dichloroethene
13 U	UG/KG	Methyl T-Butyl Ether (MTBE)
13 U	UG/KG	1,1-Dichloroethane
13 U	UG/KG	cis-1,2-Dichloroethene
13 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
13 U	UG/KG	Chloroform
13 U	UG/KG	1,1,1-Trichloroethane
13 U	UG/KG	Cyclohexane
13 U	UG/KG	Carbon Tetrachloride
13 U	UG/KG	Benzene
13 U	UG/KG	1,2-Dichloroethane
13 U	UG/KG	Trichloroethene (Trichloroethylene)
13 U	UG/KG	Methylcyclohexane
13 U	UG/KG	1,2-Dichloropropane
13 U	UG/KG	Bromodichloromethane
13 U	UG/KG	cis-1,3-Dichloropropene
13 UJ	UG/KG	Methyl Isobutyl Ketone
13 U	UG/KG	Toluene
13 U	UG/KG	trans-1,3-Dichloropropene
13 U	UG/KG	1,1,2-Trichloroethane
13 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
13 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dibromochloromethane
13 U	UG/KG	1,2-Dibromoethane (EDB)
13 U	UG/KG	Chlorobenzene
13 U	UG/KG	Ethyl Benzene
13 U	UG/KG	Total Xylenes
13 U	UG/KG	Styrene
13 U	UG/KG	Bromoform
13 U	UG/KG	Isopropylbenzene
13 U	UG/KG	1,1,2,2-Tetrachloroethane
13 U	UG/KG	1,3-Dichlorobenzene
13 U	UG/KG	1,4-Dichlorobenzene
13 U	UG/KG	1,2-Dichlorobenzene
13 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
13 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
20	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6776** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS05SD / MD No: 1XT6 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XT6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
29 U	UG/KG	Dichlorodifluoromethane
29 U	UG/KG	Chloromethane
29 U	UG/KG	Vinyl Chloride
29 UJ	UG/KG	Bromomethane
29 U	UG/KG	Chloroethane
29 U	UG/KG	Trichlorofluoromethane (Freon 11)
29 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
29 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
51 J	UG/KG	Acetone
29 U	UG/KG	Carbon Disulfide
29 U	UG/KG	Methyl Acetate
29 U	UG/KG	Methylene Chloride
29 U	UG/KG	trans-1,2-Dichloroethene
29 U	UG/KG	Methyl T-Butyl Ether (MTBE)
29 U	UG/KG	1,1-Dichloroethane
29 U	UG/KG	cis-1,2-Dichloroethene
29 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
29 U	UG/KG	Chloroform
29 U	UG/KG	1,1,1-Trichloroethane
29 U	UG/KG	Cyclohexane
29 U	UG/KG	Carbon Tetrachloride
29 U	UG/KG	Benzene
29 U	UG/KG	1,2-Dichloroethane
29 U	UG/KG	Trichloroethene (Trichloroethylene)
29 U	UG/KG	Methylcyclohexane
29 U	UG/KG	1,2-Dichloropropane
29 U	UG/KG	Bromodichloromethane
29 U	UG/KG	cis-1,3-Dichloropropene
29 U	UG/KG	Methyl Isobutyl Ketone
29 U	UG/KG	Toluene
29 U	UG/KG	trans-1,3-Dichloropropene
29 U	UG/KG	1,1,2-Trichloroethane
29 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
29 U	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
29 U	UG/KG	Dibromochloromethane
29 U	UG/KG	1,2-Dibromoethane (EDB)
29 U	UG/KG	Chlorobenzene
29 U	UG/KG	Ethyl Benzene
29 U	UG/KG	Total Xylenes
29 U	UG/KG	Styrene
29 U	UG/KG	Bromoform
29 U	UG/KG	Isopropylbenzene
29 U	UG/KG	1,1,2,2-Tetrachloroethane
29 U	UG/KG	1,3-Dichlorobenzene
29 U	UG/KG	1,4-Dichlorobenzene
29 U	UG/KG	1,2-Dichlorobenzene
29 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
29 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
54	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6776** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS05SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XT6
D No: 1XT6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:

RESULTS	UNITS	ANALYTE
33 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6777** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS07SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XT7
D No: 1XT7
Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
12 U	UG/KG	Dichlorodifluoromethane
12 U	UG/KG	Chloromethane
12 U	UG/KG	Vinyl Chloride
12 UJ	UG/KG	Bromomethane
12 U	UG/KG	Chloroethane
12 U	UG/KG	Trichlorofluoromethane (Freon 11)
12 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
12 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
49 J	UG/KG	Acetone
12 U	UG/KG	Carbon Disulfide
12 U	UG/KG	Methyl Acetate
12 U	UG/KG	Methylene Chloride
12 U	UG/KG	trans-1,2-Dichloroethene
12 U	UG/KG	Methyl T-Butyl Ether (MTBE)
12 U	UG/KG	1,1-Dichloroethane
12 U	UG/KG	cis-1,2-Dichloroethene
12 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
12 U	UG/KG	Chloroform
12 U	UG/KG	1,1,1-Trichloroethane
12 U	UG/KG	Cyclohexane
12 U	UG/KG	Carbon Tetrachloride
12 U	UG/KG	Benzene
12 U	UG/KG	1,2-Dichloroethane
12 U	UG/KG	Trichloroethene (Trichloroethylene)
12 U	UG/KG	Methylcyclohexane
12 U	UG/KG	1,2-Dichloropropane
12 U	UG/KG	Bromodichloromethane
12 U	UG/KG	cis-1,3-Dichloropropene
12 U	UG/KG	Methyl Isobutyl Ketone
12 U	UG/KG	Toluene
12 U	UG/KG	trans-1,3-Dichloropropene
12 U	UG/KG	1,1,2-Trichloroethane
12 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
12 U	UG/KG	Methyl Butyl Ketone
12 U	UG/KG	Dibromochloromethane
12 U	UG/KG	1,2-Dibromoethane (EDB)
12 U	UG/KG	Chlorobenzene
12 U	UG/KG	Ethyl Benzene
12 U	UG/KG	Total Xylenes
12 U	UG/KG	Styrene
12 U	UG/KG	Bromoform
12 U	UG/KG	Isopropylbenzene
12 U	UG/KG	1,1,2,2-Tetrachloroethane
12 U	UG/KG	1,3-Dichlorobenzene
12 U	UG/KG	1,4-Dichlorobenzene
12 U	UG/KG	1,2-Dichlorobenzene
12 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
12 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
18	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | *NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.*
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6775** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS04SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XT5
D No: 1XT5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
70 U	UG/KG	Dichlorodifluoromethane
70 U	UG/KG	Chloromethane
70 U	UG/KG	Vinyl Chloride
70 UJ	UG/KG	Bromomethane
70 U	UG/KG	Chloroethane
70 U	UG/KG	Trichlorofluoromethane (Freon 11)
70 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
70 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
520 J	UG/KG	Acetone
70 U	UG/KG	Carbon Disulfide
70 U	UG/KG	Methyl Acetate
70 U	UG/KG	Methylene Chloride
70 U	UG/KG	trans-1,2-Dichloroethene
70 U	UG/KG	Methyl T-Butyl Ether (MTBE)
70 U	UG/KG	1,1-Dichloroethane
70 U	UG/KG	cis-1,2-Dichloroethene
88 J	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
70 U	UG/KG	Chloroform
70 U	UG/KG	1,1,1-Trichloroethane
70 U	UG/KG	Cyclohexane
70 U	UG/KG	Carbon Tetrachloride
70 U	UG/KG	Benzene
70 U	UG/KG	1,2-Dichloroethane
70 U	UG/KG	Trichloroethene (Trichloroethylene)
70 U	UG/KG	Methylcyclohexane
70 U	UG/KG	1,2-Dichloropropane
70 U	UG/KG	Bromodichloromethane
70 U	UG/KG	cis-1,3-Dichloropropene
70 UJ	UG/KG	Methyl Isobutyl Ketone
70 U	UG/KG	Toluene
70 U	UG/KG	trans-1,3-Dichloropropene
70 U	UG/KG	1,1,2-Trichloroethane
70 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
70 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
70 U	UG/KG	Dibromochloromethane
70 U	UG/KG	1,2-Dibromoethane (EDB)
70 U	UG/KG	Chlorobenzene
70 U	UG/KG	Ethyl Benzene
70 U	UG/KG	Total Xylenes
70 U	UG/KG	Styrene
70 U	UG/KG	Bromoform
70 U	UG/KG	Isopropylbenzene
70 U	UG/KG	1,1,2,2-Tetrachloroethane
70 U	UG/KG	1,3-Dichlorobenzene
70 U	UG/KG	1,4-Dichlorobenzene
70 U	UG/KG	1,2-Dichlorobenzene
70 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
70 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
78	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6775** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS04SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XT5
D No: 1XT5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:35
Ending:

RESULTS	UNITS	ANALYTE
180 J	UG/KG	UNKNOWN COMPOUND
71 NJ	UG/KG	ACETALDEHYDE

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6765** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS03SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XS5
D No: 1XS5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
75 U	UG/KG	Dichlorodifluoromethane
75 U	UG/KG	Chloromethane
75 U	UG/KG	Vinyl Chloride
75 UJ	UG/KG	Bromomethane
75 U	UG/KG	Chloroethane
75 U	UG/KG	Trichlorofluoromethane (Freon 11)
75 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
75 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
350 J	UG/KG	Acetone
51 J	UG/KG	Carbon Disulfide
75 U	UG/KG	Methyl Acetate
75 U	UG/KG	Methylene Chloride
75 U	UG/KG	trans-1,2-Dichloroethene
75 U	UG/KG	Methyl T-Butyl Ether (MTBE)
75 U	UG/KG	1,1-Dichloroethane
75 U	UG/KG	cis-1,2-Dichloroethene
75 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
75 U	UG/KG	Chloroform
75 U	UG/KG	1,1,1-Trichloroethane
75 U	UG/KG	Cyclohexane
75 U	UG/KG	Carbon Tetrachloride
75 U	UG/KG	Benzene
75 U	UG/KG	1,2-Dichloroethane
75 U	UG/KG	Trichloroethene (Trichloroethylene)
75 U	UG/KG	Methylcyclohexane
75 U	UG/KG	1,2-Dichloropropane
75 U	UG/KG	Bromodichloromethane
75 U	UG/KG	cis-1,3-Dichloropropene
75 U	UG/KG	Methyl Isobutyl Ketone
75 U	UG/KG	Toluene
75 U	UG/KG	trans-1,3-Dichloropropene
75 U	UG/KG	1,1,2-Trichloroethane
75 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
75 U	UG/KG	Methyl Butyl Ketone
75 U	UG/KG	Dibromochloromethane
75 U	UG/KG	1,2-Dibromoethane (EDB)
75 U	UG/KG	Chlorobenzene
75 U	UG/KG	Ethyl Benzene
75 U	UG/KG	Total Xylenes
75 U	UG/KG	Styrene
75 U	UG/KG	Bromoform
75 U	UG/KG	Isopropylbenzene
75 U	UG/KG	1,1,2,2-Tetrachloroethane
75 U	UG/KG	1,3-Dichlorobenzene
75 U	UG/KG	1,4-Dichlorobenzene
75 U	UG/KG	1,2-Dichlorobenzene
75 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
75 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
79	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6764** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS20SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XS4
D No: 1XS4

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:45
Ending:

RESULTS	UNITS	ANALYTE
42 NJ	UG/KG	ACETALDEHYDE
7 NJ	UG/KG	PROPANAL, 2-MEHTYL-
11 NJ	UG/KG	BUTANAL, 3-METHYL-
9 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6764** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS20SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XS4
D No: 1XS4

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
230 J	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	*Methylene Chloride*
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
23 J	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
20	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6759** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: GS02SD /

Media: SEDIMENT

Case No: 31635

MD No: 1XR9

D No: 1XR9

Inorg Contractor: SENTIN

Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/22/2003 09:50

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
34 U	UG/KG	Dichlorodifluoromethane
34 U	UG/KG	Chloromethane
34 U	UG/KG	Vinyl Chloride
34 UJ	UG/KG	Bromomethane
34 U	UG/KG	Chloroethane
34 U	UG/KG	Trichlorofluoromethane (Freon 11)
34 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
34 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
130 J	UG/KG	Acetone
34 U	UG/KG	Carbon Disulfide
34 U	UG/KG	Methyl Acetate
34 U	UG/KG	Methylene Chloride
34 U	UG/KG	trans-1,2-Dichloroethene
34 U	UG/KG	Methyl T-Butyl Ether (MTBE)
34 U	UG/KG	1,1-Dichloroethane
34 U	UG/KG	cis-1,2-Dichloroethene
34 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
34 U	UG/KG	Chloroform
34 U	UG/KG	1,1,1-Trichloroethane
34 U	UG/KG	Cyclohexane
34 U	UG/KG	Carbon Tetrachloride
34 U	UG/KG	Benzene
34 U	UG/KG	1,2-Dichloroethane
34 U	UG/KG	Trichloroethene (Trichloroethylene)
34 U	UG/KG	Methylcyclohexane
34 U	UG/KG	1,2-Dichloropropane
34 U	UG/KG	Bromodichloromethane
34 U	UG/KG	cis-1,3-Dichloropropene
34 UJ	UG/KG	Methyl Isobutyl Ketone
34 U	UG/KG	Toluene
34 U	UG/KG	trans-1,3-Dichloropropene
34 U	UG/KG	1,1,2-Trichloroethane
34 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
34 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
34 U	UG/KG	Dibromochloromethane
34 U	UG/KG	1,2-Dibromoethane (EDB)
34 U	UG/KG	Chlorobenzene
34 U	UG/KG	Ethyl Benzene
34 U	UG/KG	Total Xylenes
34 U	UG/KG	Styrene
34 U	UG/KG	Bromoform
34 U	UG/KG	Isopropylbenzene
34 U	UG/KG	1,1,2,2-Tetrachloroethane
34 U	UG/KG	1,3-Dichlorobenzene
34 U	UG/KG	1,4-Dichlorobenzene
34 U	UG/KG	1,2-Dichlorobenzene
34 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
34 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
52	%	% Moisture

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6754** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS01SD / — MD No: 1XR4 — Inorg Contractor: SENTIN
Media: SEDIMENT — D No: 1XR4 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
37 U	UG/KG	Dichlorodifluoromethane
37 U	UG/KG	Chloromethane
37 U	UG/KG	Vinyl Chloride
37 UJ	UG/KG	Bromomethane
37 U	UG/KG	Chloroethane
37 U	UG/KG	Trichlorofluoromethane (Freon 11)
37 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
37 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
94 J	UG/KG	Acetone
5 J	UG/KG	Carbon Disulfide
37 U	UG/KG	Methyl Acetate
37 U	UG/KG	Methylene Chloride
37 U	UG/KG	trans-1,2-Dichloroethene
37 U	UG/KG	Methyl T-Butyl Ether (MTBE)
37 U	UG/KG	1,1-Dichloroethane
37 U	UG/KG	cis-1,2-Dichloroethene
37 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
37 U	UG/KG	Chloroform
37 U	UG/KG	1,1,1-Trichloroethane
37 U	UG/KG	Cyclohexane
37 U	UG/KG	Carbon Tetrachloride
37 U	UG/KG	Benzene
37 U	UG/KG	1,2-Dichloroethane
37 U	UG/KG	Trichloroethene (Trichloroethylene)
37 U	UG/KG	Methylcyclohexane
37 U	UG/KG	1,2-Dichloropropane
37 U	UG/KG	Bromodichloromethane
37 U	UG/KG	cis-1,3-Dichloropropene
37 UJ	UG/KG	Methyl Isobutyl Ketone
37 U	UG/KG	Toluene
37 U	UG/KG	trans-1,3-Dichloropropene
37 U	UG/KG	1,1,2-Trichloroethane
37 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
37 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
37 U	UG/KG	Dibromochloromethane
37 U	UG/KG	1,2-Dibromoethane (EDB)
37 U	UG/KG	Chlorobenzene
37 U	UG/KG	Ethyl Benzene
37 U	UG/KG	Total Xylenes
37 U	UG/KG	Styrene
37 U	UG/KG	Bromoform
37 U	UG/KG	Isopropylbenzene
37 U	UG/KG	1,1,2,2-Tetrachloroethane
37 U	UG/KG	1,3-Dichlorobenzene
37 U	UG/KG	1,4-Dichlorobenzene
37 U	UG/KG	1,2-Dichlorobenzene
37 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
37 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
55	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6770** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS01GW / MD No: 1XT0 Inorg Contractor: SENTIN
Media: GROUNDWATER D No: 1XT0 Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:05
Ending:

RESULTS	UNITS	ANALYTE
0.50 U	UG/L	Dichlorodifluoromethane
0.50 U	UG/L	Chloromethane
0.50 U	UG/L	Vinyl Chloride
0.50 U	UG/L	Bromomethane
0.50 U	UG/L	Chloroethane
0.50 U	UG/L	Trichlorofluoromethane (Freon 11)
0.50 U	UG/L	1,1-Dichloroethene (1,1-Dichloroethylene)
0.50 U	UG/L	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
5.0 U	UG/L	Acetone
0.50 U	UG/L	Carbon Disulfide
0.50 U	UG/L	Methyl Acetate
0.50 U	UG/L	Methylene Chloride
0.50 U	UG/L	trans-1,2-Dichloroethene
0.50 U	UG/L	Methyl T-Butyl Ether (MTBE)
0.50 U	UG/L	1,1-Dichloroethane
0.50 U	UG/L	cis-1,2-Dichloroethene
6.1 UJ	UG/L	Methyl Ethyl Ketone
0.50 U	UG/L	Bromochloromethane
0.50 U	UG/L	Chloroform
0.50 U	UG/L	1,1,1-Trichloroethane
0.50 U	UG/L	Cyclohexane
0.50 U	UG/L	Carbon Tetrachloride
0.50 U	UG/L	Benzene
0.50 U	UG/L	1,2-Dichloroethane
0.50 U	UG/L	Trichloroethene (Trichloroethylene)
0.50 U	UG/L	Methylcyclohexane
0.50 U	UG/L	1,2-Dichloropropane
0.50 U	UG/L	Bromodichloromethane
0.50 U	UG/L	cis-1,3-Dichloropropene
5.0 U	UG/L	Methyl Isobutyl Ketone
0.50 U	UG/L	Toluene
0.50 U	UG/L	trans-1,3-Dichloropropene
0.50 U	UG/L	1,1,2-Trichloroethane
0.50 U	UG/L	Tetrachloroethene (Tetrachloroethylene)
5.0 U	UG/L	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
0.50 U	UG/L	Dibromochloromethane
0.50 U	UG/L	1,2-Dibromoethane (EDB)
0.50 U	UG/L	Chlorobenzene
0.50 U	UG/L	Ethyl Benzene
0.50 U	UG/L	Total Xylenes
0.50 U	UG/L	Styrene
0.50 U	UG/L	Bromoform
0.50 U	UG/L	Isopropylbenzene
0.50 U	UG/L	1,1,2,2-Tetrachloroethane
0.50 U	UG/L	1,3-Dichlorobenzene
0.50 U	UG/L	1,4-Dichlorobenzene
0.50 U	UG/L	1,2-Dichlorobenzene
0.50 U	UG/L	1,2-Dibromo-3-Chloropropane (DBCP)
0.50 U	UG/L	1,2,4-Trichlorobenzene
0.50 U	UG/L	1,2,3-Trichlorobenzene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6787** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS02GW / — MD No: 1XW7 — Inorg Contractor: SENTIN
Media: GROUNDWATER — D No: 1XW7 — Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:55
Ending:

RESULTS	UNITS	ANALYTE
0.50 U	UG/L	Dichlorodifluoromethane
0.50 U	UG/L	Chloromethane
0.50 U	UG/L	Vinyl Chloride
0.50 U	UG/L	Bromomethane
0.50 U	UG/L	Chloroethane
0.50 U	UG/L	Trichlorofluoromethane (Freon 11)
0.50 U	UG/L	1,1-Dichloroethene (1,1-Dichloroethylene)
0.50 U	UG/L	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
5.0 U	UG/L	Acetone
0.50 U	UG/L	Carbon Disulfide
0.50 U	UG/L	Methyl Acetate
0.50 U	UG/L	Methylene Chloride
0.50 U	UG/L	trans-1,2-Dichloroethene
0.50 U	UG/L	Methyl T-Butyl Ether (MTBE)
0.50 U	UG/L	1,1-Dichloroethane
0.50 U	UG/L	cis-1,2-Dichloroethene
5.0 UJ	UG/L	Methyl Ethyl Ketone
0.50 U	UG/L	Bromochloromethane
0.50 U	UG/L	Chloroform
0.50 U	UG/L	1,1,1-Trichloroethane
0.50 U	UG/L	Cyclohexane
0.50 U	UG/L	Carbon Tetrachloride
0.50 U	UG/L	Benzene
0.50 U	UG/L	1,2-Dichloroethane
0.50 U	UG/L	Trichloroethene (Trichloroethylene)
0.50 U	UG/L	Methylcyclohexane
0.50 U	UG/L	1,2-Dichloropropane
0.50 U	UG/L	Bromodichloromethane
0.50 U	UG/L	cis-1,3-Dichloropropene
5.0 U	UG/L	Methyl Isobutyl Ketone
0.50 U	UG/L	Toluene
0.50 U	UG/L	trans-1,3-Dichloropropene
0.50 U	UG/L	1,1,2-Trichloroethane
0.50 U	UG/L	Tetrachloroethene (Tetrachloroethylene)
5.0 U	UG/L	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
0.50 U	UG/L	Dibromochloromethane
0.50 U	UG/L	1,2-Dibromoethane (EDB)
0.50 U	UG/L	Chlorobenzene
0.50 U	UG/L	Ethyl Benzene
0.50 U	UG/L	Total Xylenes
0.50 U	UG/L	Styrene
0.50 U	UG/L	Bromoform
0.50 U	UG/L	Isopropylbenzene
0.50 U	UG/L	1,1,2,2-Tetrachloroethane
0.50 U	UG/L	1,3-Dichlorobenzene
0.50 U	UG/L	1,4-Dichlorobenzene
0.50 U	UG/L	1,2-Dichlorobenzene
0.50 U	UG/L	1,2-Dibromo-3-Chloropropane (DBCP)
0.50 U	UG/L	1,2,4-Trichlorobenzene
0.50 U	UG/L	1,2,3-Trichlorobenzene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6811** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS03GW / — MD No: 1XZ1 — Inorg Contractor: SENTIN
Media: GROUNDWATER — D No: 1XZ1 — Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:55
Ending:

RESULTS	UNITS	ANALYTE
0.50 U	UG/L	Dichlorodifluoromethane
0.50 U	UG/L	Chloromethane
0.50 U	UG/L	Vinyl Chloride
0.50 U	UG/L	Bromomethane
0.50 U	UG/L	Chloroethane
0.50 U	UG/L	Trichlorofluoromethane (Freon 11)
0.50 U	UG/L	1,1-Dichloroethene (1,1-Dichloroethylene)
0.50 U	UG/L	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
5.0 U	UG/L	Acetone
0.50 U	UG/L	Carbon Disulfide
0.50 U	UG/L	Methyl Acetate
0.50 U	UG/L	Methylene Chloride
0.50 U	UG/L	trans-1,2-Dichloroethene
0.50 U	UG/L	Methyl T-Butyl Ether (MTBE)
0.50 U	UG/L	1,1-Dichloroethane
0.50 U	UG/L	cis-1,2-Dichloroethene
6.9 UJ	UG/L	Methyl Ethyl Ketone
0.50 U	UG/L	Bromochloromethane
0.50 U	UG/L	Chloroform
0.50 U	UG/L	1,1,1-Trichloroethane
0.50 U	UG/L	Cyclohexane
0.50 U	UG/L	Carbon Tetrachloride
0.50 U	UG/L	Benzene
0.50 U	UG/L	1,2-Dichloroethane
0.50 U	UG/L	Trichloroethene (Trichloroethylene)
0.50 U	UG/L	Methylcyclohexane
0.50 U	UG/L	1,2-Dichloropropane
0.50 U	UG/L	Bromodichloromethane
0.50 U	UG/L	cis-1,3-Dichloropropene
5.0 U	UG/L	Methyl Isobutyl Ketone
0.50 U	UG/L	Toluene
0.50 U	UG/L	trans-1,3-Dichloropropene
0.50 U	UG/L	1,1,2-Trichloroethane
0.50 U	UG/L	Tetrachloroethene (Tetrachloroethylene)
5.0 U	UG/L	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
0.50 U	UG/L	Dibromochloromethane
0.50 U	UG/L	1,2-Dibromoethane (EDB)
0.50 U	UG/L	Chlorobenzene
0.50 U	UG/L	Ethyl Benzene
0.50 U	UG/L	Total Xylenes
0.50 U	UG/L	Styrene
0.50 U	UG/L	Bromoform
0.50 U	UG/L	Isopropylbenzene
0.50 U	UG/L	1,1,2,2-Tetrachloroethane
0.50 U	UG/L	1,3-Dichlorobenzene
0.50 U	UG/L	1,4-Dichlorobenzene
0.50 U	UG/L	1,2-Dichlorobenzene
0.50 U	UG/L	1,2-Dibromo-3-Chloropropane (DBCP)
0.50 U	UG/L	1,2,4-Trichlorobenzene
0.50 U	UG/L	1,2,3-Trichlorobenzene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6811** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS03GW / — MD No: 1XZ1 — Inorg Contractor: SENTIN
Media: GROUNDWATER — D No: 1XZ1 — Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:55
Ending:

RESULTS	UNITS	ANALYTE
1.3 NJ	UG/L	INDANE

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6812** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS04GW / MD No: 1XZ3 Inorg Contractor: SENTIN
Media: GROUNDWATER D No: 1XZ3 Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 13:20
Ending:

RESULTS	UNITS	ANALYTE
0.50 U	UG/L	Dichlorodifluoromethane
0.50 U	UG/L	Chloromethane
0.50 U	UG/L	Vinyl Chloride
0.50 U	UG/L	Bromomethane
0.50 U	UG/L	Chloroethane
0.50 U	UG/L	Trichlorofluoromethane (Freon 11)
0.50 U	UG/L	1,1-Dichloroethene (1,1-Dichloroethylene)
0.50 U	UG/L	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
5.0 U	UG/L	Acetone
0.50 U	UG/L	Carbon Disulfide
0.50 U	UG/L	Methyl Acetate
0.50 U	UG/L	Methylene Chloride
0.50 U	UG/L	trans-1,2-Dichloroethene
0.50 U	UG/L	Methyl T-Butyl Ether (MTBE)
0.50 U	UG/L	1,1-Dichloroethane
0.50 U	UG/L	cis-1,2-Dichloroethene
7.2 J	UG/L	Methyl Ethyl Ketone
0.50 U	UG/L	Bromochloromethane
0.50 U	UG/L	Chloroform
0.50 U	UG/L	1,1,1-Trichloroethane
0.50 U	UG/L	Cyclohexane
0.50 U	UG/L	Carbon Tetrachloride
0.50 U	UG/L	Benzene
0.50 U	UG/L	1,2-Dichloroethane
0.50 U	UG/L	Trichloroethene (Trichloroethylene)
0.50 U	UG/L	Methylcyclohexane
0.50 U	UG/L	1,2-Dichloropropane
0.50 U	UG/L	Bromodichloromethane
0.50 U	UG/L	cis-1,3-Dichloropropene
5.0 U	UG/L	Methyl Isobutyl Ketone
0.50 U	UG/L	Toluene
0.50 U	UG/L	trans-1,3-Dichloropropene
0.50 U	UG/L	1,1,2-Trichloroethane
0.50 U	UG/L	Tetrachloroethene (Tetrachloroethylene)
5.0 U	UG/L	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
0.50 U	UG/L	Dibromochloromethane
0.50 U	UG/L	1,2-Dibromoethane (EDB)
0.50 U	UG/L	Chlorobenzene
0.50 U	UG/L	Ethyl Benzene
0.50 U	UG/L	Total Xylenes
0.50 U	UG/L	Styrene
0.50 U	UG/L	Bromoform
0.50 U	UG/L	Isopropylbenzene
0.50 U	UG/L	1,1,2,2-Tetrachloroethane
0.50 U	UG/L	1,3-Dichlorobenzene
0.50 U	UG/L	1,4-Dichlorobenzene
0.50 U	UG/L	1,2-Dichlorobenzene
0.50 U	UG/L	1,2-Dibromo-3-Chloropropane (DBCP)
0.50 U	UG/L	1,2,4-Trichlorobenzene
0.50 U	UG/L	1,2,3-Trichlorobenzene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6813** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS05GW / — MD No: 1XZ4 — Inorg Contractor: SENTIN
Media: GROUNDWATER — D No: 1XZ4 — Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 11:45
Ending:

RESULTS	UNITS	ANALYTE
0.50 U	UG/L	Dichlorodifluoromethane
0.50 U	UG/L	Chloromethane
0.50 U	UG/L	Vinyl Chloride
0.50 U	UG/L	Bromomethane
0.50 U	UG/L	Chloroethane
0.50 U	UG/L	Trichlorofluoromethane (Freon 11)
0.50 U	UG/L	1,1-Dichloroethene (1,1-Dichloroethylene)
0.50 U	UG/L	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
5.0 U	UG/L	Acetone
0.50 U	UG/L	Carbon Disulfide
0.50 U	UG/L	Methyl Acetate
0.50 U	UG/L	Methylene Chloride
0.50 U	UG/L	trans-1,2-Dichloroethene
0.50 U	UG/L	Methyl T-Butyl Ether (MTBE)
0.50 U	UG/L	1,1-Dichloroethane
0.50 U	UG/L	cis-1,2-Dichloroethene
6.6 UJ	UG/L	Methyl Ethyl Ketone
0.50 U	UG/L	Bromochloromethane
0.50 U	UG/L	Chloroform
0.50 U	UG/L	1,1,1-Trichloroethane
0.50 U	UG/L	Cyclohexane
0.50 U	UG/L	Carbon Tetrachloride
0.50 U	UG/L	Benzene
0.50 U	UG/L	1,2-Dichloroethane
0.50 U	UG/L	Trichloroethene (Trichloroethylene)
0.50 U	UG/L	Methylcyclohexane
0.50 U	UG/L	1,2-Dichloropropane
0.50 U	UG/L	Bromodichloromethane
0.50 U	UG/L	cis-1,3-Dichloropropene
5.0 U	UG/L	Methyl Isobutyl Ketone
0.50 U	UG/L	Toluene
0.50 U	UG/L	trans-1,3-Dichloropropene
0.50 U	UG/L	1,1,2-Trichloroethane
0.50 U	UG/L	Tetrachloroethene (Tetrachloroethylene)
5.0 U	UG/L	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
0.50 U	UG/L	Dibromochloromethane
0.50 U	UG/L	1,2-Dibromoethane (EDB)
0.50 U	UG/L	Chlorobenzene
0.50 U	UG/L	Ethyl Benzene
0.50 U	UG/L	Total Xylenes
0.50 U	UG/L	Styrene
0.50 U	UG/L	Bromoform
0.50 U	UG/L	Isopropylbenzene
0.50 U	UG/L	1,1,2,2-Tetrachloroethane
0.50 U	UG/L	1,3-Dichlorobenzene
0.50 U	UG/L	1,4-Dichlorobenzene
0.50 U	UG/L	1,2-Dichlorobenzene
0.50 U	UG/L	1,2-Dibromo-3-Chloropropane (DBCP)
0.50 U	UG/L	1,2,4-Trichlorobenzene
0.50 U	UG/L	1,2,3-Trichlorobenzene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6809** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS05SS / MD No: 1XY9 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dichlorodifluoromethane
10 U	UG/KG	Chloromethane
10 U	UG/KG	Vinyl Chloride
10 UJ	UG/KG	Bromomethane
10 U	UG/KG	Chloroethane
10 U	UG/KG	Trichlorofluoromethane (Freon 11)
10 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
10 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
91 J	UG/KG	Acetone
10 U	UG/KG	Carbon Disulfide
10 U	UG/KG	Methyl Acetate
10 U	UG/KG	Methylene Chloride
10 U	UG/KG	trans-1,2-Dichloroethene
10 UJ	UG/KG	Methyl T-Butyl Ether (MTBE)
10 U	UG/KG	1,1-Dichloroethane
10 U	UG/KG	cis-1,2-Dichloroethene
10 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
10 U	UG/KG	Chloroform
10 U	UG/KG	1,1,1-Trichloroethane
10 U	UG/KG	Cyclohexane
10 U	UG/KG	Carbon Tetrachloride
10 U	UG/KG	Benzene
10 U	UG/KG	1,2-Dichloroethane
10 U	UG/KG	Trichloroethene (Trichloroethylene)
10 U	UG/KG	Methylcyclohexane
10 U	UG/KG	1,2-Dichloropropane
10 U	UG/KG	Bromodichloromethane
10 U	UG/KG	cis-1,3-Dichloropropene
10 UJ	UG/KG	Methyl Isobutyl Ketone
10 U	UG/KG	Toluene
10 U	UG/KG	trans-1,3-Dichloropropene
10 U	UG/KG	1,1,2-Trichloroethane
10 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
10 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dibromochloromethane
10 U	UG/KG	1,2-Dibromoethane (EDB)
10 U	UG/KG	Chlorobenzene
10 U	UG/KG	Ethyl Benzene
10 U	UG/KG	Total Xylenes
10 U	UG/KG	Styrene
10 U	UG/KG	Bromoform
10 U	UG/KG	Isopropylbenzene
10 U	UG/KG	1,1,2,2-Tetrachloroethane
10 U	UG/KG	1,3-Dichlorobenzene
10 U	UG/KG	1,4-Dichlorobenzene
10 U	UG/KG	1,2-Dichlorobenzene
10 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
10 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
15	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6809** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS05SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XY9
D No: 1XY9

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:15
Ending:

RESULTS	UNITS	ANALYTE
7 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-*Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.*
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6807** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS04SS / — MD No: 1XY7 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XY7 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
12 U	UG/KG	Dichlorodifluoromethane
12 U	UG/KG	Chloromethane
12 U	UG/KG	Vinyl Chloride
12 UJ	UG/KG	Bromomethane
12 U	UG/KG	Chloroethane
12 U	UG/KG	Trichlorofluoromethane (Freon 11)
12 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
12 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
28 J	UG/KG	Acetone
12 U	UG/KG	Carbon Disulfide
12 U	UG/KG	Methyl Acetate
12 U	UG/KG	Methylene Chloride
12 U	UG/KG	trans-1,2-Dichloroethene
12 UJ	UG/KG	Methyl T-Butyl Ether (MTBE)
12 U	UG/KG	1,1-Dichloroethane
12 U	UG/KG	cis-1,2-Dichloroethene
12 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
12 U	UG/KG	Chloroform
12 U	UG/KG	1,1,1-Trichloroethane
12 U	UG/KG	Cyclohexane
12 U	UG/KG	Carbon Tetrachloride
12 U	UG/KG	Benzene
12 U	UG/KG	1,2-Dichloroethane
12 U	UG/KG	Trichloroethene (Trichloroethylene)
12 U	UG/KG	Methylcyclohexane
12 U	UG/KG	1,2-Dichloropropane
12 U	UG/KG	Bromodichloromethane
12 U	UG/KG	cis-1,3-Dichloropropene
12 UJ	UG/KG	Methyl Isobutyl Ketone
12 U	UG/KG	Toluene
12 U	UG/KG	trans-1,3-Dichloropropene
12 U	UG/KG	1,1,2-Trichloroethane
12 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
12 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
12 U	UG/KG	Dibromochloromethane
12 U	UG/KG	1,2-Dibromoethane (EDB)
12 U	UG/KG	Chlorobenzene
12 U	UG/KG	Ethyl Benzene
12 U	UG/KG	Total Xylenes
12 U	UG/KG	Styrene
12 U	UG/KG	Bromoform
12 U	UG/KG	Isopropylbenzene
12 U	UG/KG	1,1,2,2-Tetrachloroethane
12 U	UG/KG	1,3-Dichlorobenzene
12 U	UG/KG	1,4-Dichlorobenzene
12 U	UG/KG	1,2-Dichlorobenzene
12 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
12 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
24	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6807** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS04SS / MD No: 1XY7 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY7 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:30
Ending:

RESULTS	UNITS	ANALYTE
19 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6805** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS07SS / MD No: 1XY5 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dichlorodifluoromethane
10 U	UG/KG	Chloromethane
10 U	UG/KG	Vinyl Chloride
10 UJ	UG/KG	Bromomethane
10 U	UG/KG	Chloroethane
10 U	UG/KG	Trichlorofluoromethane (Freon 11)
10 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
10 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
87 J	UG/KG	Acetone
10 U	UG/KG	Carbon Disulfide
10 U	UG/KG	Methyl Acetate
10 U	UG/KG	Methylene Chloride
10 U	UG/KG	trans-1,2-Dichloroethene
10 UJ	UG/KG	Methyl T-Butyl Ether (MTBE)
10 U	UG/KG	1,1-Dichloroethane
10 U	UG/KG	cis-1,2-Dichloroethene
10 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
10 U	UG/KG	Chloroform
10 U	UG/KG	1,1,1-Trichloroethane
10 U	UG/KG	Cyclohexane
10 U	UG/KG	Carbon Tetrachloride
10 U	UG/KG	Benzene
10 U	UG/KG	1,2-Dichloroethane
10 U	UG/KG	Trichloroethene (Trichloroethylene)
10 U	UG/KG	Methylcyclohexane
10 U	UG/KG	1,2-Dichloropropane
10 U	UG/KG	Bromodichloromethane
10 U	UG/KG	cis-1,3-Dichloropropene
10 UJ	UG/KG	Methyl Isobutyl Ketone
10 U	UG/KG	Toluene
10 U	UG/KG	trans-1,3-Dichloropropene
10 U	UG/KG	1,1,2-Trichloroethane
10 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
10 UJ	UG/KG	Methyl Butyl Ketone
10 U	UG/KG	Dibromochloromethane
10 U	UG/KG	1,2-Dibromoethane (EDB)
10 U	UG/KG	Chlorobenzene
10 U	UG/KG	Ethyl Benzene
10 U	UG/KG	Total Xylenes
10 U	UG/KG	Styrene
10 U	UG/KG	Bromoform
10 U	UG/KG	Isopropylbenzene
10 U	UG/KG	1,1,2,2-Tetrachloroethane
10 U	UG/KG	1,3-Dichlorobenzene
10 U	UG/KG	1,4-Dichlorobenzene
10 U	UG/KG	1,2-Dichlorobenzene
10 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
10 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
15	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6805** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS07SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XY5
D No: 1XY5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:35
Ending:

RESULTS	UNITS	ANALYTE
10 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6802** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS08SS / MD No: 1XY3 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:10
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
74 J	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 UJ	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
4	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6802** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS08SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XY3
D No: 1XY3

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:10
Ending:

RESULTS	UNITS	ANALYTE
18 J	UG/KG	2 UNKNOWN COMPOUNDS

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6800** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS03SS / MD No: 1XY1 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY1 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dichlorodifluoromethane
13 U	UG/KG	Chloromethane
13 U	UG/KG	Vinyl Chloride
13 UJ	UG/KG	Bromomethane
13 U	UG/KG	Chloroethane
13 U	UG/KG	Trichlorofluoromethane (Freon 11)
13 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
13 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
25 J	UG/KG	Acetone
13 U	UG/KG	Carbon Disulfide
13 U	UG/KG	Methyl Acetate
13 UJ	UG/KG	Methylene Chloride
13 U	UG/KG	trans-1,2-Dichloroethene
13 U	UG/KG	Methyl T-Butyl Ether (MTBE)
13 U	UG/KG	1,1-Dichloroethane
13 U	UG/KG	cis-1,2-Dichloroethene
13 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
13 U	UG/KG	Chloroform
13 U	UG/KG	1,1,1-Trichloroethane
13 U	UG/KG	Cyclohexane
13 U	UG/KG	Carbon Tetrachloride
13 U	UG/KG	Benzene
13 U	UG/KG	1,2-Dichloroethane
13 U	UG/KG	Trichloroethene (Trichloroethylene)
13 U	UG/KG	Methylcyclohexane
13 U	UG/KG	1,2-Dichloropropane
13 U	UG/KG	Bromodichloromethane
13 U	UG/KG	cis-1,3-Dichloropropene
13 UJ	UG/KG	Methyl Isobutyl Ketone
13 U	UG/KG	Toluene
13 U	UG/KG	trans-1,3-Dichloropropene
13 U	UG/KG	1,1,2-Trichloroethane
13 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
13 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dibromochloromethane
13 U	UG/KG	1,2-Dibromoethane (EDB)
13 U	UG/KG	Chlorobenzene
13 U	UG/KG	Ethyl Benzene
13 U	UG/KG	Total Xylenes
13 U	UG/KG	Styrene
13 U	UG/KG	Bromoform
13 U	UG/KG	Isopropylbenzene
13 U	UG/KG	1,1,2,2-Tetrachloroethane
13 U	UG/KG	1,3-Dichlorobenzene
13 U	UG/KG	1,4-Dichlorobenzene
13 U	UG/KG	1,2-Dichlorobenzene
13 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
13 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
24	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6800** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS03SS / MD No: 1XY1 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY1 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:40
Ending:

RESULTS	UNITS	ANALYTE
6 J	UG/KG	UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6798** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS12SS / MD No: 1XX9 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dichlorodifluoromethane
10 U	UG/KG	Chloromethane
10 U	UG/KG	Vinyl Chloride
10 U	UG/KG	Bromomethane
10 U	UG/KG	Chloroethane
10 U	UG/KG	Trichlorofluoromethane (Freon 11)
10 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
10 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
210 UJ	UG/KG	Acetone
10 U	UG/KG	Carbon Disulfide
10 U	UG/KG	Methyl Acetate
10 U	UG/KG	Methylene Chloride
10 U	UG/KG	trans-1,2-Dichloroethene
10 U	UG/KG	Methyl T-Butyl Ether (MTBE)
10 U	UG/KG	1,1-Dichloroethane
10 U	UG/KG	cis-1,2-Dichloroethene
14 J	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
10 U	UG/KG	Chloroform
10 U	UG/KG	1,1,1-Trichloroethane
10 U	UG/KG	Cyclohexane
10 U	UG/KG	Carbon Tetrachloride
10 U	UG/KG	Benzene
10 U	UG/KG	1,2-Dichloroethane
10 U	UG/KG	Trichloroethene (Trichloroethylene)
10 U	UG/KG	Methylcyclohexane
10 U	UG/KG	1,2-Dichloropropane
10 U	UG/KG	Bromodichloromethane
10 U	UG/KG	cis-1,3-Dichloropropene
10 UJ	UG/KG	Methyl Isobutyl Ketone
10 U	UG/KG	Toluene
10 U	UG/KG	trans-1,3-Dichloropropene
10 U	UG/KG	1,1,2-Trichloroethane
10 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
10 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dibromochloromethane
10 U	UG/KG	1,2-Dibromoethane (EDB)
10 U	UG/KG	Chlorobenzene
10 U	UG/KG	Ethyl Benzene
10 U	UG/KG	Total Xylenes
10 U	UG/KG	Styrene
10 U	UG/KG	Bromoform
10 U	UG/KG	Isopropylbenzene
10 U	UG/KG	1,1,2,2-Tetrachloroethane
10 U	UG/KG	1,3-Dichlorobenzene
10 U	UG/KG	1,4-Dichlorobenzene
10 U	UG/KG	1,2-Dichlorobenzene
10 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
10 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6798** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS12SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XX9
D No: 1XX9

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:40
Ending:

RESULTS	UNITS	ANALYTE
5 NJ	UG/KG	BUTANAL
18 NJ	UG/KG	HEXANAL
30 J	UG/KG	3 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6797** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS24SS / MD No: 1XX7 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX7 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
25 U	UG/KG	Dichlorodifluoromethane
25 U	UG/KG	Chloromethane
25 U	UG/KG	Vinyl Chloride
25 U	UG/KG	Bromomethane
25 U	UG/KG	Chloroethane
25 U	UG/KG	Trichlorofluoromethane (Freon 11)
25 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
25 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
220 J	UG/KG	Acetone
25 U	UG/KG	Carbon Disulfide
25 U	UG/KG	Methyl Acetate
25 U	UG/KG	Methylene Chloride
25 U	UG/KG	trans-1,2-Dichloroethene
25 U	UG/KG	Methyl T-Butyl Ether (MTBE)
25 U	UG/KG	1,1-Dichloroethane
25 U	UG/KG	cis-1,2-Dichloroethene
25 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
25 U	UG/KG	Chloroform
25 U	UG/KG	1,1,1-Trichloroethane
25 U	UG/KG	Cyclohexane
25 U	UG/KG	Carbon Tetrachloride
25 U	UG/KG	Benzene
25 U	UG/KG	1,2-Dichloroethane
25 U	UG/KG	Trichloroethene (Trichloroethylene)
25 U	UG/KG	Methylcyclohexane
25 U	UG/KG	1,2-Dichloropropane
25 U	UG/KG	Bromodichloromethane
25 U	UG/KG	cis-1,3-Dichloropropene
25 UJ	UG/KG	Methyl Isobutyl Ketone
25 U	UG/KG	Toluene
25 U	UG/KG	trans-1,3-Dichloropropene
25 U	UG/KG	1,1,2-Trichloroethane
25 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
25 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
25 U	UG/KG	Dibromochloromethane
25 U	UG/KG	1,2-Dibromoethane (EDB)
25 U	UG/KG	Chlorobenzene
25 U	UG/KG	Ethyl Benzene
25 U	UG/KG	Total Xylenes
25 U	UG/KG	Styrene
25 U	UG/KG	Bromoform
25 U	UG/KG	Isopropylbenzene
25 U	UG/KG	1,1,2,2-Tetrachloroethane
25 U	UG/KG	1,3-Dichlorobenzene
25 U	UG/KG	1,4-Dichlorobenzene
25 U	UG/KG	1,2-Dichlorobenzene
25 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
25 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
45	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6797** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS24SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XX7
D No: 1XX7

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:35
Ending:

RESULTS	UNITS	ANALYTE
150 J	UG/KG	2 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6795** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS06SS / — MD No: 1XX5 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XX5 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dichlorodifluoromethane
13 U	UG/KG	Chloromethane
13 U	UG/KG	Vinyl Chloride
13 U	UG/KG	Bromomethane
13 U	UG/KG	Chloroethane
13 U	UG/KG	Trichlorofluoromethane (Freon 11)
13 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
13 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
82 J	UG/KG	Acetone
13 U	UG/KG	Carbon Disulfide
13 U	UG/KG	Methyl Acetate
13 U	UG/KG	Methylene Chloride
13 U	UG/KG	trans-1,2-Dichloroethene
13 U	UG/KG	Methyl T-Butyl Ether (MTBE)
13 U	UG/KG	1,1-Dichloroethane
13 U	UG/KG	cis-1,2-Dichloroethene
13 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
13 U	UG/KG	Chloroform
13 U	UG/KG	1,1,1-Trichloroethane
13 U	UG/KG	Cyclohexane
13 U	UG/KG	Carbon Tetrachloride
13 U	UG/KG	Benzene
13 U	UG/KG	1,2-Dichloroethane
13 U	UG/KG	Trichloroethene (Trichloroethylene)
13 U	UG/KG	Methylcyclohexane
13 U	UG/KG	1,2-Dichloropropane
13 U	UG/KG	Bromodichloromethane
13 U	UG/KG	cis-1,3-Dichloropropene
13 UJ	UG/KG	Methyl Isobutyl Ketone
13 U	UG/KG	Toluene
13 U	UG/KG	trans-1,3-Dichloropropene
13 U	UG/KG	1,1,2-Trichloroethane
13 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
13 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dibromochloromethane
13 U	UG/KG	1,2-Dibromoethane (EDB)
13 U	UG/KG	Chlorobenzene
13 U	UG/KG	Ethyl Benzene
13 U	UG/KG	Total Xylenes
13 U	UG/KG	Styrene
13 U	UG/KG	Bromoform
13 U	UG/KG	Isopropylbenzene
13 U	UG/KG	1,1,2,2-Tetrachloroethane
13 U	UG/KG	1,3-Dichlorobenzene
13 U	UG/KG	1,4-Dichlorobenzene
13 U	UG/KG	1,2-Dichlorobenzene
13 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
13 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6795** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS06SS / MD No: 1XX5 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:40
Ending:

RESULTS	UNITS	ANALYTE
20 J	UG/KG	2 UNKNOWN COMPOUNDS
64 NJ	UG/KG	HEXANAL

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6794** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS22SS / — MD No: 1XX4 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XX4 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:42
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 U	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
110 J	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
13	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6794** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS22SS / — MD No: 1XX4 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XX4 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:42
Ending:

RESULTS	UNITS	ANALYTE
6 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6790** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS09SS / MD No: 1XX0 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dichlorodifluoromethane
13 U	UG/KG	Chloromethane
13 U	UG/KG	Vinyl Chloride
13 UJ	UG/KG	Bromomethane
13 U	UG/KG	Chloroethane
13 U	UG/KG	Trichlorofluoromethane (Freon 11)
13 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
13 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
13 UJ	UG/KG	Acetone
13 U	UG/KG	Carbon Disulfide
13 U	UG/KG	Methyl Acetate
13 U	UG/KG	Methylene Chloride
13 U	UG/KG	trans-1,2-Dichloroethene
13 UJ	UG/KG	Methyl T-Butyl Ether (MTBE)
13 U	UG/KG	1,1-Dichloroethane
13 U	UG/KG	cis-1,2-Dichloroethene
13 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
13 U	UG/KG	Chloroform
13 U	UG/KG	1,1,1-Trichloroethane
13 U	UG/KG	Cyclohexane
13 U	UG/KG	Carbon Tetrachloride
13 U	UG/KG	Benzene
13 U	UG/KG	1,2-Dichloroethane
13 U	UG/KG	Trichloroethene (Trichloroethylene)
13 U	UG/KG	Methylcyclohexane
13 U	UG/KG	1,2-Dichloropropane
13 U	UG/KG	Bromodichloromethane
13 U	UG/KG	cis-1,3-Dichloropropene
13 UJ	UG/KG	Methyl Isobutyl Ketone
13 U	UG/KG	Toluene
13 U	UG/KG	trans-1,3-Dichloropropene
13 U	UG/KG	1,1,2-Trichloroethane
13 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
13 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dibromochloromethane
13 U	UG/KG	1,2-Dibromoethane (EDB)
13 U	UG/KG	Chlorobenzene
13 U	UG/KG	Ethyl Benzene
13 U	UG/KG	Total Xylenes
13 U	UG/KG	Styrene
13 U	UG/KG	Bromoform
13 U	UG/KG	Isopropylbenzene
13 U	UG/KG	1,1,2,2-Tetrachloroethane
13 U	UG/KG	1,3-Dichlorobenzene
13 U	UG/KG	1,4-Dichlorobenzene
13 U	UG/KG	1,2-Dichlorobenzene
13 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
13 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6788** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS11SS / MD No: 1XW8 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XW8 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 U	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
220 J	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
21 J	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
7	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6788** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS11SS / — MD No: 1XW8 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XW8 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:00
Ending:

RESULTS	UNITS	ANALYTE
35 J	UG/KG	3 UNKNOWN COMPOUNDS
37 J	UG/KG	HEXANAL

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6785** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS10SS /
Media: SURFACE SOIL (0" - 12")
MD No: 1XW5 Inorg Contractor: SENTIN
D No: 1XW5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:05
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
84 J	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 U	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 U	UG/KG	Methyl Butyl Ketone
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
12	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6785** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS10SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XW5
D No: 1XW5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:05
Ending:

RESULTS	UNITS	ANALYTE
29 J	UG/KG	3 UNKNOWN COMPOUNDS
45 NJ	UG/KG	HEXANAL

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6783** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS14SS / MD No: 1XW3 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XW3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
75 J	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 U	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 U	UG/KG	Methyl Butyl Ketone
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
14	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6783** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS14SS / MD No: 1XW3 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XW3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:40
Ending:

RESULTS	UNITS	ANALYTE
12 NJ	UG/KG	ACETALDEHYDE
7 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6781** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS02SS / — MD No: 1XW1 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XW1 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:13
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
12 U	UG/KG	Dichlorodifluoromethane
12 U	UG/KG	Chloromethane
12 U	UG/KG	Vinyl Chloride
12 UJ	UG/KG	Bromomethane
12 U	UG/KG	Chloroethane
12 U	UG/KG	Trichlorofluoromethane (Freon 11)
12 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
12 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
180 J	UG/KG	Acetone
12 U	UG/KG	Carbon Disulfide
12 U	UG/KG	Methyl Acetate
12 U	UG/KG	Methylene Chloride
12 U	UG/KG	trans-1,2-Dichloroethene
12 U	UG/KG	Methyl T-Butyl Ether (MTBE)
12 U	UG/KG	1,1-Dichloroethane
12 U	UG/KG	cis-1,2-Dichloroethene
21	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
12 U	UG/KG	Chloroform
12 U	UG/KG	1,1,1-Trichloroethane
12 U	UG/KG	Cyclohexane
12 U	UG/KG	Carbon Tetrachloride
12 U	UG/KG	Benzene
12 U	UG/KG	1,2-Dichloroethane
12 U	UG/KG	Trichloroethene (Trichloroethylene)
12 U	UG/KG	Methylcyclohexane
12 U	UG/KG	1,2-Dichloropropane
12 U	UG/KG	Bromodichloromethane
12 U	UG/KG	cis-1,3-Dichloropropene
12 U	UG/KG	Methyl Isobutyl Ketone
12 U	UG/KG	Toluene
12 U	UG/KG	trans-1,3-Dichloropropene
12 U	UG/KG	1,1,2-Trichloroethane
12 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
12 U	UG/KG	Methyl Butyl Ketone
12 U	UG/KG	Dibromochloromethane
12 U	UG/KG	1,2-Dibromoethane (EDB)
12 U	UG/KG	Chlorobenzene
12 U	UG/KG	Ethyl Benzene
12 U	UG/KG	Total Xylenes
12 U	UG/KG	Styrene
12 U	UG/KG	Bromoform
12 U	UG/KG	Isopropylbenzene
12 U	UG/KG	1,1,2,2-Tetrachloroethane
12 U	UG/KG	1,3-Dichlorobenzene
12 U	UG/KG	1,4-Dichlorobenzene
12 U	UG/KG	1,2-Dichlorobenzene
12 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
12 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
23	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6781** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS02SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XW1
D No: 1XW1

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:13
Ending:

RESULTS	UNITS	ANALYTE
51 J	UG/KG	2 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6779** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS15SS / MD No: 1XT9 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XT9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dichlorodifluoromethane
10 U	UG/KG	Chloromethane
10 U	UG/KG	Vinyl Chloride
10 UJ	UG/KG	Bromomethane
10 U	UG/KG	Chloroethane
10 U	UG/KG	Trichlorofluoromethane (Freon 11)
10 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
10 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
100 J	UG/KG	Acetone
10 U	UG/KG	Carbon Disulfide
3 J	UG/KG	Methyl Acetate
10 U	UG/KG	Methylene Chloride
10 U	UG/KG	trans-1,2-Dichloroethene
10 U	UG/KG	Methyl T-Butyl Ether (MTBE)
10 U	UG/KG	1,1-Dichloroethane
10 U	UG/KG	cis-1,2-Dichloroethene
12	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
10 U	UG/KG	Chloroform
10 U	UG/KG	1,1,1-Trichloroethane
10 U	UG/KG	Cyclohexane
10 U	UG/KG	Carbon Tetrachloride
10 U	UG/KG	Benzene
10 U	UG/KG	1,2-Dichloroethane
10 U	UG/KG	Trichloroethene (Trichloroethylene)
10 U	UG/KG	Methylcyclohexane
10 U	UG/KG	1,2-Dichloropropane
10 U	UG/KG	Bromodichloromethane
10 U	UG/KG	cis-1,3-Dichloropropene
10 U	UG/KG	Methyl Isobutyl Ketone
10 U	UG/KG	Toluene
10 U	UG/KG	trans-1,3-Dichloropropene
10 U	UG/KG	1,1,2-Trichloroethane
10 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
10 U	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dibromochloromethane
10 U	UG/KG	1,2-Dibromoethane (EDB)
10 U	UG/KG	Chlorobenzene
10 U	UG/KG	Ethyl Benzene
10 U	UG/KG	Total Xylenes
10 U	UG/KG	Styrene
10 U	UG/KG	Bromoform
10 U	UG/KG	Isopropylbenzene
10 U	UG/KG	1,1,2,2-Tetrachloroethane
10 U	UG/KG	1,3-Dichlorobenzene
10 U	UG/KG	1,4-Dichlorobenzene
10 U	UG/KG	1,2-Dichlorobenzene
10 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
10 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
16	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6779** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS15SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XT9
D No: 1XT9

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:40
Ending:

RESULTS	UNITS	ANALYTE
24 NJ	UG/KG	ACETALDEHYDE
10 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6778** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS23SS / MD No: 1XT8 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XT8 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:55
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dichlorodifluoromethane
13 U	UG/KG	Chloromethane
13 U	UG/KG	Vinyl Chloride
13 UJ	UG/KG	Bromomethane
13 U	UG/KG	Chloroethane
13 U	UG/KG	Trichlorofluoromethane (Freon 11)
13 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
13 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
130 J	UG/KG	Acetone
13 U	UG/KG	Carbon Disulfide
13 U	UG/KG	Methyl Acetate
13 U	UG/KG	Methylene Chloride
13 U	UG/KG	trans-1,2-Dichloroethene
13 U	UG/KG	Methyl T-Butyl Ether (MTBE)
13 U	UG/KG	1,1-Dichloroethane
13 U	UG/KG	cis-1,2-Dichloroethene
14	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
13 U	UG/KG	Chloroform
13 U	UG/KG	1,1,1-Trichloroethane
13 U	UG/KG	Cyclohexane
13 U	UG/KG	Carbon Tetrachloride
13 U	UG/KG	Benzene
13 U	UG/KG	1,2-Dichloroethane
13 U	UG/KG	Trichloroethene (Trichloroethylene)
13 U	UG/KG	Methylcyclohexane
13 U	UG/KG	1,2-Dichloropropane
13 U	UG/KG	Bromodichloromethane
13 U	UG/KG	cis-1,3-Dichloropropene
13 U	UG/KG	Methyl Isobutyl Ketone
13 U	UG/KG	Toluene
13 U	UG/KG	trans-1,3-Dichloropropene
13 U	UG/KG	1,1,2-Trichloroethane
13 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
13 U	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dibromochloromethane
13 U	UG/KG	1,2-Dibromoethane (EDB)
13 U	UG/KG	Chlorobenzene
13 U	UG/KG	Ethyl Benzene
13 U	UG/KG	Total Xylenes
13 U	UG/KG	Styrene
13 U	UG/KG	Bromoform
13 U	UG/KG	Isopropylbenzene
13 U	UG/KG	1,1,2,2-Tetrachloroethane
13 U	UG/KG	1,3-Dichlorobenzene
13 U	UG/KG	1,4-Dichlorobenzene
13 U	UG/KG	1,2-Dichlorobenzene
13 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
13 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6778** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS23SS / — MD No: 1XT8 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XT8 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:55
Ending:

RESULTS	UNITS	ANALYTE
14 NJ	UG/KG	ACETALDEHYDE
30 J	UG/KG	3 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6773** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS13SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XT3
D No: 1XT3

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
15 U	UG/KG	Dichlorodifluoromethane
15 U	UG/KG	Chloromethane
15 U	UG/KG	Vinyl Chloride
15 UJ	UG/KG	Bromomethane
15 U	UG/KG	Chloroethane
15 U	UG/KG	Trichlorofluoromethane (Freon 11)
15 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
15 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
200 J	UG/KG	Acetone
15 U	UG/KG	Carbon Disulfide
15 U	UG/KG	Methyl Acetate
15 U	UG/KG	Methylene Chloride
15 U	UG/KG	trans-1,2-Dichloroethene
15 U	UG/KG	Methyl T-Butyl Ether (MTBE)
15 U	UG/KG	1,1-Dichloroethane
15 U	UG/KG	cis-1,2-Dichloroethene
15 J	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
15 U	UG/KG	Chloroform
15 U	UG/KG	1,1,1-Trichloroethane
15 U	UG/KG	Cyclohexane
15 U	UG/KG	Carbon Tetrachloride
15 U	UG/KG	Benzene
15 U	UG/KG	1,2-Dichloroethane
15 U	UG/KG	Trichloroethene (Trichloroethylene)
15 U	UG/KG	Methylcyclohexane
15 U	UG/KG	1,2-Dichloropropane
15 U	UG/KG	Bromodichloromethane
15 U	UG/KG	cis-1,3-Dichloropropene
15 UJ	UG/KG	Methyl Isobutyl Ketone
15 U	UG/KG	Toluene
15 U	UG/KG	trans-1,3-Dichloropropene
15 U	UG/KG	1,1,2-Trichloroethane
15 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
15 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
15 U	UG/KG	Dibromochloromethane
15 U	UG/KG	1,2-Dibromoethane (EDB)
15 U	UG/KG	Chlorobenzene
15 U	UG/KG	Ethyl Benzene
15 U	UG/KG	Total Xylenes
15 U	UG/KG	Styrene
15 U	UG/KG	Bromoform
15 U	UG/KG	Isopropylbenzene
15 U	UG/KG	1,1,2,2-Tetrachloroethane
15 U	UG/KG	1,3-Dichlorobenzene
15 U	UG/KG	1,4-Dichlorobenzene
15 U	UG/KG	1,2-Dichlorobenzene
15 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
15 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
13	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6773** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS13SS / — MD No: 1XT3 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XT3 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:15
Ending:

RESULTS	UNITS	ANALYTE
16 NJ	UG/KG	ACETALDEHYDE
13 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6772** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS01SS / MD No: 1XT2 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XT2 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
100 J	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 U	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 U	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
14	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6772** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting *Flowood, MS*
Program: SF
Id/Station: GS01SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XT2
D No: 1XT2

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:

RESULTS	UNITS	ANALYTE
19 J	UG/KG	2 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6768** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS21SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XS8
D No: 1XS8

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:05
Ending:

RESULTS	UNITS	ANALYTE
47 NJ	UG/KG	ACETALDEHYDE
7 NJ	UG/KG	PENTANAL
12 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6768** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS21SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XS8
D No: 1XS8

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:05
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
12 U	UG/KG	Dichlorodifluoromethane
12 U	UG/KG	Chloromethane
12 U	UG/KG	Vinyl Chloride
12 UJ	UG/KG	Bromomethane
12 U	UG/KG	Chloroethane
12 U	UG/KG	Trichlorofluoromethane (Freon 11)
12 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
12 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
270 J	UG/KG	Acetone
12 U	UG/KG	Carbon Disulfide
12 U	UG/KG	Methyl Acetate
12 U	UG/KG	Methylene Chloride
12 U	UG/KG	trans-1,2-Dichloroethene
12 U	UG/KG	Methyl T-Butyl Ether (MTBE)
12 U	UG/KG	1,1-Dichloroethane
12 U	UG/KG	cis-1,2-Dichloroethene
31 J	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
12 U	UG/KG	Chloroform
12 U	UG/KG	1,1,1-Trichloroethane
12 U	UG/KG	Cyclohexane
12 U	UG/KG	Carbon Tetrachloride
12 U	UG/KG	Benzene
12 U	UG/KG	1,2-Dichloroethane
12 U	UG/KG	Trichloroethene (Trichloroethylene)
12 U	UG/KG	Methylcyclohexane
12 U	UG/KG	1,2-Dichloropropane
12 U	UG/KG	Bromodichloromethane
12 U	UG/KG	cis-1,3-Dichloropropene
12 UJ	UG/KG	Methyl Isobutyl Ketone
12 U	UG/KG	Toluene
12 U	UG/KG	trans-1,3-Dichloropropene
12 U	UG/KG	1,1,2-Trichloroethane
12 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
12 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
12 U	UG/KG	Dibromochloromethane
12 U	UG/KG	1,2-Dibromoethane (EDB)
12 U	UG/KG	Chlorobenzene
12 U	UG/KG	Ethyl Benzene
12 U	UG/KG	Total Xylenes
12 U	UG/KG	Styrene
12 U	UG/KG	Bromoform
12 U	UG/KG	Isopropylbenzene
12 U	UG/KG	1,1,2,2-Tetrachloroethane
12 U	UG/KG	1,3-Dichlorobenzene
12 U	UG/KG	1,4-Dichlorobenzene
12 U	UG/KG	1,2-Dichlorobenzene
12 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
12 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
22	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6766** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS16SS /
Media: SURFACE SOIL (0" - 1")

Case No: 31635
MD No: 1XS6
D No: 1XS6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:30
Ending:

RESULTS	UNITS	ANALYTE
31 NJ	UG/KG	HEXANAL
16 J	UG/KG	2 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6766** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS16SS / — MD No: 1XS6 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XS6 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
12 U	UG/KG	Dichlorodifluoromethane
12 U	UG/KG	Chloromethane
12 U	UG/KG	Vinyl Chloride
12 UJ	UG/KG	Bromomethane
12 U	UG/KG	Chloroethane
12 U	UG/KG	Trichlorofluoromethane (Freon 11)
12 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
12 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
56 J	UG/KG	Acetone
12 U	UG/KG	Carbon Disulfide
12 U	UG/KG	Methyl Acetate
12 U	UG/KG	Methylene Chloride
12 U	UG/KG	trans-1,2-Dichloroethene
12 U	UG/KG	Methyl T-Butyl Ether (MTBE)
12 U	UG/KG	1,1-Dichloroethane
12 U	UG/KG	cis-1,2-Dichloroethene
12 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
12 U	UG/KG	Chloroform
12 U	UG/KG	1,1,1-Trichloroethane
12 U	UG/KG	Cyclohexane
12 U	UG/KG	Carbon Tetrachloride
12 U	UG/KG	Benzene
12 U	UG/KG	1,2-Dichloroethane
12 U	UG/KG	Trichloroethene (Trichloroethylene)
12 U	UG/KG	Methylcyclohexane
12 U	UG/KG	1,2-Dichloropropane
12 U	UG/KG	Bromodichloromethane
12 U	UG/KG	cis-1,3-Dichloropropene
12 U	UG/KG	Methyl Isobutyl Ketone
12 U	UG/KG	Toluene
12 U	UG/KG	trans-1,3-Dichloropropene
12 U	UG/KG	1,1,2-Trichloroethane
12 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
12 U	UG/KG	Methyl Butyl Ketone
12 U	UG/KG	Dibromochloromethane
12 U	UG/KG	1,2-Dibromoethane (EDB)
12 U	UG/KG	Chlorobenzene
12 U	UG/KG	Ethyl Benzene
12 U	UG/KG	Total Xylenes
12 U	UG/KG	Styrene
12 U	UG/KG	Bromoform
12 U	UG/KG	Isopropylbenzene
12 U	UG/KG	1,1,2,2-Tetrachloroethane
12 U	UG/KG	1,3-Dichlorobenzene
12 U	UG/KG	1,4-Dichlorobenzene
12 U	UG/KG	1,2-Dichlorobenzene
12 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
12 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6762** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS20SS / MD No: 1XS2 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XS2 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
12 U	UG/KG	Dichlorodifluoromethane
12 U	UG/KG	Chloromethane
12 U	UG/KG	Vinyl Chloride
12 UJ	UG/KG	Bromomethane
12 U	UG/KG	Chloroethane
12 U	UG/KG	Trichlorofluoromethane (Freon 11)
12 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
12 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
83 J	UG/KG	Acetone
12 U	UG/KG	Carbon Disulfide
12 U	UG/KG	Methyl Acetate
12 U	UG/KG	Methylene Chloride
12 U	UG/KG	trans-1,2-Dichloroethene
12 U	UG/KG	Methyl T-Butyl Ether (MTBE)
12 U	UG/KG	1,1-Dichloroethane
12 U	UG/KG	cis-1,2-Dichloroethene
12 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
12 U	UG/KG	Chloroform
12 U	UG/KG	1,1,1-Trichloroethane
12 U	UG/KG	Cyclohexane
12 U	UG/KG	Carbon Tetrachloride
12 U	UG/KG	Benzene
12 U	UG/KG	1,2-Dichloroethane
12 U	UG/KG	Trichloroethene (Trichloroethylene)
12 U	UG/KG	Methylcyclohexane
12 U	UG/KG	1,2-Dichloropropane
12 U	UG/KG	Bromodichloromethane
12 U	UG/KG	cis-1,3-Dichloropropene
12 U	UG/KG	Methyl Isobutyl Ketone
12 U	UG/KG	Toluene
12 U	UG/KG	trans-1,3-Dichloropropene
12 U	UG/KG	1,1,2-Trichloroethane
12 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
12 U	UG/KG	Methyl Butyl Ketone
12 U	UG/KG	Dibromochloromethane
12 U	UG/KG	1,2-Dibromoethane (EDB)
12 U	UG/KG	Chlorobenzene
12 U	UG/KG	Ethyl Benzene
12 U	UG/KG	Total Xylenes
12 U	UG/KG	Styrene
12 U	UG/KG	Bromoform
12 U	UG/KG	Isopropylbenzene
12 U	UG/KG	1,1,2,2-Tetrachloroethane
12 U	UG/KG	1,3-Dichlorobenzene
12 U	UG/KG	1,4-Dichlorobenzene
12 U	UG/KG	1,2-Dichlorobenzene
12 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
12 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6760** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS17SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XS0
D No: 1XS0

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:05
Ending:

RESULTS	UNITS	ANALYTE
38 NJ	UG/KG	ACETALDEHYDE
7 NJ	UG/KG	PROPANAL, 2-METHYL-
12 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6760** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS17SS / — MD No: 1XS0 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XS0 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:05
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dichlorodifluoromethane
13 U	UG/KG	Chloromethane
13 U	UG/KG	Vinyl Chloride
13 UJ	UG/KG	Bromomethane
13 U	UG/KG	Chloroethane
13 U	UG/KG	Trichlorofluoromethane (Freon 11)
13 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
13 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
260 J	UG/KG	Acetone
13 U	UG/KG	Carbon Disulfide
13 U	UG/KG	Methyl Acetate
13 U	UG/KG	Methylene Chloride
13 U	UG/KG	trans-1,2-Dichloroethene
13 U	UG/KG	Methyl T-Butyl Ether (MTBE)
13 U	UG/KG	1,1-Dichloroethane
13 U	UG/KG	cis-1,2-Dichloroethene
28 J	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
13 U	UG/KG	Chloroform
13 U	UG/KG	1,1,1-Trichloroethane
13 U	UG/KG	Cyclohexane
13 U	UG/KG	Carbon Tetrachloride
13 U	UG/KG	Benzene
13 U	UG/KG	1,2-Dichloroethane
13 U	UG/KG	Trichloroethene (Trichloroethylene)
13 U	UG/KG	Methylcyclohexane
13 U	UG/KG	1,2-Dichloropropane
13 U	UG/KG	Bromodichloromethane
13 U	UG/KG	cis-1,3-Dichloropropene
13 UJ	UG/KG	Methyl Isobutyl Ketone
13 U	UG/KG	Toluene
13 U	UG/KG	trans-1,3-Dichloropropene
13 U	UG/KG	1,1,2-Trichloroethane
13 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
13 UJ	UG/KG	Methyl Butyl Ketone
13 U	UG/KG	Dibromochloromethane
13 U	UG/KG	1,2-Dibromoethane (EDB)
13 U	UG/KG	Chlorobenzene
13 U	UG/KG	Ethyl Benzene
13 U	UG/KG	Total Xylenes
13 U	UG/KG	Styrene
13 U	UG/KG	Bromoform
13 U	UG/KG	Isopropylbenzene
13 U	UG/KG	1,1,2,2-Tetrachloroethane
13 U	UG/KG	1,3-Dichlorobenzene
13 U	UG/KG	1,4-Dichlorobenzene
13 U	UG/KG	1,2-Dichlorobenzene
13 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
13 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
21	%	% Moisture

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6758** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS19SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XR8
D No: 1XR8

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:30
Ending:

RESULTS	UNITS	ANALYTE
18 NJ	UG/KG	ACETALDEHYDE

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6758** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS19SS /
Media: SURFACE SOIL (0" - 12")

MD No: 1XR8 Inorg Contractor: SENTIN
D No: 1XR8 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
180 J	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
3 J	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
17 J	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
17	%	% Moisture

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6756** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS18SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XR6
D No: 1XR6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 08:40
Ending:

RESULTS	UNITS	ANALYTE
8 J	UG/KG	UNKNOWN COMPOUND
20 NJ	UG/KG	HEXANAL

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6756** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS18SS / — MD No: 1XR6 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XR6 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 08:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dichlorodifluoromethane
13 U	UG/KG	Chloromethane
13 U	UG/KG	Vinyl Chloride
13 UJ	UG/KG	Bromomethane
13 U	UG/KG	Chloroethane
13 U	UG/KG	Trichlorofluoromethane (Freon 11)
13 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
13 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
130 J	UG/KG	Acetone
13 U	UG/KG	Carbon Disulfide
13 U	UG/KG	Methyl Acetate
13 U	UG/KG	Methylene Chloride
13 U	UG/KG	trans-1,2-Dichloroethene
13 U	UG/KG	Methyl T-Butyl Ether (MTBE)
13 U	UG/KG	1,1-Dichloroethane
13 U	UG/KG	cis-1,2-Dichloroethene
14 J	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
13 U	UG/KG	Chloroform
13 U	UG/KG	1,1,1-Trichloroethane
13 U	UG/KG	Cyclohexane
13 U	UG/KG	Carbon Tetrachloride
13 U	UG/KG	Benzene
13 U	UG/KG	1,2-Dichloroethane
13 U	UG/KG	Trichloroethene (Trichloroethylene)
13 U	UG/KG	Methylcyclohexane
13 U	UG/KG	1,2-Dichloropropane
13 U	UG/KG	Bromodichloromethane
13 U	UG/KG	cis-1,3-Dichloropropene
13 UJ	UG/KG	Methyl Isobutyl Ketone
13 U	UG/KG	Toluene
13 U	UG/KG	trans-1,3-Dichloropropene
13 U	UG/KG	1,1,2-Trichloroethane
13 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
13 UJ	UG/KG	Methyl Butyl Ketone
13 U	UG/KG	Dibromochloromethane
13 U	UG/KG	1,2-Dibromoethane (EDB)
13 U	UG/KG	Chlorobenzene
13 U	UG/KG	Ethyl Benzene
13 U	UG/KG	Total Xylenes
13 U	UG/KG	Styrene
13 U	UG/KG	Bromoform
13 U	UG/KG	Isopropylbenzene
13 U	UG/KG	1,1,2,2-Tetrachloroethane
13 U	UG/KG	1,3-Dichlorobenzene
13 U	UG/KG	1,4-Dichlorobenzene
13 U	UG/KG	1,2-Dichlorobenzene
13 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
13 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
23	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6803** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF Case No: 31635

Id/Station: GS01TB /

Media: TRIP BLANK - SOIL D No: 1XX8 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 17:54
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
12 U	UG/KG	Dichlorodifluoromethane
12 U	UG/KG	Chloromethane
12 U	UG/KG	Vinyl Chloride
12 U	UG/KG	Bromomethane
12 U	UG/KG	Chloroethane
12 U	UG/KG	Trichlorofluoromethane (Freon 11)
12 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
12 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
19 J	UG/KG	Acetone
12 U	UG/KG	Carbon Disulfide
12 U	UG/KG	Methyl Acetate
12 U	UG/KG	Methylene Chloride
12 U	UG/KG	trans-1,2-Dichloroethene
12 U	UG/KG	Methyl T-Butyl Ether (MTBE)
12 U	UG/KG	1,1-Dichloroethane
12 U	UG/KG	cis-1,2-Dichloroethene
12 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
12 U	UG/KG	Chloroform
12 U	UG/KG	1,1,1-Trichloroethane
12 U	UG/KG	Cyclohexane
12 U	UG/KG	Carbon Tetrachloride
12 U	UG/KG	Benzene
12 U	UG/KG	1,2-Dichloroethane
12 U	UG/KG	Trichloroethene (Trichloroethylene)
12 U	UG/KG	Methylcyclohexane
12 U	UG/KG	1,2-Dichloropropane
12 U	UG/KG	Bromodichloromethane
12 U	UG/KG	cis-1,3-Dichloropropene
12 UJ	UG/KG	Methyl Isobutyl Ketone
12 U	UG/KG	Toluene
12 U	UG/KG	trans-1,3-Dichloropropene
12 U	UG/KG	1,1,2-Trichloroethane
12 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
12 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
12 U	UG/KG	Dibromochloromethane
12 U	UG/KG	1,2-Dibromoethane (EDB)
12 U	UG/KG	Chlorobenzene
12 U	UG/KG	Ethyl Benzene
12 U	UG/KG	Total Xylenes
12 U	UG/KG	Styrene
12 U	UG/KG	Bromoform
12 U	UG/KG	Isopropylbenzene
12 U	UG/KG	1,1,2,2-Tetrachloroethane
12 U	UG/KG	1,3-Dichlorobenzene
12 U	UG/KG	1,4-Dichlorobenzene
12 U	UG/KG	1,2-Dichlorobenzene
12 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
12 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
0	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6814** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF Case No: 31635

Id/Station: GS02TS /

Media: TRIP BLANK - SOIL D No: 1XZ2 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 15:57
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
19 U	UG/KG	Dichlorodifluoromethane
19 U	UG/KG	Chloromethane
19 U	UG/KG	Vinyl Chloride
19 UJ	UG/KG	Bromomethane
19 U	UG/KG	Chloroethane
19 U	UG/KG	Trichlorofluoromethane (Freon 11)
19 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
19 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
19 UJ	UG/KG	Acetone
19 U	UG/KG	Carbon Disulfide
19 U	UG/KG	Methyl Acetate
19 U	UG/KG	Methylene Chloride
19 U	UG/KG	trans-1,2-Dichloroethene
19 UJ	UG/KG	Methyl T-Butyl Ether (MTBE)
19 U	UG/KG	1,1-Dichloroethane
19 U	UG/KG	cis-1,2-Dichloroethene
19 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
19 U	UG/KG	Chloroform
19 U	UG/KG	1,1,1-Trichloroethane
19 U	UG/KG	Cyclohexane
19 U	UG/KG	Carbon Tetrachloride
19 U	UG/KG	Benzene
19 U	UG/KG	1,2-Dichloroethane
19 U	UG/KG	Trichloroethene (Trichloroethylene)
19 U	UG/KG	Methylcyclohexane
19 U	UG/KG	1,2-Dichloropropane
19 U	UG/KG	Bromodichloromethane
19 U	UG/KG	cis-1,3-Dichloropropene
19 UJ	UG/KG	Methyl Isobutyl Ketone
19 U	UG/KG	Toluene
19 U	UG/KG	trans-1,3-Dichloropropene
19 U	UG/KG	1,1,2-Trichloroethane
19 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
19 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
19 U	UG/KG	Dibromochloromethane
19 U	UG/KG	1,2-Dibromoethane (EDB)
19 U	UG/KG	Chlorobenzene
19 U	UG/KG	Ethyl Benzene
19 U	UG/KG	Total Xylenes
19 U	UG/KG	Styrene
19 U	UG/KG	Bromoform
19 U	UG/KG	Isopropylbenzene
19 U	UG/KG	1,1,2,2-Tetrachloroethane
19 U	UG/KG	1,3-Dichlorobenzene
19 U	UG/KG	1,4-Dichlorobenzene
19 U	UG/KG	1,2-Dichlorobenzene
19 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
19 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
0	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6771** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS01SB /
Media: SUBSURFACE SOIL (> 12") D No: 1XT1

MD No: 1XT1 Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
39 UJ	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
18	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample 6782 FY 2003 Project: 03-0474
Volatiles Scan
Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS02SB / MD No: 1XW2 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW2 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:34
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
12 J	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 U	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 U	UG/KG	Methyl Butyl Ketone
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
19	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6801** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS03SB / MD No: 1XY2 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XY2 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:55
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
23 U	UG/KG	Dichlorodifluoromethane
23 U	UG/KG	Chloromethane
23 U	UG/KG	Vinyl Chloride
23 UJ	UG/KG	Bromomethane
23 U	UG/KG	Chloroethane
23 U	UG/KG	Trichlorofluoromethane (Freon 11)
23 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
23 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
35 J	UG/KG	Acetone
23 U	UG/KG	Carbon Disulfide
23 U	UG/KG	Methyl Acetate
23 U	UG/KG	Methylene Chloride
23 U	UG/KG	trans-1,2-Dichloroethene
23 UJ	UG/KG	Methyl T-Butyl Ether (MTBE)
23 U	UG/KG	1,1-Dichloroethane
23 U	UG/KG	cis-1,2-Dichloroethene
23 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
23 U	UG/KG	Chloroform
23 U	UG/KG	1,1,1-Trichloroethane
23 U	UG/KG	Cyclohexane
23 U	UG/KG	Carbon Tetrachloride
23 U	UG/KG	Benzene
23 U	UG/KG	1,2-Dichloroethane
23 U	UG/KG	Trichloroethene (Trichloroethylene)
23 U	UG/KG	Methylcyclohexane
23 U	UG/KG	1,2-Dichloropropane
23 U	UG/KG	Bromodichloromethane
23 U	UG/KG	cis-1,3-Dichloropropene
23 UJ	UG/KG	Methyl Isobutyl Ketone
23 U	UG/KG	Toluene
23 U	UG/KG	trans-1,3-Dichloropropene
23 U	UG/KG	1,1,2-Trichloroethane
23 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
23 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
23 U	UG/KG	Dibromochloromethane
23 U	UG/KG	1,2-Dibromoethane (EDB)
23 U	UG/KG	Chlorobenzene
23 U	UG/KG	Ethyl Benzene
23 U	UG/KG	Total Xylenes
23 U	UG/KG	Styrene
23 U	UG/KG	Bromoform
23 U	UG/KG	Isopropylbenzene
23 U	UG/KG	1,1,2,2-Tetrachloroethane
23 U	UG/KG	1,3-Dichlorobenzene
23 U	UG/KG	1,4-Dichlorobenzene
23 U	UG/KG	1,2-Dichlorobenzene
23 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
23 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
28	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6808** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF Case No: 31635

Id/Station: GS04SB / MD No: 1XY8 Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (> 12") D No: 1XY8 Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/23/2003 08:40

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
15 U	UG/KG	Dichlorodifluoromethane
15 U	UG/KG	Chloromethane
15 U	UG/KG	Vinyl Chloride
15 UJ	UG/KG	Bromomethane
15 U	UG/KG	Chloroethane
15 U	UG/KG	Trichlorofluoromethane (Freon 11)
15 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
15 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
15 UJ	UG/KG	Acetone
15 U	UG/KG	Carbon Disulfide
15 U	UG/KG	Methyl Acetate
15 U	UG/KG	Methylene Chloride
15 U	UG/KG	trans-1,2-Dichloroethene
15 UJ	UG/KG	Methyl T-Butyl Ether (MTBE)
15 U	UG/KG	1,1-Dichloroethane
15 U	UG/KG	cis-1,2-Dichloroethene
15 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
15 U	UG/KG	Chloroform
15 U	UG/KG	1,1,1-Trichloroethane
15 U	UG/KG	Cyclohexane
15 U	UG/KG	Carbon Tetrachloride
15 U	UG/KG	Benzene
15 U	UG/KG	1,2-Dichloroethane
15 U	UG/KG	Trichloroethene (Trichloroethylene)
15 U	UG/KG	Methylcyclohexane
15 U	UG/KG	1,2-Dichloropropane
15 U	UG/KG	Bromodichloromethane
15 U	UG/KG	cis-1,3-Dichloropropene
15 UJ	UG/KG	Methyl Isobutyl Ketone
15 U	UG/KG	Toluene
15 U	UG/KG	trans-1,3-Dichloropropene
15 U	UG/KG	1,1,2-Trichloroethane
15 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
15 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
15 U	UG/KG	Dibromochloromethane
15 U	UG/KG	1,2-Dibromoethane (EDB)
15 U	UG/KG	Chlorobenzene
15 U	UG/KG	Ethyl Benzene
15 U	UG/KG	Total Xylenes
15 U	UG/KG	Styrene
15 U	UG/KG	Bromoform
15 U	UG/KG	Isopropylbenzene
15 U	UG/KG	1,1,2,2-Tetrachloroethane
15 U	UG/KG	1,3-Dichlorobenzene
15 U	UG/KG	1,4-Dichlorobenzene
15 U	UG/KG	1,2-Dichlorobenzene
15 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
15 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
23	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample -6810 FY 2003 Project: 03-0474

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS05SB / MD No: 1XZ0 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XZ0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:25
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
12 U	UG/KG	Dichlorodifluoromethane
12 U	UG/KG	Chloromethane
12 U	UG/KG	Vinyl Chloride
12 UJ	UG/KG	Bromomethane
12 U	UG/KG	Chloroethane
12 U	UG/KG	Trichlorofluoromethane (Freon 11)
12 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
12 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
12 UJ	UG/KG	Acetone
12 U	UG/KG	Carbon Disulfide
12 U	UG/KG	Methyl Acetate
12 U	UG/KG	Methylene Chloride
12 U	UG/KG	trans-1,2-Dichloroethene
12 UJ	UG/KG	Methyl T-Butyl Ether (MTBE)
12 U	UG/KG	1,1-Dichloroethane
12 U	UG/KG	cis-1,2-Dichloroethene
12 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
12 U	UG/KG	Chloroform
12 U	UG/KG	1,1,1-Trichloroethane
12 U	UG/KG	Cyclohexane
12 U	UG/KG	Carbon Tetrachloride
12 U	UG/KG	Benzene
12 U	UG/KG	1,2-Dichloroethane
12 U	UG/KG	Trichloroethene (Trichloroethylene)
12 U	UG/KG	Methylcyclohexane
12 U	UG/KG	1,2-Dichloropropane
12 U	UG/KG	Bromodichloromethane
12 U	UG/KG	cis-1,3-Dichloropropene
12 UJ	UG/KG	Methyl Isobutyl Ketone
12 U	UG/KG	Toluene
12 U	UG/KG	trans-1,3-Dichloropropene
12 U	UG/KG	1,1,2-Trichloroethane
12 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
12 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
12 U	UG/KG	Dibromochloromethane
12 U	UG/KG	1,2-Dibromoethane (EDB)
12 U	UG/KG	Chlorobenzene
12 U	UG/KG	Ethyl Benzene
12 U	UG/KG	Total Xylenes
12 U	UG/KG	Styrene
12 U	UG/KG	Bromoform
12 U	UG/KG	Isopropylbenzene
12 U	UG/KG	1,1,2,2-Tetrachloroethane
12 U	UG/KG	1,3-Dichlorobenzene
12 U	UG/KG	1,4-Dichlorobenzene
12 U	UG/KG	1,2-Dichlorobenzene
12 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
12 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
19	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6796** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS06SB / MD No: 1XX6 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XX6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dichlorodifluoromethane
13 U	UG/KG	Chloromethane
13 U	UG/KG	Vinyl Chloride
13 U	UG/KG	Bromomethane
13 U	UG/KG	Chloroethane
13 U	UG/KG	Trichlorofluoromethane (Freon 11)
13 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
13 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
21 J	UG/KG	Acetone
13 U	UG/KG	Carbon Disulfide
13 U	UG/KG	Methyl Acetate
13 U	UG/KG	Methylene Chloride
13 U	UG/KG	trans-1,2-Dichloroethene
13 U	UG/KG	Methyl T-Butyl Ether (MTBE)
13 U	UG/KG	1,1-Dichloroethane
13 U	UG/KG	cis-1,2-Dichloroethene
13 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
13 U	UG/KG	Chloroform
13 U	UG/KG	1,1,1-Trichloroethane
13 U	UG/KG	Cyclohexane
13 U	UG/KG	Carbon Tetrachloride
13 U	UG/KG	Benzene
13 U	UG/KG	1,2-Dichloroethane
13 U	UG/KG	Trichloroethene (Trichloroethylene)
13 U	UG/KG	Methylcyclohexane
13 U	UG/KG	1,2-Dichloropropane
13 U	UG/KG	Bromodichloromethane
13 U	UG/KG	cis-1,3-Dichloropropene
13 UJ	UG/KG	Methyl Isobutyl Ketone
13 U	UG/KG	Toluene
13 U	UG/KG	trans-1,3-Dichloropropene
13 U	UG/KG	1,1,2-Trichloroethane
13 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
13 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dibromochloromethane
13 U	UG/KG	1,2-Dibromoethane (EDB)
13 U	UG/KG	Chlorobenzene
13 U	UG/KG	Ethyl Benzene
13 U	UG/KG	Total Xylenes
13 U	UG/KG	Styrene
13 U	UG/KG	Bromoform
13 U	UG/KG	Isopropylbenzene
13 U	UG/KG	1,1,2,2-Tetrachloroethane
13 U	UG/KG	1,3-Dichlorobenzene
13 U	UG/KG	1,4-Dichlorobenzene
13 U	UG/KG	1,2-Dichlorobenzene
13 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
13 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6796** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS06SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XX6
D No: 1XX6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:50
Ending:

RESULTS	UNITS	ANALYTE
8 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6806** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS07SB / MD No: 1XY6 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XY6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dichlorodifluoromethane
13 U	UG/KG	Chloromethane
13 U	UG/KG	Vinyl Chloride
13 UJ	UG/KG	Bromomethane
13 U	UG/KG	Chloroethane
13 U	UG/KG	Trichlorofluoromethane (Freon 11)
13 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
13 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
13 UJ	UG/KG	Acetone
13 U	UG/KG	Carbon Disulfide
13 U	UG/KG	Methyl Acetate
13 U	UG/KG	Methylene Chloride
13 U	UG/KG	trans-1,2-Dichloroethene
13 UJ	UG/KG	Methyl T-Butyl Ether (MTBE)
13 U	UG/KG	1,1-Dichloroethane
13 U	UG/KG	cis-1,2-Dichloroethene
13 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
13 U	UG/KG	Chloroform
13 U	UG/KG	1,1,1-Trichloroethane
13 U	UG/KG	Cyclohexane
13 U	UG/KG	Carbon Tetrachloride
13 U	UG/KG	Benzene
13 U	UG/KG	1,2-Dichloroethane
13 U	UG/KG	Trichloroethene (Trichloroethylene)
13 U	UG/KG	Methylcyclohexane
13 U	UG/KG	1,2-Dichloropropane
13 U	UG/KG	Bromodichloromethane
13 U	UG/KG	cis-1,3-Dichloropropene
13 UJ	UG/KG	Methyl Isobutyl Ketone
13 U	UG/KG	Toluene
13 U	UG/KG	trans-1,3-Dichloropropene
13 U	UG/KG	1,1,2-Trichloroethane
13 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
13 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dibromochloromethane
13 U	UG/KG	1,2-Dibromoethane (EDB)
13 U	UG/KG	Chlorobenzene
13 U	UG/KG	Ethyl Benzene
13 U	UG/KG	Total Xylenes
13 U	UG/KG	Styrene
13 U	UG/KG	Bromoform
13 U	UG/KG	Isopropylbenzene
13 U	UG/KG	1,1,2,2-Tetrachloroethane
13 U	UG/KG	1,3-Dichlorobenzene
13 U	UG/KG	1,4-Dichlorobenzene
13 U	UG/KG	1,2-Dichlorobenzene
13 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
13 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6804** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS08SB / MD No: 1XY4 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XY4 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:20
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dichlorodifluoromethane
10 U	UG/KG	Chloromethane
10 U	UG/KG	Vinyl Chloride
10 UJ	UG/KG	Bromomethane
10 U	UG/KG	Chloroethane
10 U	UG/KG	Trichlorofluoromethane (Freon 11)
10 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
10 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
99 J	UG/KG	Acetone
10 U	UG/KG	Carbon Disulfide
10 U	UG/KG	Methyl Acetate
10 U	UG/KG	Methylene Chloride
10 U	UG/KG	trans-1,2-Dichloroethene
10 UJ	UG/KG	Methyl T-Butyl Ether (MTBE)
10 U	UG/KG	1,1-Dichloroethane
10 U	UG/KG	cis-1,2-Dichloroethene
11 J	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
10 U	UG/KG	Chloroform
10 U	UG/KG	1,1,1-Trichloroethane
10 U	UG/KG	Cyclohexane
10 U	UG/KG	Carbon Tetrachloride
10 U	UG/KG	Benzene
10 U	UG/KG	1,2-Dichloroethane
10 U	UG/KG	Trichloroethene (Trichloroethylene)
10 U	UG/KG	Methylcyclohexane
10 U	UG/KG	1,2-Dichloropropane
10 U	UG/KG	Bromodichloromethane
10 U	UG/KG	cis-1,3-Dichloropropene
10 UJ	UG/KG	Methyl Isobutyl Ketone
10 U	UG/KG	Toluene
10 U	UG/KG	trans-1,3-Dichloropropene
10 U	UG/KG	1,1,2-Trichloroethane
10 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
10 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dibromochloromethane
10 U	UG/KG	1,2-Dibromoethane (EDB)
10 U	UG/KG	Chlorobenzene
10 U	UG/KG	Ethyl Benzene
10 U	UG/KG	Total Xylenes
10 U	UG/KG	Styrene
10 U	UG/KG	Bromoform
10 U	UG/KG	Isopropylbenzene
10 U	UG/KG	1,1,2,2-Tetrachloroethane
10 U	UG/KG	1,3-Dichlorobenzene
10 U	UG/KG	1,4-Dichlorobenzene
10 U	UG/KG	1,2-Dichlorobenzene
10 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
10 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6804** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS08SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XY4
D No: 1XY4

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:20
Ending:

RESULTS	UNITS	ANALYTE
8 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6791** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS09SB / MD No: 1XX1 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XX1 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:25
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 U	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
11 UJ	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6786** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS10SB / MD No: 1XW6 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dichlorodifluoromethane
13 U	UG/KG	Chloromethane
13 U	UG/KG	Vinyl Chloride
13 UJ	UG/KG	Bromomethane
13 U	UG/KG	Chloroethane
13 U	UG/KG	Trichlorofluoromethane (Freon 11)
13 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
13 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
78 J	UG/KG	Acetone
13 U	UG/KG	Carbon Disulfide
13 U	UG/KG	Methyl Acetate
13 U	UG/KG	Methylene Chloride
13 U	UG/KG	trans-1,2-Dichloroethene
13 U	UG/KG	Methyl T-Butyl Ether (MTBE)
13 U	UG/KG	1,1-Dichloroethane
13 U	UG/KG	cis-1,2-Dichloroethene
13 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
13 U	UG/KG	Chloroform
13 U	UG/KG	1,1,1-Trichloroethane
13 U	UG/KG	Cyclohexane
13 U	UG/KG	Carbon Tetrachloride
2 J	UG/KG	Benzene
13 U	UG/KG	1,2-Dichloroethane
13 U	UG/KG	Trichloroethene (Trichloroethylene)
13 U	UG/KG	Methylcyclohexane
13 U	UG/KG	1,2-Dichloropropane
13 U	UG/KG	Bromodichloromethane
13 U	UG/KG	cis-1,3-Dichloropropene
13 U	UG/KG	Methyl Isobutyl Ketone
13 U	UG/KG	Toluene
13 U	UG/KG	trans-1,3-Dichloropropene
13 U	UG/KG	1,1,2-Trichloroethane
13 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
13 U	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dibromochloromethane
13 U	UG/KG	1,2-Dibromoethane (EDB)
13 U	UG/KG	Chlorobenzene
13 U	UG/KG	Ethyl Benzene
13 U	UG/KG	Total Xylenes
13 U	UG/KG	Styrene
13 U	UG/KG	Bromoform
13 U	UG/KG	Isopropylbenzene
13 U	UG/KG	1,1,2,2-Tetrachloroethane
13 U	UG/KG	1,3-Dichlorobenzene
13 U	UG/KG	1,4-Dichlorobenzene
13 U	UG/KG	1,2-Dichlorobenzene
13 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
13 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6786** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS10SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XW6
D No: 1XW6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:

RESULTS	UNITS	ANALYTE
25 J	UG/KG	2 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6789** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS11SB / MD No: 1XW9 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:10
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 U	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
24 J	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6799** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS12SB / MD No: 1XY0 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XY0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
11 UJ	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 UJ	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6774** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS13SB /
Media: SUBSURFACE SOIL (> 12") D No: 1XT4

MD No: 1XT4 Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:25
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dichlorodifluoromethane
10 U	UG/KG	Chloromethane
10 U	UG/KG	Vinyl Chloride
10 UJ	UG/KG	Bromomethane
10 U	UG/KG	Chloroethane
10 U	UG/KG	Trichlorofluoromethane (Freon 11)
10 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
10 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
21 UJ	UG/KG	Acetone
10 U	UG/KG	Carbon Disulfide
10 U	UG/KG	Methyl Acetate
10 U	UG/KG	Methylene Chloride
10 U	UG/KG	trans-1,2-Dichloroethene
10 U	UG/KG	Methyl T-Butyl Ether (MTBE)
10 U	UG/KG	1,1-Dichloroethane
10 U	UG/KG	cis-1,2-Dichloroethene
10 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
10 U	UG/KG	Chloroform
10 U	UG/KG	1,1,1-Trichloroethane
10 U	UG/KG	Cyclohexane
10 U	UG/KG	Carbon Tetrachloride
10 U	UG/KG	Benzene
10 U	UG/KG	1,2-Dichloroethane
10 U	UG/KG	Trichloroethene (Trichloroethylene)
10 U	UG/KG	Methylcyclohexane
10 U	UG/KG	1,2-Dichloropropane
10 U	UG/KG	Bromodichloromethane
10 U	UG/KG	cis-1,3-Dichloropropene
10 UJ	UG/KG	Methyl Isobutyl Ketone
10 U	UG/KG	Toluene
10 U	UG/KG	trans-1,3-Dichloropropene
10 U	UG/KG	1,1,2-Trichloroethane
10 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
10 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dibromochloromethane
10 U	UG/KG	1,2-Dibromoethane (EDB)
10 U	UG/KG	Chlorobenzene
10 U	UG/KG	Ethyl Benzene
10 U	UG/KG	Total Xylenes
10 U	UG/KG	Styrene
10 U	UG/KG	Bromoform
10 U	UG/KG	Isopropylbenzene
10 U	UG/KG	1,1,2,2-Tetrachloroethane
10 U	UG/KG	1,3-Dichlorobenzene
10 U	UG/KG	1,4-Dichlorobenzene
10 U	UG/KG	1,2-Dichlorobenzene
10 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
10 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
15	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6784** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS14SB / — MD No: 1XW4 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XW4 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dichlorodifluoromethane
10 U	UG/KG	Chloromethane
10 U	UG/KG	Vinyl Chloride
10 UJ	UG/KG	Bromomethane
10 U	UG/KG	Chloroethane
10 U	UG/KG	Trichlorofluoromethane (Freon 11)
10 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
10 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
55 J	UG/KG	Acetone
10 U	UG/KG	Carbon Disulfide
10 U	UG/KG	Methyl Acetate
10 U	UG/KG	Methylene Chloride
10 U	UG/KG	trans-1,2-Dichloroethene
10 U	UG/KG	Methyl T-Butyl Ether (MTBE)
10 U	UG/KG	1,1-Dichloroethane
10 U	UG/KG	cis-1,2-Dichloroethene
10 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
10 U	UG/KG	Chloroform
10 U	UG/KG	1,1,1-Trichloroethane
10 U	UG/KG	Cyclohexane
10 U	UG/KG	Carbon Tetrachloride
10 U	UG/KG	Benzene
10 U	UG/KG	1,2-Dichloroethane
10 U	UG/KG	Trichloroethene (Trichloroethylene)
10 U	UG/KG	Methylcyclohexane
10 U	UG/KG	1,2-Dichloropropane
10 U	UG/KG	Bromodichloromethane
10 U	UG/KG	cis-1,3-Dichloropropene
10 U	UG/KG	Methyl Isobutyl Ketone
10 U	UG/KG	Toluene
10 U	UG/KG	trans-1,3-Dichloropropene
10 U	UG/KG	1,1,2-Trichloroethane
10 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
10 U	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
10 U	UG/KG	Dibromochloromethane
10 U	UG/KG	1,2-Dibromoethane (EDB)
10 U	UG/KG	Chlorobenzene
10 U	UG/KG	Ethyl Benzene
10 U	UG/KG	Total Xylenes
10 U	UG/KG	Styrene
10 U	UG/KG	Bromoform
10 U	UG/KG	Isopropylbenzene
10 U	UG/KG	1,1,2,2-Tetrachloroethane
10 U	UG/KG	1,3-Dichlorobenzene
10 U	UG/KG	1,4-Dichlorobenzene
10 U	UG/KG	1,2-Dichlorobenzene
10 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
10 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
15	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6784** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS14SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XW4
D No: 1XW4

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:50
Ending:

RESULTS	UNITS	ANALYTE
8 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6780** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS15SB / MD No: 1XW0 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
67 J	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 U	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 U	UG/KG	Methyl Butyl Ketone
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6780** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS15SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XW0
D No: 1XW0

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:50
Ending:

RESULTS	UNITS	ANALYTE
20 J	UG/KG	2 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6767** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS16SB / MD No: 1XS7 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XS7 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
11 UJ	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
22	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 06/20/2003 14:10

Sample **6761** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF Case No: 31635

Id/Station: GS17SB / MD No: 1XS1 Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (> 12") D No: 1XS1 Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/22/2003 10:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
13 U	UG/KG	Dichlorodifluoromethane
13 U	UG/KG	Chloromethane
13 U	UG/KG	Vinyl Chloride
13 UJ	UG/KG	Bromomethane
13 U	UG/KG	Chloroethane
13 U	UG/KG	Trichlorofluoromethane (Freon 11)
13 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
13 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
13 U	UG/KG	Acetone
13 U	UG/KG	Carbon Disulfide
13 U	UG/KG	Methyl Acetate
13 U	UG/KG	Methylene Chloride
13 U	UG/KG	trans-1,2-Dichloroethene
13 U	UG/KG	Methyl T-Butyl Ether (MTBE)
13 U	UG/KG	1,1-Dichloroethane
13 U	UG/KG	cis-1,2-Dichloroethene
13 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
13 U	UG/KG	Chloroform
13 U	UG/KG	1,1,1-Trichloroethane
13 U	UG/KG	Cyclohexane
13 U	UG/KG	Carbon Tetrachloride
13 U	UG/KG	Benzene
13 U	UG/KG	1,2-Dichloroethane
13 U	UG/KG	Trichloroethene (Trichloroethylene)
13 U	UG/KG	Methylcyclohexane
13 U	UG/KG	1,2-Dichloropropane
13 U	UG/KG	Bromodichloromethane
13 U	UG/KG	cis-1,3-Dichloropropene
13 U	UG/KG	Methyl Isobutyl Ketone
13 U	UG/KG	Toluene
13 U	UG/KG	trans-1,3-Dichloropropene
13 U	UG/KG	1,1,2-Trichloroethane
13 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
13 U	UG/KG	Methyl Butyl Ketone
13 U	UG/KG	Dibromochloromethane
13 U	UG/KG	1,2-Dibromoethane (EDB)
13 U	UG/KG	Chlorobenzene
13 U	UG/KG	Ethyl Benzene
13 U	UG/KG	Total Xylenes
13 U	UG/KG	Styrene
13 U	UG/KG	Bromoform
13 U	UG/KG	Isopropylbenzene
13 U	UG/KG	1,1,2,2-Tetrachloroethane
13 U	UG/KG	1,3-Dichlorobenzene
13 U	UG/KG	1,4-Dichlorobenzene
13 U	UG/KG	1,2-Dichlorobenzene
13 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
13 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
22	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6755** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF Case No: 31635

Id/Station: GS18SB / MD No: 1XR5 Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (> 12") D No: 1XR5 Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/22/2003 08:50

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
14 UJ	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
25	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6757** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS19SB / MD No: 1XR7 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XR7 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
26 UJ	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 UJ	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
21	%	% Moisture

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 06/20/2003 14:10

Sample **6763** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF Case No: 31635

Id/Station: GS20SB /

Media: SUBSURFACE SOIL (> 12") D No: 1XS3

MD No: 1XS3 Inorg Contractor: SENTIN

Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/22/2003 10:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
11 U	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 U	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 U	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 U	UG/KG	Methyl Butyl Ketone
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
18	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

VOLATILES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6769** FY **2003** Project: **03-0474**

Volatiles Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS21SB / MD No: 1XS9 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XS9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dichlorodifluoromethane
11 U	UG/KG	Chloromethane
11 U	UG/KG	Vinyl Chloride
11 UJ	UG/KG	Bromomethane
11 U	UG/KG	Chloroethane
11 U	UG/KG	Trichlorofluoromethane (Freon 11)
11 U	UG/KG	1,1-Dichloroethene (1,1-Dichloroethylene)
11 U	UG/KG	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
11 UJ	UG/KG	Acetone
11 U	UG/KG	Carbon Disulfide
11 U	UG/KG	Methyl Acetate
11 U	UG/KG	Methylene Chloride
11 U	UG/KG	trans-1,2-Dichloroethene
11 U	UG/KG	Methyl T-Butyl Ether (MTBE)
11 U	UG/KG	1,1-Dichloroethane
11 U	UG/KG	cis-1,2-Dichloroethene
11 UJ	UG/KG	Methyl Ethyl Ketone
NA	UG/KG	Bromochloromethane
11 U	UG/KG	Chloroform
11 U	UG/KG	1,1,1-Trichloroethane
11 U	UG/KG	Cyclohexane
11 U	UG/KG	Carbon Tetrachloride
11 U	UG/KG	Benzene
11 U	UG/KG	1,2-Dichloroethane
11 U	UG/KG	Trichloroethene (Trichloroethylene)
11 U	UG/KG	Methylcyclohexane
11 U	UG/KG	1,2-Dichloropropane
11 U	UG/KG	Bromodichloromethane
11 U	UG/KG	cis-1,3-Dichloropropene
11 UJ	UG/KG	Methyl Isobutyl Ketone
11 U	UG/KG	Toluene
11 U	UG/KG	trans-1,3-Dichloropropene
11 U	UG/KG	1,1,2-Trichloroethane
11 U	UG/KG	Tetrachloroethene (Tetrachloroethylene)
11 UJ	UG/KG	Methyl Butyl Ketone

RESULTS	UNITS	ANALYTE
11 U	UG/KG	Dibromochloromethane
11 U	UG/KG	1,2-Dibromoethane (EDB)
11 U	UG/KG	Chlorobenzene
11 U	UG/KG	Ethyl Benzene
11 U	UG/KG	Total Xylenes
11 U	UG/KG	Styrene
11 U	UG/KG	Bromoform
11 U	UG/KG	Isopropylbenzene
11 U	UG/KG	1,1,2,2-Tetrachloroethane
11 U	UG/KG	1,3-Dichlorobenzene
11 U	UG/KG	1,4-Dichlorobenzene
11 U	UG/KG	1,2-Dichlorobenzene
11 U	UG/KG	1,2-Dibromo-3-Chloropropane (DBCP)
11 U	UG/KG	1,2,4-Trichlorobenzene
NA	UG/KG	1,2,3-Trichlorobenzene
20	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

MEMORANDUM

Date: 06/20/2003

Subject: Results of EXTRACTABLES Sample Analysis
03-0474 Gulf States Creosoting
Flowood, MS

From: Goddard, Denise

To: Striggow, Brian

Thru: QA Office

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6754** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS01SD / MD No: 1XR4 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XR4 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
89 J	UG/KG	Benzaldehyde
440 U	UG/KG	Phenol
440 U	UG/KG	bis(2-Chloroethyl) Ether
440 U	UG/KG	2-Chlorophenol
440 U	UG/KG	2-Methylphenol
440 U	UG/KG	bis(2-Chloroisopropyl) Ether
440 U	UG/KG	Acetophenone
440 U	UG/KG	(3-and/or 4-)Methylphenol
440 U	UG/KG	n-Nitrosodi-n-Propylamine
440 U	UG/KG	Hexachloroethane
440 U	UG/KG	Nitrobenzene
440 U	UG/KG	Isophorone
440 U	UG/KG	2-Nitrophenol
440 U	UG/KG	2,4-Dimethylphenol
440 U	UG/KG	bis(2-Chloroethoxy)Methane
440 U	UG/KG	2,4-Dichlorophenol
440 U	UG/KG	Naphthalene
440 U	UG/KG	4-Chloroaniline
440 U	UG/KG	Hexachlorobutadiene
440 U	UG/KG	Caprolactam
440 U	UG/KG	4-Chloro-3-Methylphenol
440 U	UG/KG	2-Methylnaphthalene
440 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
440 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
440 U	UG/KG	1,1-Biphenyl
440 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
440 U	UG/KG	Dimethyl Phthalate
440 U	UG/KG	2,6-Dinitrotoluene
440 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
440 U	UG/KG	Acenaphthene
1100 U	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol
440 U	UG/KG	Dibenzofuran
440 U	UG/KG	2,4-Dinitrotoluene
440 U	UG/KG	Diethyl Phthalate
440 U	UG/KG	Fluorene
440 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
440 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
440 U	UG/KG	4-Bromophenyl Phenyl Ether
440 U	UG/KG	Hexachlorobenzene (HCB)
440 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
440 U	UG/KG	Phenanthrene
440 U	UG/KG	Anthracene
440 U	UG/KG	Carbazole
440 U	UG/KG	Di-n-Butylphthalate
440 U	UG/KG	Fluoranthene
440 U	UG/KG	Pyrene
440 UJ	UG/KG	Benzyl Butyl Phthalate
440 U	UG/KG	3,3'-Dichlorobenzidine
440 U	UG/KG	Benzo(a)Anthracene
440 U	UG/KG	Chrysene
440 UJ	UG/KG	bis(2-Ethylhexyl) Phthalate
440 U	UG/KG	Di-n-Octylphthalate
440 U	UG/KG	Benzo(b)Fluoranthene
440 U	UG/KG	Benzo(k)Fluoranthene
440 U	UG/KG	Benzo-a-Pyrene
440 U	UG/KG	Indeno (1,2,3-cd) Pyrene
440 U	UG/KG	Dibenzo(a,h)Anthracene
92 J	UG/KG	Benzo(ghi)Perylene
55	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6754** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS01SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XR4
D No: 1XR4

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:

RESULTS	UNITS	ANALYTE
420 NJ	UG/KG	HEXADECANOIC ACID
540 NJ	UG/KG	1-HEXADECENE
1500 NJ	UG/KG	ERGOST-5-N-3-OL, (3.BETA.)-
1100 NJ	UG/KG	STIGMASTEROL
730 NJ	UG/KG	STIGMAST-4-EN-3-ONE
23000 J	UG/KG	23 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6754** FY **2003** Project: **03-0474**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS01SD / MD No: 1XR4 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XR4 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.6 J	UG/KG	2-Methylnaphthalene
0.6 J	UG/KG	Naphthalene
3	UG/KG	Acenaphthylene
0.5 J	UG/KG	Acenaphthene
0.5 J	UG/KG	Fluorene
2 J	UG/KG	Phenanthrene
3	UG/KG	Anthracene
2	UG/KG	Fluoranthene
2	UG/KG	Pyrene
1 J	UG/KG	Benzo(a)Anthracene
1 J	UG/KG	Chrysene
NA	UG/KG	Benzo(b)Fluoranthene
NA	UG/KG	Benzo(k)Fluoranthene
2	UG/KG	Benzo-a-Pyrene
NA	UG/KG	Indeno (1,2,3-cd) Pyrene
1 U	UG/KG	Dibenzo(a,h)Anthracene
NA	UG/KG	Benzo(ghi)Perylene
24 U	UG/KG	Pentachlorophenol

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6755** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS18SB / MD No: 1XR5 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XR5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 08:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
440 U	UG/KG	Benzaldehyde
440 U	UG/KG	Phenol
440 U	UG/KG	bis(2-Chloroethyl) Ether
440 U	UG/KG	2-Chlorophenol
440 U	UG/KG	2-Methylphenol
440 U	UG/KG	bis(2-Chloroisopropyl) Ether
440 U	UG/KG	Acetophenone
440 U	UG/KG	(3-and/or 4-)Methylphenol
440 U	UG/KG	n-Nitrosodi-n-Propylamine
440 U	UG/KG	Hexachloroethane
440 U	UG/KG	Nitrobenzene
440 U	UG/KG	Isophorone
440 U	UG/KG	2-Nitrophenol
440 U	UG/KG	2,4-Dimethylphenol
440 U	UG/KG	bis(2-Chloroethoxy)Methane
440 U	UG/KG	2,4-Dichlorophenol
440 U	UG/KG	Naphthalene
440 U	UG/KG	4-Chloroaniline
440 U	UG/KG	Hexachlorobutadiene
440 U	UG/KG	Caprolactam
440 U	UG/KG	4-Chloro-3-Methylphenol
440 U	UG/KG	2-Methylnaphthalene
440 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
440 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
440 U	UG/KG	1,1-Biphenyl
440 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
440 U	UG/KG	Dimethyl Phthalate
440 U	UG/KG	2,6-Dinitrotoluene
440 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
440 U	UG/KG	Acenaphthene
1100 U	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
440 U	UG/KG	Dibenzofuran
440 U	UG/KG	2,4-Dinitrotoluene
440 U	UG/KG	Diethyl Phthalate
440 U	UG/KG	Fluorene
440 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
440 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
440 U	UG/KG	4-Bromophenyl Phenyl Ether
440 U	UG/KG	Hexachlorobenzene (HCB)
440 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
440 U	UG/KG	Phenanthrene
440 U	UG/KG	Anthracene
440 U	UG/KG	Carbazole
440 U	UG/KG	Di-n-Butylphthalate
440 U	UG/KG	Fluoranthene
440 U	UG/KG	Pyrene
440 UJ	UG/KG	Benzyl Butyl Phthalate
440 U	UG/KG	3,3'-Dichlorobenzidine
440 U	UG/KG	Benzo(a)Anthracene
440 U	UG/KG	Chrysene
440 UJ	UG/KG	bis(2-Ethylhexyl) Phthalate
440 U	UG/KG	Di-n-Octylphthalate
440 U	UG/KG	Benzo(b)Fluoranthene
440 U	UG/KG	Benzo(k)Fluoranthene
440 U	UG/KG	Benzo-a-Pyrene
440 U	UG/KG	Indeno (1,2,3-cd) Pyrene
440 U	UG/KG	Dibenzo(a,h)Anthracene
440 U	UG/KG	Benzo(ghi)Perylene
25	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6755** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS18SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XR5
D No: 1XR5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 08:50
Ending:

RESULTS	UNITS	ANALYTE
120 NJ	UG/KG	1,2-BENZENEDICARBOXYLIC ACID
230 J	UG/KG	2 UNKNOWN PHTHALATES
450 J	UG/KG	2 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6756** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS18SS / — MD No: 1XR6 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XR6 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 08:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
430 U	UG/KG	Benzaldehyde
430 U	UG/KG	Phenol
430 U	UG/KG	bis(2-Chloroethyl) Ether
430 U	UG/KG	2-Chlorophenol
430 U	UG/KG	2-Methylphenol
430 U	UG/KG	bis(2-Chloroisopropyl) Ether
430 U	UG/KG	Acetophenone
430 U	UG/KG	(3-and/or 4-)Methylphenol
430 U	UG/KG	n-Nitrosodi-n-Propylamine
430 U	UG/KG	Hexachloroethane
430 U	UG/KG	Nitrobenzene
430 U	UG/KG	Isophorone
430 U	UG/KG	2-Nitrophenol
430 U	UG/KG	2,4-Dimethylphenol
430 U	UG/KG	bis(2-Chloroethoxy)Methane
430 U	UG/KG	2,4-Dichlorophenol
430 U	UG/KG	Naphthalene
430 U	UG/KG	4-Chloroaniline
430 U	UG/KG	Hexachlorobutadiene
430 U	UG/KG	Caprolactam
430 U	UG/KG	4-Chloro-3-Methylphenol
430 U	UG/KG	2-Methylnaphthalene
430 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
430 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
430 U	UG/KG	1,1-Biphenyl
430 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
430 U	UG/KG	Dimethyl Phthalate
430 U	UG/KG	2,6-Dinitrotoluene
430 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
430 U	UG/KG	Acenaphthene
1100 U	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
430 U	UG/KG	Dibenzofuran
430 U	UG/KG	2,4-Dinitrotoluene
430 U	UG/KG	Diethyl Phthalate
430 U	UG/KG	Fluorene
430 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
430 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
430 U	UG/KG	4-Bromophenyl Phenyl Ether
430 U	UG/KG	Hexachlorobenzene (HCB)
430 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
430 U	UG/KG	Phenanthrene
430 U	UG/KG	Anthracene
430 U	UG/KG	Carbazole
430 U	UG/KG	Di-n-Butylphthalate
430 U	UG/KG	Fluoranthene
430 U	UG/KG	Pyrene
430 UJ	UG/KG	Benzyl Butyl Phthalate
430 U	UG/KG	3,3'-Dichlorobenzidine
430 U	UG/KG	Benzo(a)Anthracene
430 U	UG/KG	Chrysene
430 UJ	UG/KG	bis(2-Ethylhexyl) Phthalate
430 U	UG/KG	Di-n-Octylphthalate
430 U	UG/KG	Benzo(b)Fluoranthene
430 U	UG/KG	Benzo(k)Fluoranthene
430 U	UG/KG	Benzo-a-Pyrene
430 U	UG/KG	Indeno (1,2,3-cd) Pyrene
430 U	UG/KG	Dibenzo(a,h)Anthracene
430 U	UG/KG	Benzo(ghi)Perylene
23	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6756** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS18SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XR6
D No: 1XR6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 08:40
Ending:

RESULTS	UNITS	ANALYTE
110 NJ	UG/KG	HEXADECANOIC ACID
3100 J	UG/KG	17 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6757** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS19SB / MD No: 1XR7 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XR7 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Benzaldehyde
420 U	UG/KG	Phenol
420 U	UG/KG	bis(2-Chloroethyl) Ether
420 U	UG/KG	2-Chlorophenol
420 U	UG/KG	2-Methylphenol
420 U	UG/KG	bis(2-Chloroisopropyl) Ether
420 U	UG/KG	Acetophenone
420 U	UG/KG	(3-and/or 4-)Methylphenol
420 U	UG/KG	n-Nitrosodi-n-Propylamine
420 U	UG/KG	Hexachloroethane
420 U	UG/KG	Nitrobenzene
420 U	UG/KG	Isophorone
420 U	UG/KG	2-Nitrophenol
420 U	UG/KG	2,4-Dimethylphenol
420 U	UG/KG	bis(2-Chloroethoxy)Methane
420 U	UG/KG	2,4-Dichlorophenol
420 U	UG/KG	Naphthalene
420 U	UG/KG	4-Chloroaniline
420 U	UG/KG	Hexachlorobutadiene
420 U	UG/KG	Caprolactam
420 U	UG/KG	4-Chloro-3-Methylphenol
420 U	UG/KG	2-Methylnaphthalene
420 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
420 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
420 U	UG/KG	1,1-Biphenyl
420 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
420 U	UG/KG	Dimethyl Phthalate
420 U	UG/KG	2,6-Dinitrotoluene
420 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
420 U	UG/KG	Acenaphthene
1100 U	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Dibenzofuran
420 U	UG/KG	2,4-Dinitrotoluene
420 U	UG/KG	Diethyl Phthalate
420 U	UG/KG	Fluorene
420 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
420 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
420 U	UG/KG	4-Bromophenyl Phenyl Ether
420 U	UG/KG	Hexachlorobenzene (HCB)
420 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
420 U	UG/KG	Phenanthrene
420 U	UG/KG	Anthracene
420 U	UG/KG	Carbazole
420 U	UG/KG	Di-n-Butylphthalate
420 U	UG/KG	Fluoranthene
420 U	UG/KG	Pyrene
420 UJ	UG/KG	Benzyl Butyl Phthalate
420 U	UG/KG	3,3'-Dichlorobenzidine
420 U	UG/KG	Benzo(a)Anthracene
420 U	UG/KG	Chrysene
420 UJ	UG/KG	bis(2-Ethylhexyl) Phthalate
420 U	UG/KG	Di-n-Octylphthalate
420 U	UG/KG	Benzo(b)Fluoranthene
420 U	UG/KG	Benzo(k)Fluoranthene
420 U	UG/KG	Benzo-a-Pyrene
420 U	UG/KG	Indeno (1,2,3-cd) Pyrene
420 U	UG/KG	Dibenzo(a,h)Anthracene
420 U	UG/KG	Benzo(ghi)Perylene
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6757** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS19SB / — MD No: 1XR7 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XR7 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:35
Ending:

RESULTS	UNITS	ANALYTE
95 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6758** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS19SS / MD No: 1XR8 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XR8 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
400 U	UG/KG	Benzaldehyde
400 U	UG/KG	Phenol
400 U	UG/KG	bis(2-Chloroethyl) Ether
400 U	UG/KG	2-Chlorophenol
400 U	UG/KG	2-Methylphenol
400 U	UG/KG	bis(2-Chloroisopropyl) Ether
400 U	UG/KG	Acetophenone
400 U	UG/KG	(3-and/or 4-)Methylphenol
400 U	UG/KG	n-Nitrosodi-n-Propylamine
400 U	UG/KG	Hexachloroethane
400 U	UG/KG	Nitrobenzene
400 U	UG/KG	Isophorone
400 U	UG/KG	2-Nitrophenol
400 U	UG/KG	2,4-Dimethylphenol
400 U	UG/KG	bis(2-Chloroethoxy)Methane
400 U	UG/KG	2,4-Dichlorophenol
400 U	UG/KG	Naphthalene
400 U	UG/KG	4-Chloroaniline
400 U	UG/KG	Hexachlorobutadiene
400 U	UG/KG	Caprolactam
400 U	UG/KG	4-Chloro-3-Methylphenol
400 U	UG/KG	2-Methylnaphthalene
400 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
400 U	UG/KG	2,4,6-Trichlorophenol
1000 U	UG/KG	2,4,5-Trichlorophenol
400 U	UG/KG	1,1-Biphenyl
400 U	UG/KG	2-Chloronaphthalene
1000 U	UG/KG	2-Nitroaniline
400 U	UG/KG	Dimethyl Phthalate
400 U	UG/KG	2,6-Dinitrotoluene
400 U	UG/KG	Acenaphthylene
1000 U	UG/KG	3-Nitroaniline
400 U	UG/KG	Acenaphthene
1000 U	UG/KG	2,4-Dinitrophenol
1000 U	UG/KG	4-Nitrophenol
400 U	UG/KG	Dibenzofuran
400 U	UG/KG	2,4-Dinitrotoluene
400 U	UG/KG	Diethyl Phthalate
400 U	UG/KG	Fluorene
400 U	UG/KG	4-Chlorophenyl Phenyl Ether
1000 U	UG/KG	4-Nitroaniline
1000 U	UG/KG	2-Methyl-4,6-Dinitrophenol
400 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
400 U	UG/KG	4-Bromophenyl Phenyl Ether
400 U	UG/KG	Hexachlorobenzene (HCB)
400 U	UG/KG	Atrazine
1000 U	UG/KG	Pentachlorophenol
400 U	UG/KG	Phenanthrene
400 U	UG/KG	Anthracene
400 U	UG/KG	Carbazole
400 U	UG/KG	Di-n-Butylphthalate
400 U	UG/KG	Fluoranthene
400 U	UG/KG	Pyrene
400 UJ	UG/KG	Benzyl Butyl Phthalate
400 U	UG/KG	3,3'-Dichlorobenzidine
400 U	UG/KG	Benzo(a)Anthracene
400 U	UG/KG	Chrysene
400 U	UG/KG	bis(2-Ethylhexyl) Phthalate
400 U	UG/KG	Di-n-Octylphthalate
400 U	UG/KG	Benzo(b)Fluoranthene
400 U	UG/KG	Benzo(k)Fluoranthene
400 U	UG/KG	Benzo-a-Pyrene
400 U	UG/KG	Indeno (1,2,3-cd) Pyrene
400 U	UG/KG	Dibenzo(a,h)Anthracene
400 U	UG/KG	Benzo(ghi)Perylene
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6758** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS19SS / — MD No: 1XR8 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XR8 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:30
Ending:

RESULTS	UNITS	ANALYTE
160 J	UG/KG	HEXADECANOIC ACID
390 NJ	UG/KG	TESTOSTERONE
12000 J	UG/KG	25 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6759** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS02SD / MD No: 1XR9 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XR9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
410 U	UG/KG	Benzaldehyde
410 U	UG/KG	Phenol
410 U	UG/KG	bis(2-Chloroethyl) Ether
410 U	UG/KG	2-Chlorophenol
410 U	UG/KG	2-Methylphenol
410 U	UG/KG	bis(2-Chloroisopropyl) Ether
410 U	UG/KG	Acetophenone
410 U	UG/KG	(3-and/or 4-)Methylphenol
410 U	UG/KG	n-Nitrosodi-n-Propylamine
410 U	UG/KG	Hexachloroethane
410 U	UG/KG	Nitrobenzene
410 U	UG/KG	Isophorone
410 U	UG/KG	2-Nitrophenol
410 U	UG/KG	2,4-Dimethylphenol
410 U	UG/KG	bis(2-Chloroethoxy)Methane
410 U	UG/KG	2,4-Dichlorophenol
410 U	UG/KG	Naphthalene
410 U	UG/KG	4-Chloroaniline
410 U	UG/KG	Hexachlorobutadiene
410 U	UG/KG	Caprolactam
410 U	UG/KG	4-Chloro-3-Methylphenol
410 U	UG/KG	2-Methylnaphthalene
410 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
410 U	UG/KG	2,4,6-Trichlorophenol
1000 U	UG/KG	2,4,5-Trichlorophenol
410 U	UG/KG	1,1-Biphenyl
410 U	UG/KG	2-Chloronaphthalene
1000 U	UG/KG	2-Nitroaniline
410 U	UG/KG	Dimethyl Phthalate
410 U	UG/KG	2,6-Dinitrotoluene
410 U	UG/KG	Acenaphthylene
1000 U	UG/KG	3-Nitroaniline
410 U	UG/KG	Acenaphthene
1000 U	UG/KG	2,4-Dinitrophenol
1000 U	UG/KG	4-Nitrophenol
410 U	UG/KG	Dibenzofuran
410 U	UG/KG	2,4-Dinitrotoluene
410 U	UG/KG	Diethyl Phthalate
410 U	UG/KG	Fluorene
410 U	UG/KG	4-Chlorophenyl Phenyl Ether
1000 U	UG/KG	4-Nitroaniline
1000 U	UG/KG	2-Methyl-4,6-Dinitrophenol
410 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
410 U	UG/KG	4-Bromophenyl Phenyl Ether
410 U	UG/KG	Hexachlorobenzene (HCB)
410 U	UG/KG	Atrazine
1000 U	UG/KG	Pentachlorophenol
410 U	UG/KG	Phenanthrene
410 U	UG/KG	Anthracene
410 U	UG/KG	Carbazole
410 U	UG/KG	Di-n-Butylphthalate
410 U	UG/KG	Fluoranthene
410 U	UG/KG	Pyrene
410 UJ	UG/KG	Benzyl Butyl Phthalate
410 UJ	UG/KG	3,3'-Dichlorobenzidine
410 U	UG/KG	Benzo(a)Anthracene
410 U	UG/KG	Chrysene
410 U	UG/KG	bis(2-Ethylhexyl) Phthalate
410 U	UG/KG	Di-n-Octylphthalate
410 U	UG/KG	Benzo(b)Fluoranthene
410 U	UG/KG	Benzo(k)Fluoranthene
410 U	UG/KG	Benzo-a-Pyrene
410 U	UG/KG	Indeno (1,2,3-cd) Pyrene
410 U	UG/KG	Dibenzo(a,h)Anthracene
410 U	UG/KG	Benzo(ghi)Perylene
52	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6759** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS02SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XR9
D No: 1XR9

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:50
Ending:

RESULTS	UNITS	ANALYTE
1400 NJ	UG/KG	.GAMMA.-SITOSTEROL
92000 J	UG/KG	28 UNIDENTIFIED COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6759** FY **2003** Project: **03-0474**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS02SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XR9
D No: 1XR9

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.9 J	UG/KG	2-Methylnaphthalene
0.6 J	UG/KG	Naphthalene
2	UG/KG	Acenaphthylene
1 J	UG/KG	Acenaphthene
2	UG/KG	Fluorene
12	UG/KG	Phenanthrene
7	UG/KG	Anthracene
21	UG/KG	Fluoranthene
15	UG/KG	Pyrene
7	UG/KG	Benzo(a)Anthracene
10	UG/KG	Chrysene
NA	UG/KG	Benzo(b)Fluoranthene
NA	UG/KG	Benzo(k)Fluoranthene
4	UG/KG	Benzo-a-Pyrene
NA	UG/KG	Indeno (1,2,3-cd) Pyrene
1 J	UG/KG	Dibenzo(a,h)Anthracene
NA	UG/KG	Benzo(ghi)Perylene
22 U	UG/KG	Pentachlorophenol

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6760** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS17SS / MD No: 1XS0 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XS0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:05
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Benzaldehyde
420 U	UG/KG	Phenol
420 U	UG/KG	bis(2-Chloroethyl) Ether
420 U	UG/KG	2-Chlorophenol
420 U	UG/KG	2-Methylphenol
420 U	UG/KG	bis(2-Chloroisopropyl) Ether
420 U	UG/KG	Acetophenone
420 U	UG/KG	(3-and/or 4-)Methylphenol
420 U	UG/KG	n-Nitrosodi-n-Propylamine
420 U	UG/KG	Hexachloroethane
420 U	UG/KG	Nitrobenzene
420 U	UG/KG	Isophorone
420 U	UG/KG	2-Nitrophenol
420 U	UG/KG	2,4-Dimethylphenol
420 U	UG/KG	bis(2-Chloroethoxy)Methane
420 U	UG/KG	2,4-Dichlorophenol
420 U	UG/KG	Naphthalene
420 U	UG/KG	4-Chloroaniline
420 U	UG/KG	Hexachlorobutadiene
420 U	UG/KG	Caprolactam
420 U	UG/KG	4-Chloro-3-Methylphenol
420 U	UG/KG	2-Methylnaphthalene
420 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
420 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
420 U	UG/KG	1,1-Biphenyl
420 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
420 U	UG/KG	Dimethyl Phthalate
420 U	UG/KG	2,6-Dinitrotoluene
270 J	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
420 U	UG/KG	Acenaphthene
1100 U	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Dibenzofuran
420 U	UG/KG	2,4-Dinitrotoluene
420 U	UG/KG	Diethyl Phthalate
420 U	UG/KG	Fluorene
420 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
420 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
420 U	UG/KG	4-Bromophenyl Phenyl Ether
420 U	UG/KG	Hexachlorobenzene (HCB)
420 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
250 J	UG/KG	Phenanthrene
380 J	UG/KG	Anthracene
130 J	UG/KG	Carbazole
420 U	UG/KG	Di-n-Butylphthalate
2500	UG/KG	Fluoranthene
1700	UG/KG	Pyrene
420 UJ	UG/KG	Benzyl Butyl Phthalate
420 UJ	UG/KG	3,3'-Dichlorobenzidine
1000	UG/KG	Benzo(a)Anthracene
1600	UG/KG	Chrysene
420 U	UG/KG	bis(2-Ethylhexyl) Phthalate
420 U	UG/KG	Di-n-Octylphthalate
2600 J	UG/KG	Benzo(b)Fluoranthene
2700 J	UG/KG	Benzo(k)Fluoranthene
1000	UG/KG	Benzo-a-Pyrene
890	UG/KG	Indeno (1,2,3-cd) Pyrene
330 J	UG/KG	Dibenzo(a,h)Anthracene
290 J	UG/KG	Benzo(ghi)Perylene
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
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R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6760** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS17SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XS0
D No: 1XS0

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:05
Ending:

RESULTS	UNITS	ANALYTE
210 NJ	UG/KG	NAPHTHALENE, 2-PHENYL-
510 NJ	UG/KG	11H-BENZO [B] FLUORENE
390 NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
310 NJ	UG/KG	BENZO [B] NAPHTHO [2,1-D] THIOPHENE
310 NJ	UG/KG	CHRYSENE, 5-METHYL-
800 NJ	UG/KG	5,12-NAPHTHACENEDIONE
880 NJ	UG/KG	BENZO [E] PYRENE
650 NJ	UG/KG	CHOLESTEROL
290 NJ	UG/KG	1,2:3,4-DIBENZPYRENE
970 J	UG/KG	3 UNKNOWN PAHS
5900 J	UG/KG	16 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6761** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS17SB / MD No: 1XS1 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XS1 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:20
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Benzaldehyde
420 U	UG/KG	Phenol
420 U	UG/KG	bis(2-Chloroethyl) Ether
420 U	UG/KG	2-Chlorophenol
420 U	UG/KG	2-Methylphenol
420 U	UG/KG	bis(2-Chloroisopropyl) Ether
420 U	UG/KG	Acetophenone
420 U	UG/KG	(3-and/or 4-)Methylphenol
420 U	UG/KG	n-Nitrosodi-n-Propylamine
420 U	UG/KG	Hexachloroethane
420 U	UG/KG	Nitrobenzene
420 U	UG/KG	Isophorone
420 U	UG/KG	2-Nitrophenol
420 U	UG/KG	2,4-Dimethylphenol
420 U	UG/KG	bis(2-Chloroethoxy)Methane
420 U	UG/KG	2,4-Dichlorophenol
420 U	UG/KG	Naphthalene
420 U	UG/KG	4-Chloroaniline
420 U	UG/KG	Hexachlorobutadiene
420 U	UG/KG	Caprolactam
420 U	UG/KG	4-Chloro-3-Methylphenol
420 U	UG/KG	2-Methylnaphthalene
420 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
420 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
420 U	UG/KG	1,1-Biphenyl
420 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
420 U	UG/KG	Dimethyl Phthalate
420 U	UG/KG	2,6-Dinitrotoluene
420 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
420 U	UG/KG	Acenaphthene
1100 U	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Dibenzofuran
420 U	UG/KG	2,4-Dinitrotoluene
420 U	UG/KG	Diethyl Phthalate
420 U	UG/KG	Fluorene
420 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
420 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
420 U	UG/KG	4-Bromophenyl Phenyl Ether
420 U	UG/KG	Hexachlorobenzene (HCB)
420 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
420 U	UG/KG	Phenanthrene
420 U	UG/KG	Anthracene
420 U	UG/KG	Carbazole
420 U	UG/KG	Di-n-Butylphthalate
420 U	UG/KG	Fluoranthene
420 U	UG/KG	Pyrene
420 UJ	UG/KG	Benzyl Butyl Phthalate
420 UJ	UG/KG	3,3'-Dichlorobenzidine
420 U	UG/KG	Benzo(a)Anthracene
420 U	UG/KG	Chrysene
420 U	UG/KG	bis(2-Ethylhexyl) Phthalate
420 U	UG/KG	Di-n-Octylphthalate
41 J	UG/KG	Benzo(b)Fluoranthene
43 J	UG/KG	Benzo(k)Fluoranthene
420 U	UG/KG	Benzo-a-Pyrene
420 U	UG/KG	Indeno (1,2,3-cd) Pyrene
420 U	UG/KG	Dibenzo(a,h)Anthracene
420 U	UG/KG	Benzo(ghi)Perylene
22	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6762** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS20SS / MD No: 1XS2 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XS2 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Benzaldehyde
420 U	UG/KG	Phenol
420 U	UG/KG	bis(2-Chloroethyl) Ether
420 U	UG/KG	2-Chlorophenol
420 U	UG/KG	2-Methylphenol
420 U	UG/KG	bis(2-Chloroisopropyl) Ether
420 U	UG/KG	Acetophenone
420 U	UG/KG	(3-and/or 4-)Methylphenol
420 U	UG/KG	n-Nitrosodi-n-Propylamine
420 U	UG/KG	Hexachloroethane
420 U	UG/KG	Nitrobenzene
420 U	UG/KG	Isophorone
420 U	UG/KG	2-Nitrophenol
420 U	UG/KG	2,4-Dimethylphenol
420 U	UG/KG	bis(2-Chloroethoxy)Methane
420 U	UG/KG	2,4-Dichlorophenol
420 U	UG/KG	Naphthalene
420 U	UG/KG	4-Chloroaniline
420 U	UG/KG	Hexachlorobutadiene
420 U	UG/KG	Caprolactam
420 U	UG/KG	4-Chloro-3-Methylphenol
420 U	UG/KG	2-Methylnaphthalene
420 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
420 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
420 U	UG/KG	1,1-Biphenyl
420 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
420 U	UG/KG	Dimethyl Phthalate
420 U	UG/KG	2,6-Dinitrotoluene
420 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
420 U	UG/KG	Acenaphthene
1100 U	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Dibenzofuran
420 U	UG/KG	2,4-Dinitrotoluene
420 U	UG/KG	Diethyl Phthalate
420 U	UG/KG	Fluorene
420 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
420 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
420 U	UG/KG	4-Bromophenyl Phenyl Ether
420 U	UG/KG	Hexachlorobenzene (HCB)
420 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
420 U	UG/KG	Phenanthrene
420 U	UG/KG	Anthracene
420 U	UG/KG	Carbazole
420 U	UG/KG	Di-n-Butylphthalate
73 J	UG/KG	Fluoranthene
100 J	UG/KG	Pyrene
420 UJ	UG/KG	Benzyl Butyl Phthalate
420 UJ	UG/KG	3,3'-Dichlorobenzidine
58 J	UG/KG	Benzo(a)Anthracene
98 J	UG/KG	Chrysene
420 U	UG/KG	bis(2-Ethylhexyl) Phthalate
420 U	UG/KG	Di-n-Octylphthalate
160 J	UG/KG	Benzo(b)Fluoranthene
170 J	UG/KG	Benzo(k)Fluoranthene
46 J	UG/KG	Benzo-a-Pyrene
63 J	UG/KG	Indeno (1,2,3-cd) Pyrene
420 U	UG/KG	Dibenzo(a,h)Anthracene
420 U	UG/KG	Benzo(ghi)Perylene
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6762** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS20SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XS2
D No: 1XS2

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:45
Ending:

RESULTS	UNITS	ANALYTE
130 NJ	UG/KG	HEXADECANOIC ACID
190 NJ	UG/KG	1-EICOSANOL
8800 J	UG/KG	17 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6763** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS20SB /
Media: SUBSURFACE SOIL (> 12") D No: 1XS3

MD No: 1XS3 Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:55
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
400 U	UG/KG	Benzaldehyde
400 U	UG/KG	Phenol
400 U	UG/KG	bis(2-Chloroethyl) Ether
400 U	UG/KG	2-Chlorophenol
400 U	UG/KG	2-Methylphenol
400 U	UG/KG	bis(2-Chloroisopropyl) Ether
400 U	UG/KG	Acetophenone
400 U	UG/KG	(3-and/or 4-)Methylphenol
400 U	UG/KG	n-Nitrosodi-n-Propylamine
400 U	UG/KG	Hexachloroethane
400 U	UG/KG	Nitrobenzene
400 U	UG/KG	Isophorone
400 U	UG/KG	2-Nitrophenol
400 U	UG/KG	2,4-Dimethylphenol
400 U	UG/KG	bis(2-Chloroethoxy)Methane
400 U	UG/KG	2,4-Dichlorophenol
400 U	UG/KG	Naphthalene
400 U	UG/KG	4-Chloroaniline
400 U	UG/KG	Hexachlorobutadiene
400 U	UG/KG	Caprolactam
400 U	UG/KG	4-Chloro-3-Methylphenol
400 U	UG/KG	2-Methylnaphthalene
400 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
400 U	UG/KG	2,4,6-Trichlorophenol
1000 U	UG/KG	2,4,5-Trichlorophenol
400 U	UG/KG	1,1-Biphenyl
400 U	UG/KG	2-Chloronaphthalene
1000 U	UG/KG	2-Nitroaniline
400 U	UG/KG	Dimethyl Phthalate
400 U	UG/KG	2,6-Dinitrotoluene
400 U	UG/KG	Acenaphthylene
1000 U	UG/KG	3-Nitroaniline
400 U	UG/KG	Acenaphthene
1000 U	UG/KG	2,4-Dinitrophenol
1000 U	UG/KG	4-Nitrophenol
400 U	UG/KG	Dibenzofuran
400 U	UG/KG	2,4-Dinitrotoluene
400 U	UG/KG	Diethyl Phthalate
400 U	UG/KG	Fluorene
400 U	UG/KG	4-Chlorophenyl Phenyl Ether
1000 U	UG/KG	4-Nitroaniline
1000 U	UG/KG	2-Methyl-4,6-Dinitrophenol
400 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
400 U	UG/KG	4-Bromophenyl Phenyl Ether
400 U	UG/KG	Hexachlorobenzene (HCB)
400 U	UG/KG	Atrazine
1000 U	UG/KG	Pentachlorophenol
400 U	UG/KG	Phenanthrene
400 U	UG/KG	Anthracene
400 U	UG/KG	Carbazole
400 U	UG/KG	Di-n-Butylphthalate
400 U	UG/KG	Fluoranthene
400 U	UG/KG	Pyrene
400 UJ	UG/KG	Benzyl Butyl Phthalate
400 UJ	UG/KG	3,3'-Dichlorobenzidine
400 U	UG/KG	Benzo(a)Anthracene
400 U	UG/KG	Chrysene
400 U	UG/KG	bis(2-Ethylhexyl) Phthalate
400 U	UG/KG	Di-n-Octylphthalate
400 U	UG/KG	Benzo(b)Fluoranthene
400 U	UG/KG	Benzo(k)Fluoranthene
400 U	UG/KG	Benzo-a-Pyrene
400 U	UG/KG	Indeno (1,2,3-cd) Pyrene
400 U	UG/KG	Dibenzo(a,h)Anthracene
120 J	UG/KG	Benzo(ghi)Perylene
18	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample 6763 FY 2003 Project: 03-0474

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS20SB /
Media: SUBSURFACE SOIL (> 12") MD No: 1XS3 Inorg Contractor: SENTIN
D No: 1XS3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:55
Ending:

RESULTS	UNITS	ANALYTE
130 J	UG/KG	UNKNOWN COMPOUND
120 NJ	UG/KG	VALENCENE

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6764** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS20SD / MD No: 1XS4 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XS4 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
410 U	UG/KG	Benzaldehyde
410 U	UG/KG	Phenol
410 U	UG/KG	bis(2-Chloroethyl) Ether
410 U	UG/KG	2-Chlorophenol
410 U	UG/KG	2-Methylphenol
410 U	UG/KG	bis(2-Chloroisopropyl) Ether
410 U	UG/KG	Acetophenone
410 U	UG/KG	(3-and/or 4-)Methylphenol
410 U	UG/KG	n-Nitrosodi-n-Propylamine
410 U	UG/KG	Hexachloroethane
410 U	UG/KG	Nitrobenzene
410 U	UG/KG	Isophorone
410 U	UG/KG	2-Nitrophenol
410 U	UG/KG	2,4-Dimethylphenol
410 U	UG/KG	bis(2-Chloroethoxy)Methane
410 U	UG/KG	2,4-Dichlorophenol
410 U	UG/KG	Naphthalene
410 U	UG/KG	4-Chloroaniline
410 U	UG/KG	Hexachlorobutadiene
410 U	UG/KG	Caprolactam
410 U	UG/KG	4-Chloro-3-Methylphenol
410 U	UG/KG	2-Methylnaphthalene
410 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
410 U	UG/KG	2,4,6-Trichlorophenol
1000 U	UG/KG	2,4,5-Trichlorophenol
410 U	UG/KG	1,1-Biphenyl
410 U	UG/KG	2-Chloronaphthalene
1000 U	UG/KG	2-Nitroaniline
410 U	UG/KG	Dimethyl Phthalate
410 U	UG/KG	2,6-Dinitrotoluene
410 U	UG/KG	Acenaphthylene
1000 U	UG/KG	3-Nitroaniline
410 U	UG/KG	Acenaphthene
1000 U	UG/KG	2,4-Dinitrophenol
1000 U	UG/KG	4-Nitrophenol
410 U	UG/KG	Dibenzofuran
410 U	UG/KG	2,4-Dinitrotoluene
410 U	UG/KG	Diethyl Phthalate
410 U	UG/KG	Fluorene
410 U	UG/KG	4-Chlorophenyl Phenyl Ether
1000 U	UG/KG	4-Nitroaniline
1000 U	UG/KG	2-Methyl-4,6-Dinitrophenol
410 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
410 U	UG/KG	4-Bromophenyl Phenyl Ether
410 U	UG/KG	Hexachlorobenzene (HCB)
410 U	UG/KG	Atrazine
1000 U	UG/KG	Pentachlorophenol
410 U	UG/KG	Phenanthrene
410 U	UG/KG	Anthracene
410 U	UG/KG	Carbazole
410 U	UG/KG	Di-n-Butylphthalate
81 J	UG/KG	Fluoranthene
63 J	UG/KG	Pyrene
410 UJ	UG/KG	Benzyl Butyl Phthalate
410 UJ	UG/KG	3,3'-Dichlorobenzidine
44 J	UG/KG	Benzo(a)Anthracene
69 J	UG/KG	Chrysene
410 U	UG/KG	bis(2-Ethylhexyl) Phthalate
410 U	UG/KG	Di-n-Octylphthalate
140 J	UG/KG	Benzo(b)Fluoranthene
150 J	UG/KG	Benzo(k)Fluoranthene
47 J	UG/KG	Benzo-a-Pyrene
51 J	UG/KG	Indeno (1,2,3-cd) Pyrene
410 U	UG/KG	Dibenzo(a,h)Anthracene
410 U	UG/KG	Benzo(ghi)Perylene
20	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6764** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS20SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XS4
D No: 1XS4

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:45
Ending:

RESULTS	UNITS	ANALYTE
150 NJ	UG/KG	HEXADECANOIC ACID
220 NJ	UG/KG	1-DOCOSENE
320 NJ	UG/KG	STIGMAST-4-EN-3-ONE
9100 J	UG/KG	17 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6765** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS03SD / — MD No: 1XS5 — Inorg Contractor: SENTIN
Media: SEDIMENT — D No: 1XS5 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
110 J	UG/KG	Benzaldehyde
940 U	UG/KG	Phenol
940 U	UG/KG	bis(2-Chloroethyl) Ether
940 U	UG/KG	2-Chlorophenol
940 U	UG/KG	2-Methylphenol
940 U	UG/KG	bis(2-Chloroisopropyl) Ether
940 U	UG/KG	Acetophenone
940 U	UG/KG	(3-and/or 4-)Methylphenol
940 U	UG/KG	n-Nitrosodi-n-Propylamine
940 U	UG/KG	Hexachloroethane
940 U	UG/KG	Nitrobenzene
940 U	UG/KG	Isophorone
940 U	UG/KG	2-Nitrophenol
940 U	UG/KG	2,4-Dimethylphenol
940 U	UG/KG	bis(2-Chloroethoxy)Methane
940 U	UG/KG	2,4-Dichlorophenol
940 U	UG/KG	Naphthalene
940 U	UG/KG	4-Chloroaniline
940 U	UG/KG	Hexachlorobutadiene
940 U	UG/KG	Caprolactam
940 U	UG/KG	4-Chloro-3-Methylphenol
930 U	UG/KG	2-Methylnaphthalene
940 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
940 U	UG/KG	2,4,6-Trichlorophenol
2400 U	UG/KG	2,4,5-Trichlorophenol
940 U	UG/KG	1,1-Biphenyl
940 U	UG/KG	2-Chloronaphthalene
2400 U	UG/KG	2-Nitroaniline
940 U	UG/KG	Dimethyl Phthalate
940 U	UG/KG	2,6-Dinitrotoluene
940 U	UG/KG	Acenaphthylene
2400 U	UG/KG	3-Nitroaniline
940 U	UG/KG	Acenaphthene
2400 U	UG/KG	2,4-Dinitrophenol
2400 U	UG/KG	4-Nitrophenol
940 U	UG/KG	Dibenzofuran
940 U	UG/KG	2,4-Dinitrotoluene
940 U	UG/KG	Diethyl Phthalate
130 U	UG/KG	Fluorene
940 U	UG/KG	4-Chlorophenyl Phenyl Ether
2400 U	UG/KG	4-Nitroaniline
2400 U	UG/KG	2-Methyl-4,6-Dinitrophenol
940 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
940 U	UG/KG	4-Bromophenyl Phenyl Ether
940 U	UG/KG	Hexachlorobenzene (HCB)
940 U	UG/KG	Atrazine
190 U	UG/KG	Pentachlorophenol
120 J	UG/KG	Phenanthrene
270 J	UG/KG	Anthracene
940 U	UG/KG	Carbazole
940 U	UG/KG	Di-n-Butylphthalate
340 J	UG/KG	Fluoranthene
220 J	UG/KG	Pyrene
940 UJ	UG/KG	Benzyl Butyl Phthalate
940 UJ	UG/KG	3,3'-Dichlorobenzidine
150 J	UG/KG	Benzo(a)Anthracene
250 J	UG/KG	Chrysene
940 U	UG/KG	bis(2-Ethylhexyl) Phthalate
940 U	UG/KG	Di-n-Octylphthalate
540 J	UG/KG	Benzo(b)Fluoranthene
560 J	UG/KG	Benzo(k)Fluoranthene
150 J	UG/KG	Benzo-a-Pyrene
180 J	UG/KG	Indeno (1,2,3-cd) Pyrene
940 U	UG/KG	Dibenzo(a,h)Anthracene
940 U	UG/KG	Benzo(ghi)Perylene
79	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6765** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS03SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XS5
D No: 1XS5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:30
Ending:

RESULTS	UNITS	ANALYTE
590 NJ	UG/KG	BENZO [E] PYRENE
1000 NJ	UG/KG	1-HEXADECENE
1400 NJ	UG/KG	STIGMAST-4-EN-3-ONE
54000 J	UG/KG	25 UNKNOWNS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6765** FY **2003** Project: **03-0474**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS03SD / MD No: 1XS5 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XS5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
33	UG/KG	2-Methylnaphthalene
51	UG/KG	Naphthalene
44	UG/KG	Acenaphthylene
100	UG/KG	Acenaphthene
82	UG/KG	Fluorene
72	UG/KG	Phenanthrene
140	UG/KG	Anthracene
190	UG/KG	Fluoranthene
140	UG/KG	Pyrene
110	UG/KG	Benzo(a)Anthracene
200	UG/KG	Chrysene
NA	UG/KG	Benzo(b)Fluoranthene
NA	UG/KG	Benzo(k)Fluoranthene
120	UG/KG	Benzo-a-Pyrene
NA	UG/KG	Indeno (1,2,3-cd) Pyrene
40	UG/KG	Dibenzo(a,h)Anthracene
NA	UG/KG	Benzo(ghi)Perylene
100 U	UG/KG	Pentachlorophenol

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6766** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS16SS / MD No: 1XS6 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XS6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Benzaldehyde
420 U	UG/KG	Phenol
420 U	UG/KG	bis(2-Chloroethyl) Ether
420 U	UG/KG	2-Chlorophenol
420 U	UG/KG	2-Methylphenol
420 U	UG/KG	bis(2-Chloroisopropyl) Ether
420 U	UG/KG	Acetophenone
420 U	UG/KG	(3-and/or 4-)Methylphenol
420 U	UG/KG	n-Nitrosodi-n-Propylamine
420 U	UG/KG	Hexachloroethane
420 U	UG/KG	Nitrobenzene
420 U	UG/KG	Isophorone
420 U	UG/KG	2-Nitrophenol
420 U	UG/KG	2,4-Dimethylphenol
420 U	UG/KG	bis(2-Chloroethoxy)Methane
420 U	UG/KG	2,4-Dichlorophenol
420 U	UG/KG	Naphthalene
420 U	UG/KG	4-Chloroaniline
420 U	UG/KG	Hexachlorobutadiene
420 U	UG/KG	Caprolactam
420 U	UG/KG	4-Chloro-3-Methylphenol
420 U	UG/KG	2-Methylnaphthalene
420 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
420 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
420 U	UG/KG	1,1-Biphenyl
420 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
420 U	UG/KG	Dimethyl Phthalate
420 U	UG/KG	2,6-Dinitrotoluene
87 J	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
420 U	UG/KG	Acenaphthene
1100 U	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol
420 U	UG/KG	Dibenzofuran
420 U	UG/KG	2,4-Dinitrotoluene
420 U	UG/KG	Diethyl Phthalate
420 U	UG/KG	Fluorene
420 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
420 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
420 U	UG/KG	4-Bromophenyl Phenyl Ether
420 U	UG/KG	Hexachlorobenzene (HCB)
420 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
310 J	UG/KG	Phenanthrene
420 U	UG/KG	Anthracene
62 J	UG/KG	Carbazole
420 U	UG/KG	Di-n-Butylphthalate
760	UG/KG	Fluoranthene
540	UG/KG	Pyrene
420 UJ	UG/KG	Benzyl Butyl Phthalate
420 UJ	UG/KG	3,3'-Dichlorobenzidine
260 J	UG/KG	Benzo(a)Anthracene
390 J	UG/KG	Chrysene
420 U	UG/KG	bis(2-Ethylhexyl) Phthalate
420 U	UG/KG	Di-n-Octylphthalate
700 J	UG/KG	Benzo(b)Fluoranthene
730 J	UG/KG	Benzo(k)Fluoranthene
230 J	UG/KG	Benzo-a-Pyrene
270 J	UG/KG	Indeno (1,2,3-cd) Pyrene
95 J	UG/KG	Dibenzo(a,h)Anthracene
92 J	UG/KG	Benzo(ghi)Perylene
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6766** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS16SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XS6
D No: 1XS6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:30
Ending:

RESULTS	UNITS	ANALYTE
160 J	UG/KG	9,10-ANTHRACENEDIONE
2000 J	UG/KG	PYRENE, 1-METHYL-
1400 J	UG/KG	PYRENE, 2-METHYL-
1400 J	UG/KG	BENZO [B] NAPHTHO [2,1-D] THIOPH
1600 J	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
2300 J	UG/KG	CHRYSENE, 5-METHYL-
2600 J	UG/KG	5,12-NAPHTHACENEDIONE
.200 J	UG/KG	PERYLENE
580 J	UG/KG	UNKNOWN PAH
1200 NJ	UG/KG	VALENCENE
24000 J	UG/KG	17 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6767** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS16SB / MD No: 1XS7 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XS7 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Benzaldehyde
420 U	UG/KG	Phenol
420 U	UG/KG	bis(2-Chloroethyl) Ether
420 U	UG/KG	2-Chlorophenol
420 U	UG/KG	2-Methylphenol
420 U	UG/KG	bis(2-Chloroisopropyl) Ether
420 U	UG/KG	Acetophenone
420 U	UG/KG	(3-and/or 4-)Methylphenol
420 U	UG/KG	n-Nitrosodi-n-Propylamine
420 U	UG/KG	Hexachloroethane
420 U	UG/KG	Nitrobenzene
420 U	UG/KG	Isophorone
420 U	UG/KG	2-Nitrophenol
420 U	UG/KG	2,4-Dimethylphenol
420 U	UG/KG	bis(2-Chloroethoxy)Methane
420 U	UG/KG	2,4-Dichlorophenol
420 U	UG/KG	Naphthalene
420 U	UG/KG	4-Chloroaniline
420 U	UG/KG	Hexachlorobutadiene
420 U	UG/KG	Caprolactam
420 U	UG/KG	4-Chloro-3-Methylphenol
420 U	UG/KG	2-Methylnaphthalene
420 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
420 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
420 U	UG/KG	1,1-Biphenyl
420 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
420 U	UG/KG	Dimethyl Phthalate
420 U	UG/KG	2,6-Dinitrotoluene
420 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
420 U	UG/KG	Acenaphthene
1100 U	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Dibenzofuran
420 U	UG/KG	2,4-Dinitrotoluene
420 U	UG/KG	Diethyl Phthalate
420 U	UG/KG	Fluorene
420 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
420 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
420 U	UG/KG	4-Bromophenyl Phenyl Ether
420 U	UG/KG	Hexachlorobenzene (HCB)
420 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
420 U	UG/KG	Phenanthrene
420 U	UG/KG	Anthracene
420 U	UG/KG	Carbazole
420 U	UG/KG	Di-n-Butylphthalate
420 U	UG/KG	Fluoranthene
420 U	UG/KG	Pyrene
420 UJ	UG/KG	Benzyl Butyl Phthalate
420 UJ	UG/KG	3,3'-Dichlorobenzidine
420 U	UG/KG	Benzo(a)Anthracene
420 U	UG/KG	Chrysene
420 U	UG/KG	bis(2-Ethylhexyl) Phthalate
420 U	UG/KG	Di-n-Octylphthalate
420 U	UG/KG	Benzo(b)Fluoranthene
420 U	UG/KG	Benzo(k)Fluoranthene
420 U	UG/KG	Benzo-a-Pyrene
420 U	UG/KG	Indeno (1,2,3-cd) Pyrene
420 U	UG/KG	Dibenzo(a,h)Anthracene
420 U	UG/KG	Benzo(ghi)Perylene
22	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6767** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS16SB / MD No: 1XS7 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XS7 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:40
Ending:

RESULTS	UNITS	ANALYTE
220 J	UG/KG	2 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

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N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6768** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS21SS / — MD No: 1XS8 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XS8 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:05
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Benzaldehyde
420 U	UG/KG	Phenol
420 U	UG/KG	bis(2-Chloroethyl) Ether
420 U	UG/KG	2-Chlorophenol
420 U	UG/KG	2-Methylphenol
420 U	UG/KG	bis(2-Chloroisopropyl) Ether
420 U	UG/KG	Acetophenone
420 U	UG/KG	(3-and/or 4-)Methylphenol
420 U	UG/KG	n-Nitrosodi-n-Propylamine
420 U	UG/KG	Hexachloroethane
420 U	UG/KG	Nitrobenzene
420 U	UG/KG	Isophorone
420 U	UG/KG	2-Nitrophenol
420 U	UG/KG	2,4-Dimethylphenol
420 U	UG/KG	bis(2-Chloroethoxy)Methane
420 U	UG/KG	2,4-Dichlorophenol
420 U	UG/KG	Naphthalene
420 U	UG/KG	4-Chloroaniline
420 U	UG/KG	Hexachlorobutadiene
420 U	UG/KG	Caprolactam
420 U	UG/KG	4-Chloro-3-Methylphenol
420 U	UG/KG	2-Methylnaphthalene
420 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
420 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
420 U	UG/KG	1,1-Biphenyl
420 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
420 U	UG/KG	Dimethyl Phthalate
420 U	UG/KG	2,6-Dinitrotoluene
420 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
420 U	UG/KG	Acenaphthene
1100 U	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Dibenzofuran
420 U	UG/KG	2,4-Dinitrotoluene
420 U	UG/KG	Diethyl Phthalate
420 U	UG/KG	Fluorene
420 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
420 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
420 U	UG/KG	4-Bromophenyl Phenyl Ether
420 U	UG/KG	Hexachlorobenzene (HCB)
420 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
420 U	UG/KG	Phenanthrene
420 U	UG/KG	Anthracene
420 U	UG/KG	Carbazole
420 U	UG/KG	Di-n-Butylphthalate
420 U	UG/KG	Fluoranthene
420 U	UG/KG	Pyrene
420 UJ	UG/KG	Benzyl Butyl Phthalate
420 UJ	UG/KG	3,3'-Dichlorobenzidine
420 U	UG/KG	Benzo(a)Anthracene
420 U	UG/KG	Chrysene
420 U	UG/KG	bis(2-Ethylhexyl) Phthalate
420 U	UG/KG	Di-n-Octylphthalate
420 U	UG/KG	Benzo(b)Fluoranthene
420 U	UG/KG	Benzo(k)Fluoranthene
420 U	UG/KG	Benzo-a-Pyrene
420 U	UG/KG	Indeno (1,2,3-cd) Pyrene
420 U	UG/KG	Dibenzo(a,h)Anthracene
420 U	UG/KG	Benzo(ghi)Perylene
22	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6768** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS21SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XS8
D No: 1XS8

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:05
Ending:

RESULTS	UNITS	ANALYTE
230 NJ	UG/KG	1-EICOSANOL
3100 J	UG/KG	14 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6769** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS21SB / MD No: 1XS9 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XS9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
410 U	UG/KG	Benzaldehyde
410 U	UG/KG	Phenol
410 U	UG/KG	bis(2-Chloroethyl) Ether
410 U	UG/KG	2-Chlorophenol
410 U	UG/KG	2-Methylphenol
410 U	UG/KG	bis(2-Chloroisopropyl) Ether
410 U	UG/KG	Acetophenone
410 U	UG/KG	(3-and/or 4-)Methylphenol
410 U	UG/KG	n-Nitrosodi-n-Propylamine
410 U	UG/KG	Hexachloroethane
410 U	UG/KG	Nitrobenzene
410 U	UG/KG	Isophorone
410 U	UG/KG	2-Nitrophenol
410 U	UG/KG	2,4-Dimethylphenol
410 U	UG/KG	bis(2-Chloroethoxy)Methane
410 U	UG/KG	2,4-Dichlorophenol
410 U	UG/KG	Naphthalene
410 U	UG/KG	4-Chloroaniline
410 U	UG/KG	Hexachlorobutadiene
410 U	UG/KG	Caprolactam
410 U	UG/KG	4-Chloro-3-Methylphenol
410 U	UG/KG	2-Methylnaphthalene
410 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
410 U	UG/KG	2,4,6-Trichlorophenol
1000 U	UG/KG	2,4,5-Trichlorophenol
410 U	UG/KG	1,1-Biphenyl
410 U	UG/KG	2-Chloronaphthalene
1000 U	UG/KG	2-Nitroaniline
410 U	UG/KG	Dimethyl Phthalate
410 U	UG/KG	2,6-Dinitrotoluene
410 U	UG/KG	Acenaphthylene
1000 U	UG/KG	3-Nitroaniline
410 U	UG/KG	Acenaphthene
1000 U	UG/KG	2,4-Dinitrophenol
1000 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
410 U	UG/KG	Dibenzofuran
410 U	UG/KG	2,4-Dinitrotoluene
410 U	UG/KG	Diethyl Phthalate
410 U	UG/KG	Fluorene
410 U	UG/KG	4-Chlorophenyl Phenyl Ether
1000 U	UG/KG	4-Nitroaniline
1000 U	UG/KG	2-Methyl-4,6-Dinitrophenol
410 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
410 U	UG/KG	4-Bromophenyl Phenyl Ether
410 U	UG/KG	Hexachlorobenzene (HCB)
410 U	UG/KG	Atrazine
1000 U	UG/KG	Pentachlorophenol
410 U	UG/KG	Phenanthrene
410 U	UG/KG	Anthracene
410 U	UG/KG	Carbazole
410 U	UG/KG	Di-n-Butylphthalate
410 U	UG/KG	Fluoranthene
410 U	UG/KG	Pyrene
410 UJ	UG/KG	Benzyl Butyl Phthalate
410 UJ	UG/KG	3,3'-Dichlorobenzidine
410 U	UG/KG	Benzo(a)Anthracene
410 U	UG/KG	Chrysene
410 U	UG/KG	bis(2-Ethylhexyl) Phthalate
410 U	UG/KG	Di-n-Octylphthalate
410 U	UG/KG	Benzo(b)Fluoranthene
410 U	UG/KG	Benzo(k)Fluoranthene
410 U	UG/KG	Benzo-a-Pyrene
410 U	UG/KG	Indeno (1,2,3-cd) Pyrene
410 U	UG/KG	Dibenzo(a,h)Anthracene
410 U	UG/KG	Benzo(ghi)Perylene
20	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6769** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS21SB / MD No: 1XS9 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XS9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:

RESULTS	UNITS	ANALYTE
84 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample: **6770** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS

Program: SF — Case No: 31635

Id/Station: GS01GW / — MD No: 1XT0 — Inorg Contractor: SENTIN

Media: GROUNDWATER — D No: 1XT0 — Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:05
Ending:

RESULTS	UNITS	ANALYTE
5.0 UJ	UG/L	Benzaldehyde
5.0 UJ	UG/L	Phenol
5.0 UJ	UG/L	bis(2-Chloroethyl) Ether
5.0 UJ	UG/L	2-Chlorophenol
5.0 UJ	UG/L	2-Methylphenol
5.0 UJ	UG/L	bis(2-Chloroisopropyl) Ether
5.0 UJ	UG/L	Acetophenone
5.0 UJ	UG/L	(3-and/or 4-)Methylphenol
5.0 UJ	UG/L	n-Nitrosodi-n-Propylamine
5.0 UJ	UG/L	Hexachloroethane
5.0 UJ	UG/L	Nitrobenzene
5.0 UJ	UG/L	Isophorone
5.0 UJ	UG/L	2-Nitrophenol
5.0 UJ	UG/L	2,4-Dimethylphenol
5.0 UJ	UG/L	bis(2-Chloroethoxy)Methane
5.0 UJ	UG/L	2,4-Dichlorophenol
5.0 UJ	UG/L	Naphthalene
5.0 UJ	UG/L	4-Chloroaniline
5.0 UJ	UG/L	Hexachlorobutadiene
5.0 UJ	UG/L	Caprolactam
5.0 UJ	UG/L	4-Chloro-3-Methylphenol
5.0 UJ	UG/L	2-Methylnaphthalene
5.0 UJ	UG/L	Hexachlorocyclopentadiene (HCCP)
5.0 UJ	UG/L	2,4,6-Trichlorophenol
20 UJ	UG/L	2,4,5-Trichlorophenol
5.0 UJ	UG/L	1,1-Biphenyl
5.0 UJ	UG/L	2-Chloronaphthalene
20 UJ	UG/L	2-Nitroaniline
5.0 UJ	UG/L	Dimethyl Phthalate
5.0 UJ	UG/L	2,6-Dinitrotoluene
5.0 UJ	UG/L	Acenaphthylene
20 UJ	UG/L	3-Nitroaniline
5.0 UJ	UG/L	Acenaphthene
20 UJ	UG/L	2,4-Dinitrophenol
20 UJ	UG/L	4-Nitrophenol

RESULTS	UNITS	ANALYTE
5.0 UJ	UG/L	Dibenzofuran
5.0 UJ	UG/L	2,4-Dinitrotoluene
5.0 UJ	UG/L	Diethyl Phthalate
5.0 UJ	UG/L	Fluorene
5.0 UJ	UG/L	4-Chlorophenyl Phenyl Ether
20 UJ	UG/L	4-Nitroaniline
20 UJ	UG/L	2-Methyl-4,6-Dinitrophenol
5.0 UJ	UG/L	n-Nitrosodiphenylamine/Diphenylamine
5.0 UJ	UG/L	1,2,4,5-Tetrachlorobenzene
5.0 UJ	UG/L	4-Bromophenyl Phenyl Ether
5.0 UJ	UG/L	Hexachlorobenzene (HCB)
5.0 UJ	UG/L	Atrazine
5.0 UJ	UG/L	Pentachlorophenol
5.0 UJ	UG/L	Phenanthrene
5.0 UJ	UG/L	Anthracene
NA	UG/L	Carbazole
5.0 UJ	UG/L	Di-n-Butylphthalate
5.0 UJ	UG/L	Fluoranthene
5.0 UJ	UG/L	Pyrene
5.0 UJ	UG/L	Benzyl Butyl Phthalate
5.0 UJ	UG/L	3,3'-Dichlorobenzidine
5.0 UJ	UG/L	Benzo(a)Anthracene
5.0 UJ	UG/L	Chrysene
5.0 UJ	UG/L	bis(2-Ethylhexyl) Phthalate
5.0 UJ	UG/L	Di-n-Octylphthalate
5.0 UJ	UG/L	Benzo(b)Fluoranthene
5.0 UJ	UG/L	Benzo(k)Fluoranthene
5.0 UJ	UG/L	Benzo-a-Pyrene
5.0 UJ	UG/L	Indeno (1,2,3-cd) Pyrene
5.0 UJ	UG/L	Dibenzo(a,h)Anthracene
5.0 UJ	UG/L	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6770** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS01GW /
Media: GROUNDWATER

Case No: 31635
MD No: 1XT0
D No: 1XT0

Inorg Contractor: SENTIN
Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:05
Ending:

RESULTS	UNITS	ANALYTE
2.2 NJ	UG/L	D-LIMONENE

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6771** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS01SB / MD No: 1XT1 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XT1 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
400 U	UG/KG	Benzaldehyde
400 U	UG/KG	Phenol
400 U	UG/KG	bis(2-Chloroethyl) Ether
400 U	UG/KG	2-Chlorophenol
400 U	UG/KG	2-Methylphenol
400 U	UG/KG	bis(2-Chloroisopropyl) Ether
400 U	UG/KG	Acetophenone
400 U	UG/KG	(3-and/or 4-)Methylphenol
400 U	UG/KG	n-Nitrosodi-n-Propylamine
400 U	UG/KG	Hexachloroethane
400 U	UG/KG	Nitrobenzene
400 U	UG/KG	Isophorone
400 U	UG/KG	2-Nitrophenol
400 U	UG/KG	2,4-Dimethylphenol
400 U	UG/KG	bis(2-Chloroethoxy)Methane
400 U	UG/KG	2,4-Dichlorophenol
400 U	UG/KG	Naphthalene
400 U	UG/KG	4-Chloroaniline
400 U	UG/KG	Hexachlorobutadiene
400 U	UG/KG	Caprolactam
400 U	UG/KG	4-Chloro-3-Methylphenol
400 U	UG/KG	2-Methylnaphthalene
400 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
400 U	UG/KG	2,4,6-Trichlorophenol
1000 U	UG/KG	2,4,5-Trichlorophenol
400 U	UG/KG	1,1-Biphenyl
400 U	UG/KG	2-Chloronaphthalene
1000 U	UG/KG	2-Nitroaniline
400 U	UG/KG	Dimethyl Phthalate
400 U	UG/KG	2,6-Dinitrotoluene
400 U	UG/KG	Acenaphthylene
1000 U	UG/KG	3-Nitroaniline
400 U	UG/KG	Acenaphthene
1000 U	UG/KG	2,4-Dinitrophenol
1000 U	UG/KG	4-Nitrophenol
400 U	UG/KG	Dibenzofuran
400 U	UG/KG	2,4-Dinitrotoluene
400 U	UG/KG	Diethyl Phthalate
400 U	UG/KG	Fluorene
400 U	UG/KG	4-Chlorophenyl Phenyl Ether
1000 U	UG/KG	4-Nitroaniline
1000 U	UG/KG	2-Methyl-4,6-Dinitrophenol
400 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
400 U	UG/KG	4-Bromophenyl Phenyl Ether
400 U	UG/KG	Hexachlorobenzene (HCB)
400 U	UG/KG	Atrazine
1000 U	UG/KG	Pentachlorophenol
400 U	UG/KG	Phenanthrene
400 U	UG/KG	Anthracene
400 U	UG/KG	Carbazole
400 U	UG/KG	Di-n-Butylphthalate
400 U	UG/KG	Fluoranthene
400 U	UG/KG	Pyrene
400 UJ	UG/KG	Benzyl Butyl Phthalate
400 UJ	UG/KG	3,3'-Dichlorobenzidine
400 U	UG/KG	Benzo(a)Anthracene
400 U	UG/KG	Chrysene
400 U	UG/KG	bis(2-Ethylhexyl) Phthalate
400 U	UG/KG	Di-n-Octylphthalate
400 U	UG/KG	Benzo(b)Fluoranthene
400 U	UG/KG	Benzo(k)Fluoranthene
400 U	UG/KG	Benzo-a-Pyrene
400 U	UG/KG	Indeno (1,2,3-cd) Pyrene
400 U	UG/KG	Dibenzo(a,h)Anthracene
400 U	UG/KG	Benzo(ghi)Perylene
18	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample: **6771** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS01SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XT1
D No: 1XT1

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:15
Ending:

RESULTS	UNITS	ANALYTE
92 NJ	UG/KG	1-PHENANTHRENECARBOXYLIC ACID
840 J	UG/KG	5 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6772** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS

Program: SF — Case No: 31635

Id/Station: GS01SS / — MD No: 1XT2 — Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12") — D No: 1XT2 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
380 U	UG/KG	Benzaldehyde
380 U	UG/KG	Phenol
380 U	UG/KG	bis(2-Chloroethyl) Ether
380 U	UG/KG	2-Chlorophenol
380 U	UG/KG	2-Methylphenol
380 U	UG/KG	bis(2-Chloroisopropyl) Ether
380 U	UG/KG	Acetophenone
380 U	UG/KG	(3-and/or 4-)Methylphenol
380 U	UG/KG	n-Nitrosodi-n-Propylamine
380 U*	UG/KG	Hexachloroethane
380 U	UG/KG	Nitrobenzene
380 U	UG/KG	Isophorone
380 U	UG/KG	2-Nitrophenol
380 U	UG/KG	2,4-Dimethylphenol
380 U	UG/KG	bis(2-Chloroethoxy)Methane
380 U	UG/KG	2,4-Dichlorophenol
380 U	UG/KG	Naphthalene
380 U	UG/KG	4-Chloroaniline
380 U	UG/KG	Hexachlorobutadiene
380 U	UG/KG	Caprolactam
380 U	UG/KG	4-Chloro-3-Methylphenol
380 U	UG/KG	2-Methylnaphthalene
380 UJ	UG/KG	Hexachlorocyclopentadiene (HCCP)
380 U	UG/KG	2,4,6-Trichlorophenol
970 U	UG/KG	2,4,5-Trichlorophenol
380 U	UG/KG	1,1-Biphenyl
380 U	UG/KG	2-Chloronaphthalene
970 U	UG/KG	2-Nitroaniline
380 U	UG/KG	Dimethyl Phthalate
380 U	UG/KG	2,6-Dinitrotoluene
380 U	UG/KG	Acenaphthylene
970 U	UG/KG	3-Nitroaniline
380 U	UG/KG	Acenaphthene
970 UR	UG/KG	2,4-Dinitrophenol
970 UJ	UG/KG	4-Nitrophenol
380 U	UG/KG	Dibenzofuran
380 U	UG/KG	2,4-Dinitrotoluene
380 U	UG/KG	Diethyl Phthalate
380 U	UG/KG	Fluorene
380 U	UG/KG	4-Chlorophenyl Phenyl Ether
970 UJ	UG/KG	4-Nitroaniline
970 U	UG/KG	2-Methyl-4,6-Dinitrophenol
380 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
380 U	UG/KG	4-Bromophenyl Phenyl Ether
380 UJ	UG/KG	Hexachlorobenzene (HCB)
380 U	UG/KG	Atrazine
970 UJ	UG/KG	Pentachlorophenol
380 U	UG/KG	Phenanthrene
380 U	UG/KG	Anthracene
380 U	UG/KG	Carbazole
380 U	UG/KG	Di-n-Butylphthalate
380 U	UG/KG	Fluoranthene
380 U	UG/KG	Pyrene
380 U	UG/KG	Benzyl Butyl Phthalate
380 U	UG/KG	3,3'-Dichlorobenzidine
380 U	UG/KG	Benzo(a)Anthracene
380 U	UG/KG	Chrysene
380 U	UG/KG	bis(2-Ethylhexyl) Phthalate
380 U	UG/KG	Di-n-Octylphthalate
380 U	UG/KG	Benzo(b)Fluoranthene
380 U	UG/KG	Benzo(k)Fluoranthene
380 U	UG/KG	Benzo-a-Pyrene
380 UJ	UG/KG	Indeno (1,2,3-cd) Pyrene
380 UJ	UG/KG	Dibenzo(a,h)Anthracene
380 U	UG/KG	Benzo(ghi)Perylene
14	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6772** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS01SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XT2
D No: 1XT2

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:

RESULTS	UNITS	ANALYTE
1400 J	UG/KG	12 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample 6773 FY 2003 Project: 03-0474

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS13SS / MD No: 1XT3 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XT3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1100 U	UG/KG	Benzaldehyde
1100 U	UG/KG	Phenol
1100 U	UG/KG	bis(2-Chloroethyl) Ether
1100 U	UG/KG	2-Chlorophenol
1100 U	UG/KG	2-Methylphenol
1100 U	UG/KG	bis(2-Chloroisopropyl) Ether
1100 U	UG/KG	Acetophenone
1100 U	UG/KG	(3-and/or 4-)Methylphenol
1100 U	UG/KG	n-Nitrosodi-n-Propylamine
1100 U	UG/KG	Hexachloroethane
1100 U	UG/KG	Nitrobenzene
1100 U	UG/KG	Isophorone
1100 U	UG/KG	2-Nitrophenol
1100 U	UG/KG	2,4-Dimethylphenol
1100 U	UG/KG	bis(2-Chloroethoxy)Methane
1100 U	UG/KG	2,4-Dichlorophenol
1100 U	UG/KG	Naphthalene
1100 U	UG/KG	4-Chloroaniline
1100 U	UG/KG	Hexachlorobutadiene
1100 U	UG/KG	Caprolactam
1100 U	UG/KG	4-Chloro-3-Methylphenol
1100 U	UG/KG	2-Methylnaphthalene
1100 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
1100 U	UG/KG	2,4,6-Trichlorophenol
2900 U	UG/KG	2,4,5-Trichlorophenol
1100 U	UG/KG	1,1-Biphenyl
1100 U	UG/KG	2-Chloronaphthalene
2900 U	UG/KG	2-Nitroaniline
1100 U	UG/KG	Dimethyl Phthalate
1100 U	UG/KG	2,6-Dinitrotoluene
1000 J	UG/KG	Acenaphthylene
2900 U	UG/KG	3-Nitroaniline
1100 U	UG/KG	Acenaphthene
2900 U	UG/KG	2,4-Dinitrophenol
2900 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
1100 U	UG/KG	Dibenzofuran
1100 U	UG/KG	2,4-Dinitrotoluene
1100 U	UG/KG	Diethyl Phthalate
1100 U	UG/KG	Fluorene
1100 U	UG/KG	4-Chlorophenyl Phenyl Ether
2900 U	UG/KG	4-Nitroaniline
2900 U	UG/KG	2-Methyl-4,6-Dinitrophenol
1100 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
1100 U	UG/KG	4-Bromophenyl Phenyl Ether
1100 U	UG/KG	Hexachlorobenzene (HCB)
1100 U	UG/KG	Atrazine
2900 U	UG/KG	Pentachlorophenol
1600	UG/KG	Phenanthrene
1600	UG/KG	Anthracene
540 J	UG/KG	Carbazole
1100 U	UG/KG	Di-n-Butylphthalate
11000	UG/KG	Fluoranthene
6800	UG/KG	Pyrene
1100 UJ	UG/KG	Benzyl Butyl Phthalate
1100 UJ	UG/KG	3,3'-Dichlorobenzidine
4300	UG/KG	Benzo(a)Anthracene
6200	UG/KG	Chrysene
1100 U	UG/KG	bis(2-Ethylhexyl) Phthalate
1100 U	UG/KG	Di-n-Octylphthalate
7300 J	UG/KG	Benzo(b)Fluoranthene
5400 J	UG/KG	Benzo(k)Fluoranthene
3100	UG/KG	Benzo-a-Pyrene
3100	UG/KG	Indeno (1,2,3-cd) Pyrene
1100	UG/KG	Dibenzo(a,h)Anthracene
2000	UG/KG	Benzo(ghi)Perylene
13	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6773** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS13SS / MD No: 1XT3 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XT3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:15
Ending:

RESULTS	UNITS	ANALYTE
1100 NJ	UG/KG	PHENANTHRENE, 1-METHYL-
890 NJ	UG/KG	9,10-ANTHRACENEDIONE
1300 NJ	UG/KG	PHENANTHRENE, 2,3-DIMETHYL-
1400 NJ	UG/KG	CYCLOPENTA (DEF) PHENANTHRENONE
780 NJ	UG/KG	BENZO [B] NAPHTHO [2,3-D] FURAN
1100 NJ	UG/KG	11H-BENZO [B] FLUORENE
1400 NJ	UG/KG	PYRENE, 1-METHYL-
1200 NJ	UG/KG	UNKNOWN PAH
660 NJ	UG/KG	PYRENE, 2-METHYL-
1500 NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
910 NJ	UG/KG	CHRYSENE, 5-METHYL-
770 NJ	UG/KG	5,12-NAPHTAHCENEDIONE
560 NJ	UG/KG	2,2'-BINAPHTHALANE
8200 J	UG/KG	6 UNKNOWN PAHS
19000 J	UG/KG	12 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6774** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS13SB / MD No: 1XT4 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XT4 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:25
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
390 U	UG/KG	Benzaldehyde
390 U	UG/KG	Phenol
390 U	UG/KG	bis(2-Chloroethyl) Ether
390 U	UG/KG	2-Chlorophenol
390 U	UG/KG	2-Methylphenol
390 U	UG/KG	bis(2-Chloroisopropyl) Ether
390 U	UG/KG	Acetophenone
390 U	UG/KG	(3-and/or 4-)Methylphenol
390 U	UG/KG	n-Nitrosodi-n-Propylamine
390 U	UG/KG	Hexachloroethane
390 U	UG/KG	Nitrobenzene
390 U	UG/KG	Isophorone
390 U	UG/KG	2-Nitrophenol
390 U	UG/KG	2,4-Dimethylphenol
390 U	UG/KG	bis(2-Chloroethoxy)Methane
390 U	UG/KG	2,4-Dichlorophenol
390 U	UG/KG	Naphthalene
390 U	UG/KG	4-Chloroaniline
390 U	UG/KG	Hexachlorobutadiene
390 U	UG/KG	Caprolactam
390 U	UG/KG	4-Chloro-3-Methylphenol
390 U	UG/KG	2-Methylnaphthalene
390 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
390 U	UG/KG	2,4,6-Trichlorophenol
980 U	UG/KG	2,4,5-Trichlorophenol
390 U	UG/KG	1,1-Biphenyl
390 U	UG/KG	2-Chloronaphthalene
980 U	UG/KG	2-Nitroaniline
390 U	UG/KG	Dimethyl Phthalate
390 U	UG/KG	2,6-Dinitrotoluene
390 U	UG/KG	Acenaphthylene
980 U	UG/KG	3-Nitroaniline
390 U	UG/KG	Acenaphthene
980 U	UG/KG	2,4-Dinitrophenol
980 U	UG/KG	4-Nitrophenol
390 U	UG/KG	Dibenzofuran
390 U	UG/KG	2,4-Dinitrotoluene
390 U	UG/KG	Diethyl Phthalate
390 U	UG/KG	Fluorene
390 U	UG/KG	4-Chlorophenyl Phenyl Ether
980 U	UG/KG	4-Nitroaniline
980 U	UG/KG	2-Methyl-4,6-Dinitrophenol
390 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
390 U	UG/KG	4-Bromophenyl Phenyl Ether
390 U	UG/KG	Hexachlorobenzene (HCB)
390 U	UG/KG	Atrazine
980 U	UG/KG	Pentachlorophenol
390 U	UG/KG	Phenanthrene
390 U	UG/KG	Anthracene
390 U	UG/KG	Carbazole
390 U	UG/KG	Di-n-Butylphthalate
130 J	UG/KG	Fluoranthene
89 J	UG/KG	Pyrene
390 UJ	UG/KG	Benzyl Butyl Phthalate
390 UJ	UG/KG	3,3'-Dichlorobenzidine
56 J	UG/KG	Benzo(a)Anthracene
91 J	UG/KG	Chrysene
390 U	UG/KG	bis(2-Ethylhexyl) Phthalate
390 U	UG/KG	Di-n-Octylphthalate
160 J	UG/KG	Benzo(b)Fluoranthene
170 J	UG/KG	Benzo(k)Fluoranthene
390 U	UG/KG	Benzo-a-Pyrene
51 J	UG/KG	Indeno (1,2,3-cd) Pyrene
390 U	UG/KG	Dibenzo(a,h)Anthracene
390 U	UG/KG	Benzo(ghi)Perylene
15	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6774** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS13SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XT4
D No: 1XT4

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:25
Ending:

RESULTS	UNITS	ANALYTE
1000 J	UG/KG	2 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6775** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS04SD / — MD No: 1XT5 — Inorg Contractor: SENTIN
Media: SEDIMENT — D No: 1XT5 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
130 J	UG/KG	Benzaldehyde
900 U	UG/KG	Phenol
900 U	UG/KG	bis(2-Chloroethyl) Ether
900 U	UG/KG	2-Chlorophenol
900 U	UG/KG	2-Methylphenol
900 U	UG/KG	bis(2-Chloroisopropyl) Ether
900 U	UG/KG	Acetophenone
900 U	UG/KG	(3-and/or 4-)Methylphenol
900 U	UG/KG	n-Nitrosodi-n-Propylamine
900 U	UG/KG	Hexachloroethane
900 U	UG/KG	Nitrobenzene
900 U	UG/KG	Isophorone
900 U	UG/KG	2-Nitrophenol
900 U	UG/KG	2,4-Dimethylphenol
900 U	UG/KG	bis(2-Chloroethoxy)Methane
900 U	UG/KG	2,4-Dichlorophenol
3.0 J	UG/KG	Naphthalene
900 U	UG/KG	4-Chloroaniline
900 U	UG/KG	Hexachlorobutadiene
900 U	UG/KG	Caprolactam
900 U	UG/KG	4-Chloro-3-Methylphenol
900 U	UG/KG	2-Methylnaphthalene
900 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
900 U	UG/KG	2,4,6-Trichlorophenol
2300 U	UG/KG	2,4,5-Trichlorophenol
900 U	UG/KG	1,1-Biphenyl
900 U	UG/KG	2-Chloronaphthalene
2300 U	UG/KG	2-Nitroaniline
900 U	UG/KG	Dimethyl Phthalate
900 U	UG/KG	2,6-Dinitrotoluene
900 U	UG/KG	Acenaphthylene
2300 U	UG/KG	3-Nitroaniline
900 U	UG/KG	Acenaphthene
2300 U	UG/KG	2,4-Dinitrophenol
2300 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
900 U	UG/KG	Dibenzofuran
900 U	UG/KG	2,4-Dinitrotoluene
900 U	UG/KG	Diethyl Phthalate
900 U	UG/KG	Fluorene
900 U	UG/KG	4-Chlorophenyl Phenyl Ether
2300 U	UG/KG	4-Nitroaniline
2300 U	UG/KG	2-Methyl-4,6-Dinitrophenol
900 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
900 U	UG/KG	4-Bromophenyl Phenyl Ether
900 U	UG/KG	Hexachlorobenzene (HCB)
900 U	UG/KG	Atrazine
2300 U	UG/KG	Pentachlorophenol
900 U	UG/KG	Phenanthrene
900 U	UG/KG	Anthracene
900 U	UG/KG	Carbazole
900 U	UG/KG	Di-n-Butylphthalate
900 U	UG/KG	Fluoranthene
120 J	UG/KG	Pyrene
900 UJ	UG/KG	Benzyl Butyl Phthalate
900 UJ	UG/KG	3,3'-Dichlorobenzidine
900 U	UG/KG	Benzo(a)Anthracene
900 U	UG/KG	Chrysene
900 U	UG/KG	bis(2-Ethylhexyl) Phthalate
900 U	UG/KG	Di-n-Octylphthalate
900 U	UG/KG	Benzo(b)Fluoranthene
900 U	UG/KG	Benzo(k)Fluoranthene
900 U	UG/KG	Benzo-a-Pyrene
900 U	UG/KG	Indeno (1,2,3-cd) Pyrene
900 U	UG/KG	Dibenzo(a,h)Anthracene
900 U	UG/KG	Benzo(ghi)Perylene
78	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6775** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS04SD / MD No: 1XT5 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XT5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:35
Ending:

RESULTS	UNITS	ANALYTE
1600 NJ	UG/KG	CHOLESTANOL
1700 NJ	UG/KG	ERGOST-5-EN-3-OL, (3.BETA.)-
9200 J	UG/KG	UNKNOWN ALCOHOL
1800 J	UG/KG	UNKNOWN KETONE
2200 NJ	UG/KG	STIGMAST-4-EN-3-ONE
54000 J	UG/KG	24 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6775** FY **2003** Project: **03-0474**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS04SD / MD No: 1XT5 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XT5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2 J	UG/KG	2-Methylnaphthalene
3 J	UG/KG	Naphthalene
9	UG/KG	Acenaphthylene
5	UG/KG	Acenaphthene
6	UG/KG	Fluorene
11	UG/KG	Phenanthrene
34	UG/KG	Anthracene
50	UG/KG	Fluoranthene
33	UG/KG	Pyrene
19	UG/KG	Benzo(a)Anthracene
36	UG/KG	Chrysene
NA	UG/KG	Benzo(b)Fluoranthene
NA	UG/KG	Benzo(k)Fluoranthene
17	UG/KG	Benzo-a-Pyrene
NA	UG/KG	Indeno (1,2,3-cd) Pyrene
6	UG/KG	Dibenzo(a,h)Anthracene
NA	UG/KG	Benzo(ghi)Perylene
49 U	UG/KG	Pentachlorophenol

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6776** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS05SD / — MD No: 1XT6 — Inorg Contractor: SENTIN
Media: SEDIMENT — D No: 1XT6 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
430 U	UG/KG	Benzaldehyde
430 U	UG/KG	Phenol
430 U	UG/KG	bis(2-Chloroethyl) Ether
430 U	UG/KG	2-Chlorophenol
430 U	UG/KG	2-Methylphenol
430 U	UG/KG	bis(2-Chloroisopropyl) Ether
430 U	UG/KG	Acetophenone
430 U	UG/KG	(3-and/or 4-)Methylphenol
430 U	UG/KG	n-Nitrosodi-n-Propylamine
430 U	UG/KG	Hexachloroethane
430 U	UG/KG	Nitrobenzene
430 U	UG/KG	Isophorone
430 U	UG/KG	2-Nitrophenol
430 U	UG/KG	2,4-Dimethylphenol
430 U	UG/KG	bis(2-Chloroethoxy)Methane
430 U	UG/KG	2,4-Dichlorophenol
430 U	UG/KG	Naphthalene
430 U	UG/KG	4-Chloroaniline
430 U	UG/KG	Hexachlorobutadiene
430 U	UG/KG	Caprolactam
430 U	UG/KG	4-Chloro-3-Methylphenol
430 U	UG/KG	2-Methylnaphthalene
430 UJ	UG/KG	Hexachlorocyclopentadiene (HCCP)
430 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
430 U	UG/KG	1,1-Biphenyl
430 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
430 U	UG/KG	Dimethyl Phthalate
430 U	UG/KG	2,6-Dinitrotoluene
430 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
430 U	UG/KG	Acenaphthene
1100 UR	UG/KG	2,4-Dinitrophenol
1100 UJ	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
430 U	UG/KG	Dibenzofuran
430 U	UG/KG	2,4-Dinitrotoluene
430 U	UG/KG	Diethyl Phthalate
430 U	UG/KG	Fluorene
430 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 UJ	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
430 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
430 U	UG/KG	4-Bromophenyl Phenyl Ether
430 UJ	UG/KG	Hexachlorobenzene (HCB)
430 U	UG/KG	Atrazine
1100 UJ	UG/KG	Pentachlorophenol
430 U	UG/KG	Phenanthrene
430 U	UG/KG	Anthracene
430 U	UG/KG	Carbazole
430 U	UG/KG	Di-n-Butylphthalate
430 U	UG/KG	Fluoranthene
430 U	UG/KG	Pyrene
430 U	UG/KG	Benzyl Butyl Phthalate
430 U	UG/KG	3,3'-Dichlorobenzidine
430 U	UG/KG	Benzo(a)Anthracene
430 U	UG/KG	Chrysene
430 U	UG/KG	bis(2-Ethylhexyl) Phthalate
430 U	UG/KG	Di-n-Octylphthalate
430 U	UG/KG	Benzo(b)Fluoranthene
430 U	UG/KG	Benzo(k)Fluoranthene
430 U	UG/KG	Benzo-a-Pyrene
430 UJ	UG/KG	Indeno (1,2,3-cd) Pyrene
430 UJ	UG/KG	Dibenzo(a,h)Anthracene
430 U	UG/KG	Benzo(ghi)Perylene
54	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6776** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS05SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XT6
D No: 1XT6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:

RESULTS	UNITS	ANALYTE
1200 NJ	UG/KG	BENZENE, 1-METHYL-2-ISOPROPYL
500 J	UG/KG	UNKNOWN CARBOXYLIC ACID
2500 NJ	UG/KG	PHENANTHRENONE DERIVATIVE
800 NJ	UG/KG	STIGMAST-4-EN-3-ONE
140000 J	UG/KG	25 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6776** FY **2003** Project: **03-0474**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS05SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XT6
D No: 1XT6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.8 J	UG/KG	2-Methylnaphthalene
0.9 J	UG/KG	Naphthalene
2 U	UG/KG	Acenaphthylene
0.9 J	UG/KG	Acenaphthene
1 J	UG/KG	Fluorene
23 U	UG/KG	Phenanthrene
7	UG/KG	Anthracene
34	UG/KG	Fluoranthene
27	UG/KG	Pyrene
12	UG/KG	Benzo(a)Anthracene
26	UG/KG	Chrysene
NA	UG/KG	Benzo(b)Fluoranthene
NA	UG/KG	Benzo(k)Fluoranthene
16	UG/KG	Benzo-a-Pyrene
NA	UG/KG	Indeno (1,2,3-cd) Pyrene
4	UG/KG	Dibenzo(a,h)Anthracene
NA	UG/KG	Benzo(ghi)Perylene
23 U	UG/KG	Pentachlorophenol

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6777** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS07SD / MD No: 1XT7 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XT7 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
330 U	UG/KG	Benzaldehyde
330 U	UG/KG	Phenol
330 U	UG/KG	bis(2-Chloroethyl) Ether
330 U	UG/KG	2-Chlorophenol
330 U	UG/KG	2-Methylphenol
330 U	UG/KG	bis(2-Chloroisopropyl) Ether
330 U	UG/KG	Acetophenone
330 U	UG/KG	(3-and/or 4-)Methylphenol
330 U	UG/KG	n-Nitrosodi-n-Propylamine
330 U	UG/KG	Hexachloroethane
330 U	UG/KG	Nitrobenzene
330 U	UG/KG	Isophorone
330 U	UG/KG	2-Nitrophenol
330 U	UG/KG	2,4-Dimethylphenol
330 U	UG/KG	bis(2-Chloroethoxy)Methane
330 U	UG/KG	2,4-Dichlorophenol
330 U	UG/KG	Naphthalene
330 U	UG/KG	4-Chloroaniline
330 U	UG/KG	Hexachlorobutadiene
330 U	UG/KG	Caprolactam
330 U	UG/KG	4-Chloro-3-Methylphenol
330 U	UG/KG	2-Methylnaphthalene
330 UJ	UG/KG	Hexachlorocyclopentadiene (HCCP)
330 U	UG/KG	2,4,6-Trichlorophenol
830 U	UG/KG	2,4,5-Trichlorophenol
330 U	UG/KG	1,1-Biphenyl
330 U	UG/KG	2-Chloronaphthalene
830 U	UG/KG	2-Nitroaniline
330 U	UG/KG	Dimethyl Phthalate
330 U	UG/KG	2,6-Dinitrotoluene
330 U	UG/KG	Acenaphthylene
830 U	UG/KG	3-Nitroaniline
330 U	UG/KG	Acenaphthene
830 UR	UG/KG	2,4-Dinitrophenol
830 UJ	UG/KG	4-Nitrophenol
330 U	UG/KG	Dibenzofuran
330 U	UG/KG	2,4-Dinitrotoluene
330 U	UG/KG	Diethyl Phthalate
330 U	UG/KG	Fluorene
330 U	UG/KG	4-Chlorophenyl Phenyl Ether
830 UJ	UG/KG	4-Nitroaniline
830 U	UG/KG	2-Methyl-4,6-Dinitrophenol
330 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
330 U	UG/KG	4-Bromophenyl Phenyl Ether
330 UJ	UG/KG	Hexachlorobenzene (HCB)
330 U	UG/KG	Atrazine
830 UJ	UG/KG	Pentachlorophenol
330 U	UG/KG	Phenanthrene
330 U	UG/KG	Anthracene
330 U	UG/KG	Carbazole
330 U	UG/KG	Di-n-Butylphthalate
330 U	UG/KG	Fluoranthene
330 U	UG/KG	Pyrene
330 U	UG/KG	Benzyl Butyl Phthalate
330 U	UG/KG	3,3'-Dichlorobenzidine
330 U	UG/KG	Benzo(a)Anthracene
330 U	UG/KG	Chrysene
330 U	UG/KG	bis(2-Ethylhexyl) Phthalate
330 U	UG/KG	Di-n-Octylphthalate
330 U	UG/KG	Benzo(b)Fluoranthene
330 U	UG/KG	Benzo(k)Fluoranthene
330 U	UG/KG	Benzo-a-Pyrene
330 UJ	UG/KG	Indeno (1,2,3-cd) Pyrene
330 UJ	UG/KG	Dibenzo(a,h)Anthracene
330 U	UG/KG	Benzo(ghi)Perylene
18	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6777** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS07SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XT7
D No: 1XT7

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:45
Ending:

RESULTS	UNITS	ANALYTE
69 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6777** FY **2003** Project: **03-0474**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS07SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XT7
D No: 1XT7

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.4 J	UG/KG	2-Methylnaphthalene
0.4 J	UG/KG	Naphthalene
0.8 U	UG/KG	Acenaphthylene
0.9 U	UG/KG	Acenaphthene
0.8 U	UG/KG	Fluorene
0.9 U	UG/KG	Phenanthrene
0.8 U	UG/KG	Anthracene
2 U	UG/KG	Fluoranthene
2 U	UG/KG	Pyrene
0.8 U	UG/KG	Benzo(a)Anthracene
1 U	UG/KG	Chrysene
NA	UG/KG	Benzo(b)Fluoranthene
NA	UG/KG	Benzo(k)Fluoranthene
0.8 U	UG/KG	Benzo-a-Pyrene
NA	UG/KG	Indeno (1,2,3-cd) Pyrene
0.8 U	UG/KG	Dibenzo(a,h)Anthracene
NA	UG/KG	Benzo(ghi)Perylene
13 U	UG/KG	Pentachlorophenol

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6778** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS23SS / MD No: 1XT8 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XT8 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:55
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
450 U	UG/KG	Benzaldehyde
450 U	UG/KG	Phenol
450 U	UG/KG	bis(2-Chloroethyl) Ether
450 U	UG/KG	2-Chlorophenol
450 U	UG/KG	2-Methylphenol
450 U	UG/KG	bis(2-Chloroisopropyl) Ether
450 U	UG/KG	Acetophenone
450 U	UG/KG	(3-and/or 4-)Methylphenol
450 U	UG/KG	n-Nitrosodi-n-Propylamine
450 U	UG/KG	Hexachloroethane
450 U	UG/KG	Nitrobenzene
450 U	UG/KG	Isophorone
450 U	UG/KG	2-Nitrophenol
450 U	UG/KG	2,4-Dimethylphenol
450 U	UG/KG	bis(2-Chloroethoxy)Methane
450 U	UG/KG	2,4-Dichlorophenol
450 U	UG/KG	Naphthalene
450 U	UG/KG	4-Chloroaniline
450 U	UG/KG	Hexachlorobutadiene
450 U	UG/KG	Caprolactam
450 U	UG/KG	4-Chloro-3-Methylphenol
450 U	UG/KG	2-Methylnaphthalene
450 UJ	UG/KG	Hexachlorocyclopentadiene (HCCP)
450 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
450 U	UG/KG	1,1-Biphenyl
450 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
450 U	UG/KG	Dimethyl Phthalate
450 U	UG/KG	2,6-Dinitrotoluene
66 J	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
450 U	UG/KG	Acenaphthene
1100 UR	UG/KG	2,4-Dinitrophenol
1100 UJ	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
450 U	UG/KG	Dibenzofuran
450 U	UG/KG	2,4-Dinitrotoluene
450 U	UG/KG	Diethyl Phthalate
450 U	UG/KG	Fluorene
450 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 UJ	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
450 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
450 U	UG/KG	4-Bromophenyl Phenyl Ether
450 UJ	UG/KG	Hexachlorobenzene (HCB)
450 U	UG/KG	Atrazine
1100 UJ	UG/KG	Pentachlorophenol
59 J	UG/KG	Phenanthrene
430 U	UG/KG	Anthracene
450 U	UG/KG	Carbazole
450 U	UG/KG	Di-n-Butylphthalate
520	UG/KG	Fluoranthene
450	UG/KG	Pyrene
450 U	UG/KG	Benzyl Butyl Phthalate
450 U	UG/KG	3,3'-Dichlorobenzidine
430 J	UG/KG	Benzo(a)Anthracene
510	UG/KG	Chrysene
450 U	UG/KG	bis(2-Ethylhexyl) Phthalate
450 U	UG/KG	Di-n-Octylphthalate
NA	UG/KG	Benzo(b)Fluoranthene
520	UG/KG	Benzo(k)Fluoranthene
380 J	UG/KG	Benzo-a-Pyrene
340 J	UG/KG	Indeno (1,2,3-cd) Pyrene
120 J	UG/KG	Dibenzo(a,h)Anthracene
180 J	UG/KG	Benzo(ghi)Perylene
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6778** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS23SS / MD No: 1XT8 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XT8 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:55
Ending:

RESULTS	UNITS	ANALYTE
140 NJ	UG/KG	CYCLOPENTA (DEF) PHENANTHRENONE
130 NJ	UG/KG	PYRENE, 2-METHYL-
210 NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
240 NJ	UG/KG	BENZ [A] ANTHRACENE, 7-METHYL-
210 NJ	UG/KG	5, 12-NAPHTHACENEDIONE
240 NJ	UG/KG	BENZO [E] PYRENE
440 NJ	UG/KG	BENZO [J] FLUORANTHENE
110 NJ	UG/KG	BENZ [E] ACEPHENANTHRYLENE
3600 J	UG/KG	21 UNKNOWN COMPOUNDS
170 NJ	UG/KG	STIGMAST-4-EN-3-ONE

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6779** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS15SS / MD No: 1XT9 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XT9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
390 U	UG/KG	Benzaldehyde
390 U	UG/KG	Phenol
390 U	UG/KG	bis(2-Chloroethyl) Ether
390 U	UG/KG	2-Chlorophenol
390 U	UG/KG	2-Methylphenol
390 U	UG/KG	bis(2-Chloroisopropyl) Ether
390 U	UG/KG	Acetophenone
390 U	UG/KG	(3-and/or 4-)Methylphenol
390 U	UG/KG	n-Nitrosodi-n-Propylamine
390 U	UG/KG	Hexachloroethane
390 U	UG/KG	Nitrobenzene
390 U	UG/KG	Isophorone
390 U	UG/KG	2-Nitrophenol
390 U	UG/KG	2,4-Dimethylphenol
390 U	UG/KG	bis(2-Chloroethoxy)Methane
390 U	UG/KG	2,4-Dichlorophenol
390 U	UG/KG	Naphthalene
390 U	UG/KG	4-Chloroaniline
390 U	UG/KG	Hexachlorobutadiene
390 U	UG/KG	Caprolactam
390 U	UG/KG	4-Chloro-3-Methylphenol
390 U	UG/KG	2-Methylnaphthalene
390 UJ	UG/KG	Hexachlorocyclopentadiene (HCCP)
390 U	UG/KG	2,4,6-Trichlorophenol
990 U	UG/KG	2,4,5-Trichlorophenol
390 U	UG/KG	1,1-Biphenyl
390 U	UG/KG	2-Chloronaphthalene
990 U	UG/KG	2-Nitroaniline
390 U	UG/KG	Dimethyl Phthalate
390 U	UG/KG	2,6-Dinitrotoluene
250 J	UG/KG	Acenaphthylene
990 U	UG/KG	3-Nitroaniline
390 U	UG/KG	Acenaphthene
990 UR	UG/KG	2,4-Dinitrophenol
990 UJ	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
390 U	UG/KG	Dibenzofuran
390 U	UG/KG	2,4-Dinitrotoluene
390 U	UG/KG	Diethyl Phthalate
390 U	UG/KG	Fluorene
390 U	UG/KG	4-Chlorophenyl Phenyl Ether
990 UJ	UG/KG	4-Nitroaniline
990 U	UG/KG	2-Methyl-4,6-Dinitrophenol
390 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
390 U	UG/KG	4-Bromophenyl Phenyl Ether
390 UJ	UG/KG	Hexachlorobenzene (HCB)
390 U	UG/KG	Atrazine
990 UJ	UG/KG	Pentachlorophenol
1100	UG/KG	Phenanthrene
370 J	UG/KG	Anthracene
250 J	UG/KG	Carbazole
390 U	UG/KG	Di-n-Butylphthalate
3100	UG/KG	Fluoranthene
2200	UG/KG	Pyrene
390 U	UG/KG	Benzyl Butyl Phthalate
390 U	UG/KG	3,3'-Dichlorobenzidine
690	UG/KG	Benzo(a)Anthracene
1700	UG/KG	Chrysene
390 U	UG/KG	bis(2-Ethylhexyl) Phthalate
390 U	UG/KG	Di-n-Octylphthalate
1500	UG/KG	Benzo(b)Fluoranthene
1100	UG/KG	Benzo(k)Fluoranthene
650	UG/KG	Benzo-a-Pyrene
740 J	UG/KG	Indeno (1,2,3-cd) Pyrene
200 J	UG/KG	Dibenzo(a,h)Anthracene
360 J	UG/KG	Benzo(ghi)Perylene
16	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6779** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS15SS / MD No: 1XT9 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XT9 Org.Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:40
Ending:

RESULTS	UNITS	ANALYTE
700 NJ	UG/KG	9,10-ANTHRACENEDIONE
350 NJ	UG/KG	11H-BENZO [B] FLUORENE
440 NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
300 NJ	UG/KG	CHRYSENE, 1-METHYL-
260 NJ	UG/KG	BENZ (A) ANTHRACENE-7, 12-DIONE
2000 J	UG/KG	4 UNKNOWN PAHS
12000 J	UG/KG	19 UNKNOWN COMPOUNDS
190 NJ	UG/KG	1,2:3,4-DIBENZPYRENE

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6780** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS15SB / MD No: 1XW0 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Benzaldehyde
420 U	UG/KG	Phenol
420 U	UG/KG	bis(2-Chloroethyl) Ether
420 U	UG/KG	2-Chlorophenol
420 U	UG/KG	2-Methylphenol
420 U	UG/KG	bis(2-Chloroisopropyl) Ether
420 U	UG/KG	Acetophenone
420 U	UG/KG	(3-and/or 4-)Methylphenol
420 U	UG/KG	n-Nitrosodi-n-Propylamine
420 U	UG/KG	Hexachloroethane
420 U	UG/KG	Nitrobenzene
420 U	UG/KG	Isophorone
420 U	UG/KG	2-Nitrophenol
420 U	UG/KG	2,4-Dimethylphenol
420 U	UG/KG	bis(2-Chloroethoxy)Methane
420 U	UG/KG	2,4-Dichlorophenol
420 U	UG/KG	Naphthalene
420 U	UG/KG	4-Chloroaniline
420 U	UG/KG	Hexachlorobutadiene
420 U	UG/KG	Caprolactam
420 U	UG/KG	4-Chloro-3-Methylphenol
420 U	UG/KG	2-Methylnaphthalene
420 UJ	UG/KG	Hexachlorocyclopentadiene (HCCP)
420 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
420 U	UG/KG	1,1-Biphenyl
420 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
420 U	UG/KG	Dimethyl Phthalate
420 U	UG/KG	2,6-Dinitrotoluene
420 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
420 U	UG/KG	Acenaphthene
1100 UR	UG/KG	2,4-Dinitrophenol
1100 UJ	UG/KG	4-Nitrophenol
420 U	UG/KG	Dibenzofuran
420 U	UG/KG	2,4-Dinitrotoluene
420 U	UG/KG	Diethyl Phthalate
420 U	UG/KG	Fluorene
420 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 UJ	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
420 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
420 U	UG/KG	4-Bromophenyl Phenyl Ether
420 UJ	UG/KG	Hexachlorobenzene (HCB)
420 U	UG/KG	Atrazine
1100 UJ	UG/KG	Pentachlorophenol
420 U	UG/KG	Phenanthrene
420 U	UG/KG	Anthracene
420 U	UG/KG	Carbazole
420 U	UG/KG	Di-n-Butylphthalate
420 U	UG/KG	Fluoranthene
420 U	UG/KG	Pyrene
420 U	UG/KG	Benzyl Butyl Phthalate
420 U	UG/KG	3,3'-Dichlorobenzidine
420 U	UG/KG	Benzo(a)Anthracene
420 U	UG/KG	Chrysene
420 U	UG/KG	bis(2-Ethylhexyl) Phthalate
420 U	UG/KG	Di-n-Octylphthalate
420 U	UG/KG	Benzo(b)Fluoranthene
420 U	UG/KG	Benzo(k)Fluoranthene
420 U	UG/KG	Benzo-a-Pyrene
420 UJ	UG/KG	Indeno (1,2,3-cd) Pyrene
420 UJ	UG/KG	Dibenzo(a,h)Anthracene
420 U	UG/KG	Benzo(ghi)Perylene
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6780** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS15SB / MD No: 1XW0 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:50
Ending:

RESULTS	UNITS	ANALYTE
310 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6781** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS02SS / — MD No: 1XW1 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XW1 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:13
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
430 U	UG/KG	Benzaldehyde
430 U	UG/KG	Phenol
430 U	UG/KG	bis(2-Chloroethyl) Ether
430 U	UG/KG	2-Chlorophenol
430 U	UG/KG	2-Methylphenol
430 U	UG/KG	bis(2-Chloroisopropyl) Ether
430 U	UG/KG	Acetophenone
430 U	UG/KG	(3-and/or 4-)Methylphenol
430 U	UG/KG	n-Nitrosodi-n-Propylamine
430 U	UG/KG	Hexachloroethane
430 U	UG/KG	Nitrobenzene
430 U	UG/KG	Isophorone
430 U	UG/KG	2-Nitrophenol
430 U	UG/KG	2,4-Dimethylphenol
430 U	UG/KG	bis(2-Chloroethoxy)Methane
430 U	UG/KG	2,4-Dichlorophenol
430 U	UG/KG	Naphthalene
430 U	UG/KG	4-Chloroaniline
430 U	UG/KG	Hexachlorobutadiene
430 U	UG/KG	Caprolactam
430 U	UG/KG	4-Chloro-3-Methylphenol
430 U	UG/KG	2-Methylnaphthalene
430 UJ	UG/KG	Hexachlorocyclopentadiene (HCCP)
430 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
430 U	UG/KG	1,1-Biphenyl
430 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
430 U	UG/KG	Dimethyl Phthalate
430 U	UG/KG	2,6-Dinitrotoluene
430 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
430 U	UG/KG	Acenaphthene
1100 UR	UG/KG	2,4-Dinitrophenol
1100 UJ	UG/KG	4-Nitrophenol
430 U	UG/KG	Dibenzofuran
430 U	UG/KG	2,4-Dinitrotoluene
430 U	UG/KG	Diethyl Phthalate
430 U	UG/KG	Fluorene
430 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 UJ	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
430 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
430 U	UG/KG	4-Bromophenyl Phenyl Ether
430 UJ	UG/KG	Hexachlorobenzene (HCB)
430 U	UG/KG	Atrazine
1100 UJ	UG/KG	Pentachlorophenol
430 U	UG/KG	Phenanthrene
430 U	UG/KG	Anthracene
430 U	UG/KG	Carbazole
430 U	UG/KG	Di-n-Butylphthalate
430 U	UG/KG	Fluoranthene
430 U	UG/KG	Pyrene
430 U	UG/KG	Benzyl Butyl Phthalate
430 U	UG/KG	3,3'-Dichlorobenzidine
430 U	UG/KG	Benzo(a)Anthracene
430 U	UG/KG	Chrysene
430 U	UG/KG	bis(2-Ethylhexyl) Phthalate
430 U	UG/KG	Di-n-Octylphthalate
430 U	UG/KG	Benzo(b)Fluoranthene
430 U	UG/KG	Benzo(k)Fluoranthene
430 U	UG/KG	Benzo-a-Pyrene
430 UJ	UG/KG	Indeno (1,2,3-cd) Pyrene
430 UJ	UG/KG	Dibenzo(a,h)Anthracene
430 U	UG/KG	Benzo(ghi)Perylene
23	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6781** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS02SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XW1
D No: 1XW1

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:13
Ending:

RESULTS	UNITS	ANALYTE
190 NJ	UG/KG	STIGMAST-4-EN-3-ONE
2200 J	UG/KG	5 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6782** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS02SB / MD No: 1XW2 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW2 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:34
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
410 U	UG/KG	Benzaldehyde
410 U	UG/KG	Phenol
410 U	UG/KG	bis(2-Chloroethyl) Ether
410 U	UG/KG	2-Chlorophenol
410 U	UG/KG	2-Methylphenol
410 U	UG/KG	bis(2-Chloroisopropyl) Ether
410 U	UG/KG	Acetophenone
410 U	UG/KG	(3-and/or 4-)Methylphenol
410 U	UG/KG	n-Nitrosodi-n-Propylamine
410 U	UG/KG	Hexachloroethane
410 U	UG/KG	Nitrobenzene
410 U	UG/KG	Isophorone
410 U	UG/KG	2-Nitrophenol
410 U	UG/KG	2,4-Dimethylphenol
410 U	UG/KG	bis(2-Chloroethoxy)Methane
410 U	UG/KG	2,4-Dichlorophenol
410 U	UG/KG	Naphthalene
410 U	UG/KG	4-Chloroaniline
410 U	UG/KG	Hexachlorobutadiene
410 U	UG/KG	Caprolactam
410 U	UG/KG	4-Chloro-3-Methylphenol
410 U	UG/KG	2-Methylnaphthalene
410 UJ	UG/KG	Hexachlorocyclopentadiene (HCCP)
410 U	UG/KG	2,4,6-Trichlorophenol
1000 U	UG/KG	2,4,5-Trichlorophenol
410 U	UG/KG	1,1-Biphenyl
410 U	UG/KG	2-Chloronaphthalene
1000 U	UG/KG	2-Nitroaniline
410 U	UG/KG	Dimethyl Phthalate
410 U	UG/KG	2,6-Dinitrotoluene
410 U	UG/KG	Acenaphthylene
1000 U	UG/KG	3-Nitroaniline
410 U	UG/KG	Acenaphthene
1000 UR	UG/KG	2,4-Dinitrophenol
1000 UJ	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
410 U	UG/KG	Dibenzofuran
410 U	UG/KG	2,4-Dinitrotoluene
410 U	UG/KG	Diethyl Phthalate
410 U	UG/KG	Fluorene
410 U	UG/KG	4-Chlorophenyl Phenyl Ether
1000 UJ	UG/KG	4-Nitroaniline
1000 U	UG/KG	2-Methyl-4,6-Dinitrophenol
410 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
410 U	UG/KG	4-Bromophenyl Phenyl Ether
410 UJ	UG/KG	Hexachlorobenzene (HCB)
410 U	UG/KG	Atrazine
1000 UJ	UG/KG	Pentachlorophenol
410 U	UG/KG	Phenanthrene
410 U	UG/KG	Anthracene
410 U	UG/KG	Carbazole
410 U	UG/KG	Di-n-Butylphthalate
410 U	UG/KG	Fluoranthene
410 U	UG/KG	Pyrene
410 U	UG/KG	Benzyl Butyl Phthalate
410 U	UG/KG	3,3'-Dichlorobenzidine
410 U	UG/KG	Benzo(a)Anthracene
410 U	UG/KG	Chrysene
410 U	UG/KG	bis(2-Ethylhexyl) Phthalate
410 U	UG/KG	Di-n-Octylphthalate
410 U	UG/KG	Benzo(b)Fluoranthene
410 U	UG/KG	Benzo(k)Fluoranthene
410 U	UG/KG	Benzo-a-Pyrene
410 UJ	UG/KG	Indeno (1,2,3-cd) Pyrene
410 UJ	UG/KG	Dibenzo(a,h)Anthracene
410 U	UG/KG	Benzo(ghi)Perylene
19	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6782** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS02SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XW2
D No: 1XW2

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:34
Ending:

RESULTS	UNITS	ANALYTE
220 J	UG/KG	2 UNKNOWN OCMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6783** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS14SS / MD No: 1XW3 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XW3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
380 U	UG/KG	Benzaldehyde
380 U	UG/KG	Phenol
380 U	UG/KG	bis(2-Chloroethyl) Ether
380 U	UG/KG	2-Chlorophenol
380 U	UG/KG	2-Methylphenol
380 U	UG/KG	bis(2-Chloroisopropyl) Ether
380 U	UG/KG	Acetophenone
380 U	UG/KG	(3-and/or 4-)Methylphenol
380 U	UG/KG	n-Nitrosodi-n-Propylamine
380 U	UG/KG	Hexachloroethane
380 U	UG/KG	Nitrobenzene
380 U	UG/KG	Isophorone
380 U	UG/KG	2-Nitrophenol
380 U	UG/KG	2,4-Dimethylphenol
380 U	UG/KG	bis(2-Chloroethoxy)Methane
380 U	UG/KG	2,4-Dichlorophenol
380 U	UG/KG	Naphthalene
380 U	UG/KG	4-Chloroaniline
380 U	UG/KG	Hexachlorobutadiene
380 U	UG/KG	Caprolactam
380 U	UG/KG	4-Chloro-3-Methylphenol
380 U	UG/KG	2-Methylnaphthalene
380 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
380 U	UG/KG	2,4,6-Trichlorophenol
970 U	UG/KG	2,4,5-Trichlorophenol
380 U	UG/KG	1,1-Biphenyl
380 U	UG/KG	2-Chloronaphthalene
970 U	UG/KG	2-Nitroaniline
380 U	UG/KG	Dimethyl Phthalate
380 U	UG/KG	2,6-Dinitrotoluene
380 U	UG/KG	Acenaphthylene
970 U	UG/KG	3-Nitroaniline
380 U	UG/KG	Acenaphthene
970 UJ	UG/KG	2,4-Dinitrophenol
970 U	UG/KG	4-Nitrophenol
380 U	UG/KG	Dibenzofuran
380 U	UG/KG	2,4-Dinitrotoluene
380 U	UG/KG	Diethyl Phthalate
380 U	UG/KG	Fluorene
380 U	UG/KG	4-Chlorophenyl Phenyl Ether
970 U	UG/KG	4-Nitroaniline
970 U	UG/KG	2-Methyl-4,6-Dinitrophenol
380 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
380 U	UG/KG	4-Bromophenyl Phenyl Ether
380 U	UG/KG	Hexachlorobenzene (HCB)
380 U	UG/KG	Atrazine
970 U	UG/KG	Pentachlorophenol
320 J	UG/KG	Phenanthrene
1100	UG/KG	Anthracene
280 J	UG/KG	Carbazole
380 U	UG/KG	Di-n-Butylphthalate
3100	UG/KG	Fluoranthene
3300	UG/KG	Pyrene
380 U	UG/KG	Benzyl Butyl Phthalate
380 U	UG/KG	3,3'-Dichlorobenzidine
2300	UG/KG	Benzo(a)Anthracene
3100	UG/KG	Chrysene
380 U	UG/KG	bis(2-Ethylhexyl) Phthalate
380 U	UG/KG	Di-n-Octylphthalate
4200	UG/KG	Benzo(b)Fluoranthene
2400	UG/KG	Benzo(k)Fluoranthene
2300	UG/KG	Benzo-a-Pyrene
1700	UG/KG	Indeno (1,2,3-cd) Pyrene
580	UG/KG	Dibenzo(a,h)Anthracene
820	UG/KG	Benzo(ghi)Perylene
14	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6783** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS14SS / MD No: 1XW3 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XW3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:40
Ending:

RESULTS	UNITS	ANALYTE
470 NJ	UG/KG	CYCLOPENTA (DEF) PHENANTHRENONE
1700 NJ	UG/KG	11H-BENZO [A] FLUORENE
1300 NJ	UG/KG	PYRENE, 1-METHYL-
720 NJ	UG/KG	PYRENE, 2-METHYL-
870 NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
550 NJ	UG/KG	BENZO [B] NAPHTHO [2,1-D] THIOPHENE
520 NJ	UG/KG	3,4-DIHYDROCYCLOPENTA (CD) PYRENE
840 NJ	UG/KG	TRIPHENYLENE, 2-METHYL-
380 NJ	UG/KG	5,12-NAPHTHACENEDIONE
2600 NJ	UG/KG	BENZO [E] PYRENE
710 NJ	UG/KG	PERYLENE
550 NJ	UG/KG	1,2:7,8-DIBENZPHENANTHRENE
5600 J	UG/KG	8 UNKNOWN PAHS
5500 J	UG/KG	8 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6784** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS14SB / MD No: 1XW4 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW4 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
390 U	UG/KG	Benzaldehyde
390 U	UG/KG	Phenol
390 U	UG/KG	bis(2-Chloroethyl) Ether
390 U	UG/KG	2-Chlorophenol
390 U	UG/KG	2-Methylphenol
390 U	UG/KG	bis(2-Chloroisopropyl) Ether
390 U	UG/KG	Acetophenone
390 U	UG/KG	(3-and/or 4-)Methylphenol
390 U	UG/KG	n-Nitrosodi-n-Propylamine
390 U	UG/KG	Hexachloroethane
390 U	UG/KG	Nitrobenzene
390 U	UG/KG	Isophorone
390 U	UG/KG	2-Nitrophenol
390 U	UG/KG	2,4-Dimethylphenol
390 U	UG/KG	bis(2-Chloroethoxy)Methane
390 U	UG/KG	2,4-Dichlorophenol
390 U	UG/KG	Naphthalene
390 U	UG/KG	4-Chloroaniline
390 U	UG/KG	Hexachlorobutadiene
390 U	UG/KG	Caprolactam
390 U	UG/KG	4-Chloro-3-Methylphenol
390 U	UG/KG	2-Methylnaphthalene
390 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
390 U	UG/KG	2,4,6-Trichlorophenol
980 U	UG/KG	2,4,5-Trichlorophenol
390 U	UG/KG	1,1-Biphenyl
390 U	UG/KG	2-Chloronaphthalene
980 U	UG/KG	2-Nitroaniline
390 U	UG/KG	Dimethyl Phthalate
390 U	UG/KG	2,6-Dinitrotoluene
330 J	UG/KG	Acenaphthylene
980 U	UG/KG	3-Nitroaniline
390 U	UG/KG	Acenaphthene
980 UJ	UG/KG	2,4-Dinitrophenol
980 U	UG/KG	4-Nitrophenol
390 U	UG/KG	Dibenzofuran
390 U	UG/KG	2,4-Dinitrotoluene
390 U	UG/KG	Diethyl Phthalate
390 U	UG/KG	Fluorene
390 U	UG/KG	4-Chlorophenyl Phenyl Ether
980 U	UG/KG	4-Nitroaniline
980 U	UG/KG	2-Methyl-4,6-Dinitrophenol
390 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
390 U	UG/KG	4-Bromophenyl Phenyl Ether
390 U	UG/KG	Hexachlorobenzene (HCB)
390 U	UG/KG	Atrazine
980 U	UG/KG	Pentachlorophenol
510	UG/KG	Phenanthrene
690	UG/KG	Anthracene
210 J	UG/KG	Carbazole
390 U	UG/KG	Di-n-Butylphthalate
2200	UG/KG	Fluoranthene
2400	UG/KG	Pyrene
390 U	UG/KG	Benzyl Butyl Phthalate
390 U	UG/KG	3,3'-Dichlorobenzidine
1400	UG/KG	Benzo(a)Anthracene
2100	UG/KG	Chrysene
390 U	UG/KG	bis(2-Ethylhexyl) Phthalate
390 U	UG/KG	Di-n-Octylphthalate
2400	UG/KG	Benzo(b)Fluoranthene
2000	UG/KG	Benzo(k)Fluoranthene
1400	UG/KG	Benzo-a-Pyrene
1100	UG/KG	Indeno (1,2,3-cd) Pyrene
390	UG/KG	Dibenzo(a,h)Anthracene
540	UG/KG	Benzo(ghi)Perylene
15	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6784** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS14SB / MD No: 1XW4 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW4 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:50
Ending:

RESULTS	UNITS	ANALYTE
320 NJ	UG/KG	9,10-ANTHRACENEDIONE
320 NJ	UG/KG	CYCLOPENTA (dEF) PHENANTHRENONE
340 NJ	UG/KG	PYRENE, 1-METHY-
270 NJ	UG/KG	ELLIPTICINE
500 NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
270 NJ	UG/KG	BENZO [B] NAPHTHO [1,2-D] THIOPHENE
290 NJ	UG/KG	3,4-DIHYDROCYCLOPENTA (CD) PYRENE
290 NJ	UG/KG	5,12-NAPHTHACENEDIONE
1900 NJ	UG/KG	BENZO [E] PYRENE
420 NJ	UG/KG	PERYLENE
3200 J	UG/KG	7 UNKNOWN PAHS
340 NJ	UG/KG	BENZO [B] TRIPHENYLENE
3900 J	UG/KG	10 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6785** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS10SS /
Media: SURFACE SOIL (0" - 12")
MD No: 1XW5 Inorg Contractor: SENTIN
D No: 1XW5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:05
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
380 U	UG/KG	Benzaldehyde
380 U	UG/KG	Phenol
380 U	UG/KG	bis(2-Chloroethyl) Ether
380 U	UG/KG	2-Chlorophenol
380 U	UG/KG	2-Methylphenol
380 U	UG/KG	bis(2-Chloroisopropyl) Ether
380 U	UG/KG	Acetophenone
380 U	UG/KG	(3-and/or 4-)Methylphenol
380 U	UG/KG	n-Nitrosodi-n-Propylamine
380 U	UG/KG	Hexachloroethane
380 U	UG/KG	Nitrobenzene
380 U	UG/KG	Isophorone
380 U	UG/KG	2-Nitrophenol
380 U	UG/KG	2,4-Dimethylphenol
380 U	UG/KG	bis(2-Chloroethoxy)Methane
380 U	UG/KG	2,4-Dichlorophenol
110 J	UG/KG	Naphthalene
380 U	UG/KG	4-Chloroaniline
380 U	UG/KG	Hexachlorobutadiene
380 U	UG/KG	Caprolactam
380 U	UG/KG	4-Chloro-3-Methylphenol
69 J	UG/KG	2-Methylnaphthalene
380 UJ	UG/KG	Hexachlorocyclopentadiene (HCCP)
380 U	UG/KG	2,4,6-Trichlorophenol
940 U	UG/KG	2,4,5-Trichlorophenol
380 U	UG/KG	1,1-Biphenyl
380 U	UG/KG	2-Chloronaphthalene
940 U	UG/KG	2-Nitroaniline
380 U	UG/KG	Dimethyl Phthalate
380 U	UG/KG	2,6-Dinitrotoluene
1100	UG/KG	Acenaphthylene
940 U	UG/KG	3-Nitroaniline
97 J	UG/KG	Acenaphthene
940 UJ	UG/KG	2,4-Dinitrophenol
940 U	UG/KG	4-Nitrophenol
120 J	UG/KG	Dibenzofuran
380 U	UG/KG	2,4-Dinitrotoluene
380 U	UG/KG	Diethyl Phthalate
380 U	UG/KG	Fluorene
380 U	UG/KG	4-Chlorophenyl Phenyl Ether
940 U	UG/KG	4-Nitroaniline
940 U	UG/KG	2-Methyl-4,6-Dinitrophenol
380 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
380 U	UG/KG	4-Bromophenyl Phenyl Ether
380 U	UG/KG	Hexachlorobenzene (HCB)
380 U	UG/KG	Atrazine
690 J	UG/KG	Pentachlorophenol
1400	UG/KG	Phenanthrene
1700	UG/KG	Anthracene
480	UG/KG	Carbazole
380 U	UG/KG	Di-n-Butylphthalate
4700	UG/KG	Fluoranthene
5000	UG/KG	Pyrene
380 U	UG/KG	Benzyl Butyl Phthalate
380 U	UG/KG	3,3'-Dichlorobenzidine
2800	UG/KG	Benzo(a)Anthracene
4300	UG/KG	Chrysene
380 U	UG/KG	bis(2-Ethylhexyl) Phthalate
380 U	UG/KG	Di-n-Octylphthalate
5200	UG/KG	Benzo(b)Fluoranthene
2300	UG/KG	Benzo(k)Fluoranthene
3100	UG/KG	Benzo-a-Pyrene
2300	UG/KG	Indeno (1,2,3-cd) Pyrene
750	UG/KG	Dibenzo(a,h)Anthracene
1300	UG/KG	Benzo(ghi)Perylene
12	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6785** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS10SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XW5
D No: 1XW5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:05
Ending:

RESULTS	UNITS	ANALYTE
720 J	UG/KG	UNKNOWN CARBOXYLIC ACID
660 NJ	UG/KG	9, 10-ANTHRACENEDIONE
940 NJ	UG/KG	CYCLOPENTA (DEF) PHENANTHRENONE
2200 NJ	UG/KG	11H-BENZO [A] FLUORENE
1700 NJ	UG/KG	PYRENE, 2-METHYL-
710 NJ	UG/KG	PYRENE, 1-METHYL-
1100 NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
550 NJ	UG/KG	3,4-DIHYDROCYCLOPENTA (CD) PYRENE
800 NJ	UG/KG	TRIPHENYLENE, 2-METHYL-
560 NJ	UG/KG	2,2'-BINAPHTHALENE
690 NJ	UG/KG	5,12-NAPHTHACENEDIONE
3300 NJ	UG/KG	BENZO [E] PYRENE
1000 NJ	UG/KG	PERYLENE
4100 J	UG/KG	6 UNKNOWN COMPOUNDS
9400 J	UG/KG	10 UNKNOWN PAHS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample .6786 FY 2003 Project: 03-0474

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS10SB / MD No: 1XW6 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
800 U	UG/KG	Benzaldehyde
800 U	UG/KG	Phenol
800 U	UG/KG	bis(2-Chloroethyl) Ether
800 U	UG/KG	2-Chlorophenol
800 U	UG/KG	2-Methylphenol
800 U	UG/KG	bis(2-Chloroisopropyl) Ether
800 U	UG/KG	Acetophenone
800 U	UG/KG	(3-and/or 4-)Methylphenol
800 U	UG/KG	n-Nitrosodi-n-Propylamine
800 U	UG/KG	Hexachloroethane
800 U	UG/KG	Nitrobenzene
800 U	UG/KG	Isophorone
800 U	UG/KG	2-Nitrophenol
800 U	UG/KG	2,4-Dimethylphenol
800 U	UG/KG	bis(2-Chloroethoxy)Methane
800 U	UG/KG	2,4-Dichlorophenol
390 J	UG/KG	Naphthalene
800 U	UG/KG	4-Chloroaniline
800 U	UG/KG	Hexachlorobutadiene
800 U	UG/KG	Caprolactam
800 U	UG/KG	4-Chloro-3-Methylphenol
200 J	UG/KG	2-Methylnaphthalene
800 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
800 U	UG/KG	2,4,6-Trichlorophenol
2000 U	UG/KG	2,4,5-Trichlorophenol
800 U	UG/KG	1,1-Biphenyl
800 U	UG/KG	2-Chloronaphthalene
2000 U	UG/KG	2-Nitroaniline
800 U	UG/KG	Dimethyl Phthalate
800 U	UG/KG	2,6-Dinitrotoluene
6100	UG/KG	Acenaphthylene
2000 U	UG/KG	3-Nitroaniline
210 J	UG/KG	Acenaphthene
2000 UJ	UG/KG	2,4-Dinitrophenol
2000 U	UG/KG	4-Nitrophenol
340 J	UG/KG	Dibenzofuran
800 U	UG/KG	2,4-Dinitrotoluene
800 U	UG/KG	Diethyl Phthalate
800 U	UG/KG	Fluorene
800 U	UG/KG	4-Chlorophenyl Phenyl Ether
2000 U	UG/KG	4-Nitroaniline
2000 U	UG/KG	2-Methyl-4,6-Dinitrophenol
800 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
800 U	UG/KG	4-Bromophenyl Phenyl Ether
800 U	UG/KG	Hexachlorobenzene (HCB)
800 U	UG/KG	Atrazine
680 J	UG/KG	Pentachlorophenol
2700	UG/KG	Phenanthrene
12000	UG/KG	Anthracene
1800	UG/KG	Carbazole
800 U	UG/KG	Di-n-Butylphthalate
28000	UG/KG	Fluoranthene
37000	UG/KG	Pyrene
800 U	UG/KG	Benzyl Butyl Phthalate
800 U	UG/KG	3,3'-Dichlorobenzidine
23000	UG/KG	Benzo(a)Anthracene
35000	UG/KG	Chrysene
800 U	UG/KG	bis(2-Ethylhexyl) Phthalate
800 U	UG/KG	Di-n-Octylphthalate
37000	UG/KG	Benzo(b)Fluoranthene
26000	UG/KG	Benzo(k)Fluoranthene
25000	UG/KG	Benzo-a-Pyrene
20000	UG/KG	Indeno (1,2,3-cd) Pyrene
3300	UG/KG	Dibenzo(a,h)Anthracene
5200	UG/KG	Benzo(ghi)Perylene
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6786** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS10SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XW6
D No: 1XW6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:

RESULTS	UNITS	ANALYTE
4700 NJ	UG/KG	CYCLOPENTA (DEF) PHENANTHRENONE
9900 NJ	UG/KG	11H-BENZO [B] FLUORENE
9200 NJ	UG/KG	PYRENE, 1-METHYL-
4600 NJ	UG/KG	7H-BENZ [DE] ANTHRACENEDIONE
4600 NJ	UG/KG	BENZO [B] NAPHTHO [2,3-D] THIOPHENE
2800 NJ	UG/KG	3,4-DIHYDROCYCLOPENTA (CD) PYRENE
6000 NJ	UG/KG	CHRYSENE, 5-METHYL-
2800 NJ	UG/KG	BENZ [A] ANTHRACENE, 8-METHYL-
3100 NJ	UG/KG	2,2'-BINAPHTHALENE
4600 NJ	UG/KG	5,12-NAPHTACENEDIONE
6200 NJ	UG/KG	BENZO [E] PYRENE
16000 NJ	UG/KG	PERYLENE
7400 NJ	UG/KG	1,2:7,8-DIBENZPHENANTHRENE
17000 J	UG/KG	4 UNKNOWN COMPOUNDS
65000 J	UG/KG	13 UNKNOWN PAHS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6787** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS02GW / MD No: 1XW7 Inorg Contractor: SENTIN
Media: GROUNDWATER D No: 1XW7 Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:55
Ending:

RESULTS	UNITS	ANALYTE
5.0 UJ	UG/L	Benzaldehyde
5.0 UJ	UG/L	Phenol
5.0 UJ	UG/L	bis(2-Chloroethyl) Ether
5.0 UJ	UG/L	2-Chlorophenol
5.0 UJ	UG/L	2-Methylphenol
5.0 UJ	UG/L	bis(2-Chloroisopropyl) Ether
5.0 UJ	UG/L	Acetophenone
5.0 UJ	UG/L	(3-and/or 4-)Methylphenol
5.0 UJ	UG/L	n-Nitrosodi-n-Propylamine
5.0 UJ	UG/L	Hexachloroethane
5.0 UJ	UG/L	Nitrobenzene
5.0 UJ	UG/L	Isophorone
5.0 UJ	UG/L	2-Nitrophenol
5.0 UJ	UG/L	2,4-Dimethylphenol
5.0 UJ	UG/L	bis(2-Chloroethoxy)Methane
5.0 UJ	UG/L	2,4-Dichlorophenol
5.0 UJ	UG/L	Naphthalene
5.0 UJ	UG/L	4-Chloroaniline
5.0 UJ	UG/L	Hexachlorobutadiene
5.0 UJ	UG/L	Caprolactam
5.0 UJ	UG/L	4-Chloro-3-Methylphenol
5.0 UJ	UG/L	2-Methylnaphthalene
5.0 UJ	UG/L	Hexachlorocyclopentadiene (HCCP)
5.0 UJ	UG/L	2,4,6-Trichlorophenol
20 UJ	UG/L	2,4,5-Trichlorophenol
5.0 UJ	UG/L	1,1-Biphenyl
5.0 UJ	UG/L	2-Chloronaphthalene
20 UJ	UG/L	2-Nitroaniline
5.0 UJ	UG/L	Dimethyl Phthalate
5.0 UJ	UG/L	2,6-Dinitrotoluene
5.0 UJ	UG/L	Acenaphthylene
20 UJ	UG/L	3-Nitroaniline
5.0 UJ	UG/L	Acenaphthene
20 UJ	UG/L	2,4-Dinitrophenol
20 UJ	UG/L	4-Nitrophenol
5.0 UJ	UG/L	Dibenzofuran
5.0 UJ	UG/L	2,4-Dinitrotoluene
5.0 UJ	UG/L	Diethyl Phthalate
5.0 UJ	UG/L	Fluorene
5.0 UJ	UG/L	4-Chlorophenyl Phenyl Ether
20 UJ	UG/L	4-Nitroaniline
20 UJ	UG/L	2-Methyl-4,6-Dinitrophenol
5.0 UJ	UG/L	n-Nitrosodiphenylamine/Diphenylamine
5.0 UJ	UG/L	1,2,4,5-Tetrachlorobenzene
5.0 UJ	UG/L	4-Bromophenyl Phenyl Ether
5.0 UJ	UG/L	Hexachlorobenzene (HCB)
5.0 UJ	UG/L	Atrazine
5.0 UJ	UG/L	Pentachlorophenol
5.0 UJ	UG/L	Phenanthrene
5.0 UJ	UG/L	Anthracene
NA	UG/L	Carbazole
5.0 UJ	UG/L	Di-n-Butylphthalate
5.0 UJ	UG/L	Fluoranthene
5.0 UJ	UG/L	Pyrene
5.0 UJ	UG/L	Benzyl Butyl Phthalate
5.0 UJ	UG/L	3,3'-Dichlorobenzidine
5.0 UJ	UG/L	Benzo(a)Anthracene
5.0 UJ	UG/L	Chrysene
5.0 UJ	UG/L	bis(2-Ethylhexyl) Phthalate
5.0 UJ	UG/L	Di-n-Octylphthalate
5.0 UJ	UG/L	Benzo(b)Fluoranthene
5.0 UJ	UG/L	Benzo(k)Fluoranthene
5.0 UJ	UG/L	Benzo-a-Pyrene
5.0 UJ	UG/L	Indeno (1,2,3-cd) Pyrene
5.0 UJ	UG/L	Dibenzo(a,h)Anthracene
5.0 UJ	UG/L	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
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L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6787** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS02GW /
Media: GROUNDWATER

Case No: 31635
MD No: 1XW7
D No: 1XW7

Inorg Contractor: SENTIN
Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:55
Ending:

RESULTS	UNITS	ANALYTE
2.2 NJ	UG/L	LIMONENE

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6788** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS11SS / — MD No: 1XW8 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XW8 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
350 U	UG/KG	Benzaldehyde
350 U	UG/KG	Phenol
350 U	UG/KG	bis(2-Chloroethyl) Ether
350 U	UG/KG	2-Chlorophenol
350 U	UG/KG	2-Methylphenol
350 U	UG/KG	bis(2-Chloroisopropyl) Ether
350 U	UG/KG	Acetophenone
350 U	UG/KG	(3-and/or 4-)Methylphenol
350 U	UG/KG	n-Nitrosodi-n-Propylamine
350 U	UG/KG	Hexachloroethane
350 U	UG/KG	Nitrobenzene
350 U	UG/KG	Isophorone
350 U	UG/KG	2-Nitrophenol
350 U	UG/KG	2,4-Dimethylphenol
350 U	UG/KG	bis(2-Chloroethoxy)Methane
350 U	UG/KG	2,4-Dichlorophenol
120 J	UG/KG	Naphthalene
350 U	UG/KG	4-Chloroaniline
350 U	UG/KG	Hexachlorobutadiene
350 U	UG/KG	Caprolactam
350 U	UG/KG	4-Chloro-3-Methylphenol
70 J	UG/KG	2-Methylnaphthalene
350 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
350 U	UG/KG	2,4,6-Trichlorophenol
890 U	UG/KG	2,4,5-Trichlorophenol
350 U	UG/KG	1,1-Biphenyl
350 U	UG/KG	2-Chloronaphthalene
890 U	UG/KG	2-Nitroaniline
350 U	UG/KG	Dimethyl Phthalate
350 U	UG/KG	2,6-Dinitrotoluene
330 J	UG/KG	Acenaphthylene
890 U	UG/KG	3-Nitroaniline
350 U	UG/KG	Acenaphthene
890 UJ	UG/KG	2,4-Dinitrophenol
890 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
140 J	UG/KG	Dibenzofuran
350 U	UG/KG	2,4-Dinitrotoluene
350 U	UG/KG	Diethyl Phthalate
350 U	UG/KG	Fluorene
350 U	UG/KG	4-Chlorophenyl Phenyl Ether
890 U	UG/KG	4-Nitroaniline
890 U	UG/KG	2-Methyl-4,6-Dinitrophenol
350 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
350 U	UG/KG	4-Bromophenyl Phenyl Ether
350 U	UG/KG	Hexachlorobenzene (HCB)
350 U	UG/KG	Atrazine
640 J	UG/KG	Pentachlorophenol
540	UG/KG	Phenanthrene
830	UG/KG	Anthracene
210 J	UG/KG	Carbazole
350 U	UG/KG	Di-n-Butylphthalate
1900	UG/KG	Fluoranthene
1700	UG/KG	Pyrene
350 U	UG/KG	Benzyl Butyl Phthalate
350 U	UG/KG	3,3'-Dichlorobenzidine
1000	UG/KG	Benzo(a)Anthracene
1500	UG/KG	Chrysene
350 U	UG/KG	bis(2-Ethylhexyl) Phthalate
350 U	UG/KG	Di-n-Octylphthalate
2500	UG/KG	Benzo(b)Fluoranthene
1700	UG/KG	Benzo(k)Fluoranthene
800	UG/KG	Benzo-a-Pyrene
940	UG/KG	Indeno (1,2,3-cd) Pyrene
310 J	UG/KG	Dibenzo(a,h)Anthracene
460	UG/KG	Benzo(ghi)Perylene
7	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6788** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS11SS / — MD No: 1XW8 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XW8 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:00
Ending:

RESULTS	UNITS	ANALYTE
670 NJ	UG/KG	HEXADECANOIC ACID
260 NJ	UG/KG	9, 10-ANTHRACENEDIONE
320 NJ	UG/KG	CYCLOPENTA (DEF) PHENANTHRENONE
390 NJ	UG/KG	PYRENE, 1-METHYL-
430 NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
370 NJ	UG/KG	TRIPHENYLENE, 2-METHYL-
330 NJ	UG/KG	BENZ (A) ANTHRACENE-7,12-DIONE
1700 NJ	UG/KG	BENZO [E] PYRENE
480 J	UG/KG	1,2:7,8-DIBENZPHENANTHRRENE
380 NJ	UG/KG	BENZO [B] TRIPHENYLENE
2100 J	UG/KG	6 UNKNOWN PAHS
3600 J	UG/KG	12 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
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NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6789** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS11SB / MD No: 1XW9 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:10
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
400 U	UG/KG	Benzaldehyde
400 U	UG/KG	Phenol
400 U	UG/KG	bis(2-Chloroethyl) Ether
400 U	UG/KG	2-Chlorophenol
400 U	UG/KG	2-Methylphenol
400 U	UG/KG	bis(2-Chloroisopropyl) Ether
400 U	UG/KG	Acetophenone
400 U	UG/KG	(3-and/or 4-)Methylphenol
400 U	UG/KG	n-Nitrosodi-n-Propylamine
400 U	UG/KG	Hexachloroethane
400 U	UG/KG	Nitrobenzene
400 U	UG/KG	Isophorone
400 U	UG/KG	2-Nitrophenol
400 U	UG/KG	2,4-Dimethylphenol
400 U	UG/KG	bis(2-Chloroethoxy)Methane
400 U	UG/KG	2,4-Dichlorophenol
400 U	UG/KG	Naphthalene
400 U	UG/KG	4-Chloroaniline
400 U	UG/KG	Hexachlorobutadiene
400 U	UG/KG	Caprolactam
400 U	UG/KG	4-Chloro-3-Methylphenol
400 U	UG/KG	2-Methylnaphthalene
400 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
400 U	UG/KG	2,4,6-Trichlorophenol
1000 U	UG/KG	2,4,5-Trichlorophenol
400 U	UG/KG	1,1-Biphenyl
400 U	UG/KG	2-Chloronaphthalene
1000 U	UG/KG	2-Nitroaniline
400 U	UG/KG	Dimethyl Phthalate
400 U	UG/KG	2,6-Dinitrotoluene
400 U	UG/KG	Acenaphthylene
1000 U	UG/KG	3-Nitroaniline
400 U	UG/KG	Acenaphthene
1000 UJ	UG/KG	2,4-Dinitrophenol
1000 U	UG/KG	4-Nitrophenol
400 U	UG/KG	Dibenzofuran
400 U	UG/KG	2,4-Dinitrotoluene
400 U	UG/KG	Diethyl Phthalate
400 U	UG/KG	Fluorene
400 U	UG/KG	4-Chlorophenyl Phenyl Ether
1000 U	UG/KG	4-Nitroaniline
1000 U	UG/KG	2-Methyl-4,6-Dinitrophenol
400 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
400 U	UG/KG	4-Bromophenyl Phenyl Ether
400 U	UG/KG	Hexachlorobenzene (HCB)
400 U	UG/KG	Atrazine
1000 U	UG/KG	Pentachlorophenol
400 U	UG/KG	Phenanthrene
49 J	UG/KG	Anthracene
400 U	UG/KG	Carbazole
400 U	UG/KG	Di-n-Butylphthalate
400 U	UG/KG	Fluoranthene
400 U	UG/KG	Pyrene
400 U	UG/KG	Benzyl Butyl Phthalate
400 U	UG/KG	3,3'-Dichlorobenzidine
400 U	UG/KG	Benzo(a)Anthracene
400 U	UG/KG	Chrysene
400 U	UG/KG	bis(2-Ethylhexyl) Phthalate
400 U	UG/KG	Di-n-Octylphthalate
400 U	UG/KG	Benzo(b)Fluoranthene
46 J	UG/KG	Benzo(k)Fluoranthene
400 U	UG/KG	Benzo-a-Pyrene
400 U	UG/KG	Indeno (1,2,3-cd) Pyrene
400 U	UG/KG	Dibenzo(a,h)Anthracene
400 U	UG/KG	Benzo(ghi)Perylene
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
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L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6789** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS11SB / MD No: 1XW9 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:10
Ending:

RESULTS	UNITS	ANALYTE
86 J	UG/KG	UNKNOWN CARBOXYLIC ACID
530 J	UG/KG	3 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
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EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6790** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS09SS / MD No: 1XX0 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
450 U	UG/KG	Benzaldehyde
450 U	UG/KG	Phenol
450 U	UG/KG	bis(2-Chloroethyl) Ether
450 U	UG/KG	2-Chlorophenol
450 U	UG/KG	2-Methylphenol
450 U	UG/KG	bis(2-Chloroisopropyl) Ether
450 U	UG/KG	Acetophenone
450 U	UG/KG	(3-and/or 4-)Methylphenol
450 U	UG/KG	n-Nitrosodi-n-Propylamine
450 U	UG/KG	Hexachloroethane
450 U	UG/KG	Nitrobenzene
450 U	UG/KG	Isophorone
450 U	UG/KG	2-Nitrophenol
450 U	UG/KG	2,4-Dimethylphenol
450 U	UG/KG	bis(2-Chloroethoxy)Methane
450 U	UG/KG	2,4-Dichlorophenol
450 U	UG/KG	Naphthalene
450 U	UG/KG	4-Chloroaniline
450 U	UG/KG	Hexachlorobutadiene
450 U	UG/KG	Caprolactam
450 U	UG/KG	4-Chloro-3-Methylphenol
450 U	UG/KG	2-Methylnaphthalene
450 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
450 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
450 U	UG/KG	1,1-Biphenyl
450 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
450 U	UG/KG	Dimethyl Phthalate
450 U	UG/KG	2,6-Dinitrotoluene
450 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
450 U	UG/KG	Acenaphthene
1100 UJ	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
450 U	UG/KG	Dibenzofuran
450 U	UG/KG	2,4-Dinitrotoluene
450 U	UG/KG	Diethyl Phthalate
450 U	UG/KG	Fluorene
450 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
450 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
450 U	UG/KG	4-Bromophenyl Phenyl Ether
450 U	UG/KG	Hexachlorobenzene (HCB)
450 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
450 U	UG/KG	Phenanthrene
450 U	UG/KG	Anthracene
450 U	UG/KG	Carbazole
450 U	UG/KG	Di-n-Butylphthalate
450 U	UG/KG	Fluoranthene
450 U	UG/KG	Pyrene
450 U	UG/KG	Benzyl Butyl Phthalate
450 U	UG/KG	3,3'-Dichlorobenzidine
450 U	UG/KG	Benzo(a)Anthracene
450 U	UG/KG	Chrysene
450 U	UG/KG	bis(2-Ethylhexyl) Phthalate
450 U	UG/KG	Di-n-Octylphthalate
450 U	UG/KG	Benzo(b)Fluoranthene
450 U	UG/KG	Benzo(k)Fluoranthene
450 U	UG/KG	Benzo-a-Pyrene
450 U	UG/KG	Indeno (1,2,3-cd) Pyrene
450 U	UG/KG	Dibenzo(a,h)Anthracene
450 U	UG/KG	Benzo(ghi)Perylene
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
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L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6790** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS09SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XX0
D No: 1XX0

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:15
Ending:

RESULTS	UNITS	ANALYTE
97 NJ	UG/KG	PENTADECANOIC ACID
140 NJ	UG/KG	1-TETRADECENE
230 NJ	UG/KG	1-OCTADECENE
230 NJ	UG/KG	1-HEPTADECENE
1900 J	UG/KG	10 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6791** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS09SB /
Media: SUBSURFACE SOIL (> 12") D No: 1XX1

MD No: 1XX1 Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:25
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
420 U	UG/KG	Benzaldehyde
420 U	UG/KG	Phenol
420 U	UG/KG	bis(2-Chloroethyl) Ether
420 U	UG/KG	2-Chlorophenol
420 U	UG/KG	2-Methylphenol
420 U	UG/KG	bis(2-Chloroisopropyl) Ether
420 U	UG/KG	Acetophenone
420 U	UG/KG	(3-and/or 4-)Methylphenol
420 U	UG/KG	n-Nitrosodi-n-Propylamine
420 U	UG/KG	Hexachloroethane
420 U	UG/KG	Nitrobenzene
420 U	UG/KG	Isophorone
420 U	UG/KG	2-Nitrophenol
420 U	UG/KG	2,4-Dimethylphenol
420 U	UG/KG	bis(2-Chloroethoxy)Methane
420 U	UG/KG	2,4-Dichlorophenol
420 U	UG/KG	Naphthalene
420 U	UG/KG	4-Chloroaniline
420 U	UG/KG	Hexachlorobutadiene
420 U	UG/KG	Caprolactam
420 U	UG/KG	4-Chloro-3-Methylphenol
420 U	UG/KG	2-Methylnaphthalene
420 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
420 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
420 U	UG/KG	1,1-Biphenyl
420 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
420 U	UG/KG	Dimethyl Phthalate
420 U	UG/KG	2,6-Dinitrotoluene
420 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
420 U	UG/KG	Acenaphthene
1100 UJ	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol
420 U	UG/KG	Dibenzofuran
420 U	UG/KG	2,4-Dinitrotoluene
420 U	UG/KG	Diethyl Phthalate
420 U	UG/KG	Fluorene
420 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
420 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
420 U	UG/KG	4-Bromophenyl Phenyl Ether
420 U	UG/KG	Hexachlorobenzene (HCB)
420 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
420 U	UG/KG	Phenanthrene
420 U	UG/KG	Anthracene
420 U	UG/KG	Carbazole
420 U	UG/KG	Di-n-Butylphthalate
420 U	UG/KG	Fluoranthene
420 U	UG/KG	Pyrene
420 U	UG/KG	Benzyl Butyl Phthalate
420 U	UG/KG	3,3'-Dichlorobenzidine
420 U	UG/KG	Benzo(a)Anthracene
420 U	UG/KG	Chrysene
420 U	UG/KG	bis(2-Ethylhexyl) Phthalate
420 U	UG/KG	Di-n-Octylphthalate
420 U	UG/KG	Benzo(b)Fluoranthene
420 U	UG/KG	Benzo(k)Fluoranthene
420 U	UG/KG	Benzo-a-Pyrene
420 U	UG/KG	Indeno (1,2,3-cd) Pyrene
420 U	UG/KG	Dibenzo(a,h)Anthracene
420 U	UG/KG	Benzo(ghi)Perylene
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
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L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6791** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS09SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XX1
D No: 1XX1

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:25
Ending:

RESULTS	UNITS	ANALYTE
370 J	UG/KG	3 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6792** FY **2003** Project: **03-0474**

Extractables Scan

Facility: *Gulf States Creosoting* *Flowood, MS*
Program: SF
Id/Station: GS06SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XX2
D No: 1XX2

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
330 U	UG/KG	Benzaldehyde
330 U	UG/KG	Phenol
330 U	UG/KG	bis(2-Chloroethyl) Ether
330 U	UG/KG	2-Chlorophenol
330 U	UG/KG	2-Methylphenol
330 U	UG/KG	bis(2-Chloroisopropyl) Ether
330 U	UG/KG	Acetophenone
330 U	UG/KG	(3-and/or 4-)Methylphenol
330 U	UG/KG	n-Nitrosodi-n-Propylamine
330 U	UG/KG	Hexachloroethane
330 U	UG/KG	Nitrobenzene
330 U	UG/KG	Isophorone
330 U	UG/KG	2-Nitrophenol
330 U	UG/KG	2,4-Dimethylphenol
330 U	UG/KG	bis(2-Chloroethoxy)Methane
330 U	UG/KG	2,4-Dichlorophenol
330 U	UG/KG	Naphthalene
330 U	UG/KG	4-Chloroaniline
330 U	UG/KG	Hexachlorobutadiene
330 U	UG/KG	Caprolactam
330 U	UG/KG	4-Chloro-3-Methylphenol
330 U	UG/KG	2-Methylnaphthalene
330 U	UG/KG	*Hexachlorocyclopentadiene (HCCP)*
330 U	UG/KG	2,4,6-Trichlorophenol
830 U	UG/KG	2,4,5-Trichlorophenol
330 U	UG/KG	1,1-Biphenyl
330 U	UG/KG	2-Chloronaphthalene
830 U	UG/KG	2-Nitroaniline
330 U	UG/KG	Dimethyl Phthalate
330 U	UG/KG	2,6-Dinitrotoluene
330 U	UG/KG	Acenaphthylene
830 U	UG/KG	3-Nitroaniline
330 U	UG/KG	Acenaphthene
830 UJ	UG/KG	2,4-Dinitrophenol
830 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
330 U	UG/KG	Dibenzofuran
330 U	UG/KG	2,4-Dinitrotoluene
330 U	UG/KG	Diethyl Phthalate
330 U	UG/KG	Fluorene
330 U	UG/KG	4-Chlorophenyl Phenyl Ether
830 U	UG/KG	4-Nitroaniline
830 U	UG/KG	2-Methyl-4,6-Dinitrophenol
330 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	*1,2,4,5-Tetrachlorobenzene*
330 U	UG/KG	4-Bromophenyl Phenyl Ether
330 U	UG/KG	Hexachlorobenzene (HCB)
330 U	UG/KG	Atrazine
25 U	UG/KG	Pentachlorophenol
330 U	UG/KG	Phenanthrene
330 U	UG/KG	Anthracene
330 U	UG/KG	Carbazole
330 U	UG/KG	Di-n-Butylphthalate
330 U	UG/KG	Fluoranthene
330 U	UG/KG	Pyrene
330 U	UG/KG	Benzyl Butyl Phthalate
330 U	UG/KG	3,3'-Dichlorobenzidine
330 U	UG/KG	Benzo(a)Anthracene
330 U	UG/KG	*Chrysene*
330 U	UG/KG	bis(2-Ethylhexyl) Phthalate
330 U	UG/KG	Di-n-Octylphthalate
330 U	UG/KG	Benzo(b)Fluoranthene
330 U	UG/KG	Benzo(k)Fluoranthene
330 U	UG/KG	Benzo-a-Pyrene
330 U	UG/KG	Indeno (1,2,3-cd) Pyrene
330 U	UG/KG	Dibenzo(a,h)Anthracene
330 U	UG/KG	Benzo(ghi)Perylene
20	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6792** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: *GS06SD /*
Media: SEDIMENT

Case No: 31635
MD No: 1XX2
D No: 1XX2

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:

RESULTS	UNITS	ANALYTE
61 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6792** FY **2003** Project: **03-0474**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS06SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XX2
D No: 1XX2

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.4 J	UG/KG	2-Methylnaphthalene
0.5 J	UG/KG	Naphthalene
0.8 U	UG/KG	Acenaphthylene
0.8 U	UG/KG	Acenaphthene
0.3 J	UG/KG	Fluorene
4	UG/KG	Phenanthrene
2 U	UG/KG	Anthracene
12 U	UG/KG	Fluoranthene
10 U	UG/KG	Pyrene
5 U	UG/KG	Benzo(a)Anthracene
7 U	UG/KG	Chrysene
NA	UG/KG	Benzo(b)Fluoranthene
NA	UG/KG	Benzo(k)Fluoranthene
4 U	UG/KG	Benzo-a-Pyrene
NA	UG/KG	Indeno (1,2,3-cd) Pyrene
1	UG/KG	Dibenzo(a,h)Anthracene
NA	UG/KG	Benzo(ghi)Perylene
13 U	UG/KG	Pentachlorophenol

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6793** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS08SD / MD No: 1XX3 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XX3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
330 U	UG/KG	Benzaldehyde
330 U	UG/KG	Phenol
330 U	UG/KG	bis(2-Chloroethyl) Ether
330 U	UG/KG	2-Chlorophenol
330 U	UG/KG	2-Methylphenol
330 U	UG/KG	bis(2-Chloroisopropyl) Ether
330 U	UG/KG	Acetophenone
330 U	UG/KG	(3-and/or 4-)Methylphenol
330 U	UG/KG	n-Nitrosodi-n-Propylamine
330 U	UG/KG	Hexachloroethane
330 U	UG/KG	Nitrobenzene
330 U	UG/KG	Isophorone
330 U	UG/KG	2-Nitrophenol
330 U	UG/KG	2,4-Dimethylphenol
330 U	UG/KG	bis(2-Chloroethoxy)Methane
330 U	UG/KG	2,4-Dichlorophenol
330 U	UG/KG	Naphthalene
330 U	UG/KG	4-Chloroaniline
330 U	UG/KG	Hexachlorobutadiene
330 U	UG/KG	Caprolactam
330 U	UG/KG	4-Chloro-3-Methylphenol
330 U	UG/KG	2-Methylnaphthalene
330 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
330 U	UG/KG	2,4,6-Trichlorophenol
830 U	UG/KG	2,4,5-Trichlorophenol
330 U	UG/KG	1,1-Biphenyl
330 U	UG/KG	2-Chloronaphthalene
830 U	UG/KG	2-Nitroaniline
330 U	UG/KG	Dimethyl Phthalate
330 U	UG/KG	2,6-Dinitrotoluene
330 U	UG/KG	Acenaphthylene
830 U	UG/KG	3-Nitroaniline
330 U	UG/KG	Acenaphthene
830 UJ	UG/KG	2,4-Dinitrophenol
830 U	UG/KG	4-Nitrophenol
330 U	UG/KG	Dibenzofuran
330 U	UG/KG	2,4-Dinitrotoluene
330 U	UG/KG	Diethyl Phthalate
330 U	UG/KG	Fluorene
330 U	UG/KG	4-Chlorophenyl Phenyl Ether
830 U	UG/KG	4-Nitroaniline
830 U	UG/KG	2-Methyl-4,6-Dinitrophenol
330 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
330 U	UG/KG	4-Bromophenyl Phenyl Ether
330 U	UG/KG	Hexachlorobenzene (HCB)
330 U	UG/KG	Atrazine
830 U	UG/KG	Pentachlorophenol
330 U	UG/KG	Phenanthrene
330 U	UG/KG	Anthracene
330 U	UG/KG	Carbazole
330 U	UG/KG	Di-n-Butylphthalate
330 U	UG/KG	Fluoranthene
330 U	UG/KG	Pyrene
330 U	UG/KG	Benzyl Butyl Phthalate
330 U	UG/KG	3,3'-Dichlorobenzidine
330 U	UG/KG	Benzo(a)Anthracene
330 U	UG/KG	Chrysene
330 U	UG/KG	bis(2-Ethylhexyl) Phthalate
330 U	UG/KG	Di-n-Octylphthalate
330 U	UG/KG	Benzo(b)Fluoranthene
330 U	UG/KG	Benzo(k)Fluoranthene
330 U	UG/KG	Benzo-a-Pyrene
330 U	UG/KG	Indeno (1,2,3-cd) Pyrene
330 U	UG/KG	Dibenzo(a,h)Anthracene
330 U	UG/KG	Benzo(ghi)Perylene
19	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6793** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS08SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XX3
D No: 1XX3

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:50
Ending:

RESULTS	UNITS	ANALYTE
170 J	UG/KG	3 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6793** FY **2003** Project: **03-0474**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS08SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XX3
D No: 1XX3

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.8 U	UG/KG	2-Methylnaphthalene
0.4 J	UG/KG	Naphthalene
0.8 U	UG/KG	Acenaphthylene
0.8 U	UG/KG	Acenaphthene
0.8 U	UG/KG	Fluorene
0.0 U	UG/KG	Phenanthrene
0.8 U	UG/KG	Anthracene
2 U	UG/KG	Fluoranthene
2 U	UG/KG	Pyrene
1 U	UG/KG	Benzo(a)Anthracene
2 U	UG/KG	Chrysene
NA	UG/KG	Benzo(b)Fluoranthene
NA	UG/KG	Benzo(k)Fluoranthene
0.8 U	UG/KG	Benzo-a-Pyrene
NA	UG/KG	Indeno (1,2,3-cd) Pyrene
0.8 U	UG/KG	Dibenzo(a,h)Anthracene
NA	UG/KG	Benzo(ghi)Perylene
13 U	UG/KG	Pentachlorophenol

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6794** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS22SS / MD No: 1XX4 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX4 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:42
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
380 U	UG/KG	Benzaldehyde
380 U	UG/KG	Phenol
380 U	UG/KG	bis(2-Chloroethyl) Ether
380 U	UG/KG	2-Chlorophenol
380 U	UG/KG	2-Methylphenol
380 U	UG/KG	bis(2-Chloroisopropyl) Ether
380 U	UG/KG	Acetophenone
380 U	UG/KG	(3-and/or 4-)Methylphenol
380 U	UG/KG	n-Nitrosodi-n-Propylamine
380 U	UG/KG	Hexachloroethane
380 U	UG/KG	Nitrobenzene
380 U	UG/KG	Isophorone
380 U	UG/KG	2-Nitrophenol
380 U	UG/KG	2,4-Dimethylphenol
380 U	UG/KG	bis(2-Chloroethoxy)Methane
380 U	UG/KG	2,4-Dichlorophenol
380 U	UG/KG	Naphthalene
380 U	UG/KG	4-Chloroaniline
380 U	UG/KG	Hexachlorobutadiene
380 U	UG/KG	Caprolactam
380 U	UG/KG	4-Chloro-3-Methylphenol
380 U	UG/KG	2-Methylnaphthalene
380 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
380 U	UG/KG	2,4,6-Trichlorophenol
950 U	UG/KG	2,4,5-Trichlorophenol
380 U	UG/KG	1,1-Biphenyl
380 U	UG/KG	2-Chloronaphthalene
950 U	UG/KG	2-Nitroaniline
380 U	UG/KG	Dimethyl Phthalate
380 U	UG/KG	2,6-Dinitrotoluene
380 U	UG/KG	Acenaphthylene
950 U	UG/KG	3-Nitroaniline
380 U	UG/KG	Acenaphthene
950 UJ	UG/KG	2,4-Dinitrophenol
950 U	UG/KG	4-Nitrophenol
380 U	UG/KG	Dibenzofuran
380 U	UG/KG	2,4-Dinitrotoluene
380 U	UG/KG	Diethyl Phthalate
380 U	UG/KG	Fluorene
380 U	UG/KG	4-Chlorophenyl Phenyl Ether
950 U	UG/KG	4-Nitroaniline
950 U	UG/KG	2-Methyl-4,6-Dinitrophenol
380 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
380 U	UG/KG	4-Bromophenyl Phenyl Ether
380 U	UG/KG	Hexachlorobenzene (HCB)
380 U	UG/KG	Atrazine
950 U	UG/KG	Pentachlorophenol
380 U	UG/KG	Phenanthrene
380 U	UG/KG	Anthracene
380 U	UG/KG	Carbazole
380 U	UG/KG	Di-n-Butylphthalate
380 U	UG/KG	Fluoranthene
380 U	UG/KG	Pyrene
380 U	UG/KG	Benzyl Butyl Phthalate
380 U	UG/KG	3,3'-Dichlorobenzidine
380 U	UG/KG	Benzo(a)Anthracene
380 U	UG/KG	Chrysene
380 U	UG/KG	bis(2-Ethylhexyl) Phthalate
380 U	UG/KG	Di-n-Octylphthalate
380 U	UG/KG	Benzo(b)Fluoranthene
380 U	UG/KG	Benzo(k)Fluoranthene
380 U	UG/KG	Benzo-a-Pyrene
380 U	UG/KG	Indeno (1,2,3-cd) Pyrene
380 U	UG/KG	Dibenzo(a,h)Anthracene
380 U	UG/KG	Benzo(ghi)Perylene
13	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6794** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS22SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XX4
D No: 1XX4

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:42
Ending:

RESULTS	UNITS	ANALYTE
110 NJ	UG/KG	HEXADECANOIC ACID
1300 J	UG/KG	4 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6795** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting - Flowood, MS
Program: SF
Id/Station: GS06SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XX5
D No: 1XX5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
450 U	UG/KG	Benzaldehyde
450 U	UG/KG	Phenol
450 U	UG/KG	bis(2-Chloroethyl) Ether
450 U	UG/KG	2-Chlorophenol
450 U	UG/KG	2-Methylphenol
450 U	UG/KG	bis(2-Chloroisopropyl) Ether
450 U	UG/KG	Acetophenone
450 U	UG/KG	(3-and/or 4-)Methylphenol
450 U	UG/KG	n-Nitrosodi-n-Propylamine
450 U	UG/KG	Hexachloroethane
450 U	UG/KG	Nitrobenzene
450 U	UG/KG	Isophorone
450 U	UG/KG	2-Nitrophenol
450 U	UG/KG	2,4-Dimethylphenol
450 U	UG/KG	bis(2-Chloroethoxy)Methane
450 U	UG/KG	2,4-Dichlorophenol
450 U	UG/KG	Naphthalene
450 U	UG/KG	4-Chloroaniline
450 U	UG/KG	Hexachlorobutadiene
450 U	UG/KG	Caprolactam
450 U	UG/KG	4-Chloro-3-Methylphenol
450 U	UG/KG	2-Methylnaphthalene
450 UJ	UG/KG	Hexachlorocyclopentadiene (HCCP)
450 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
450 U	UG/KG	1,1-Biphenyl
450 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
450 U	UG/KG	Dimethyl Phthalate
450 U	UG/KG	2,6-Dinitrotoluene
450 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
450 U	UG/KG	Acenaphthene
1100 UJ	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
450 U	UG/KG	Dibenzofuran
450 U	UG/KG	2,4-Dinitrotoluene
450 U	UG/KG	Diethyl Phthalate
450 U	UG/KG	Fluorene
450 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
450 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
450 U	UG/KG	4-Bromophenyl Phenyl Ether
450 U	UG/KG	Hexachlorobenzene (HCB)
450 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
450 U	UG/KG	Phenanthrene
450 U	UG/KG	Anthracene
450 U	UG/KG	Carbazole
450 U	UG/KG	Di-n-Butylphthalate
450 U	UG/KG	Fluoranthene
450 U	UG/KG	Pyrene
450 U	UG/KG	Benzyl Butyl Phthalate
450 U	UG/KG	3,3'-Dichlorobenzidine
450 U	UG/KG	Benzo(a)Anthracene
450 U	UG/KG	Chrysene
450 U	UG/KG	bis(2-Ethylhexyl) Phthalate
450 U	UG/KG	Di-n-Octylphthalate
450 U	UG/KG	Benzo(b)Fluoranthene
450 U	UG/KG	Benzo(k)Fluoranthene
450 U	UG/KG	Benzo-a-Pyrene
450 U	UG/KG	Indeno (1,2,3-cd) Pyrene
450 U	UG/KG	Dibenzo(a,h)Anthracene
450 U	UG/KG	Benzo(ghi)Perylene
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6795** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS06SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XX5
D No: 1XX5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:40
Ending:

RESULTS	UNITS	ANALYTE
100 NJ	UG/KG	HEXADECANOIC ACID
170 NJ	UG/KG	9-OCTADECENE, (E) -
120 NJ	UG/KG	1-HEPTADECENE
860 NJ	UG/KG	D:C-FRIEDOOLEANAN-3-ONE
460 NJ	UG/KG	STIGMAST-4-EN-3-ONE
2800 J	UG/KG	14 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6796** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS06SB / MD No: 1XX6 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XX6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
450 U	UG/KG	Benzaldehyde
450 U	UG/KG	Phenol
450 U	UG/KG	bis(2-Chloroethyl) Ether
450 U	UG/KG	2-Chlorophenol
450 U	UG/KG	2-Methylphenol
450 U	UG/KG	bis(2-Chloroisopropyl) Ether
450 U	UG/KG	Acetophenone
450 U	UG/KG	(3-and/or 4-)Methylphenol
450 U	UG/KG	n-Nitrosodi-n-Propylamine
450 U	UG/KG	Hexachloroethane
450 U	UG/KG	Nitrobenzene
450 U	UG/KG	Isophorone
450 U	UG/KG	2-Nitrophenol
450 U	UG/KG	2,4-Dimethylphenol
450 U	UG/KG	bis(2-Chloroethoxy)Methane
450 U	UG/KG	2,4-Dichlorophenol
450 U	UG/KG	Naphthalene
450 U	UG/KG	4-Chloroaniline
450 U	UG/KG	Hexachlorobutadiene
450 U	UG/KG	Caprolactam
450 U	UG/KG	4-Chloro-3-Methylphenol
450 U	UG/KG	2-Methylnaphthalene
450 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
450 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
450 U	UG/KG	1,1-Biphenyl
450 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
450 U	UG/KG	Dimethyl Phthalate
450 U	UG/KG	2,6-Dinitrotoluene
450 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
450 U	UG/KG	Acenaphthene
1100 UJ	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol
450 U	UG/KG	Dibenzofuran
450 U	UG/KG	2,4-Dinitrotoluene
450 U	UG/KG	Diethyl Phthalate
450 U	UG/KG	Fluorene
450 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 UJ	UG/KG	2-Methyl-4,6-Dinitrophenol
450 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
450 U	UG/KG	4-Bromophenyl Phenyl Ether
450 U	UG/KG	Hexachlorobenzene (HCB)
450 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
450 U	UG/KG	Phenanthrene
450 U	UG/KG	Anthracene
450 U	UG/KG	Carbazole
450 U	UG/KG	Di-n-Butylphthalate
450 U	UG/KG	Fluoranthene
450 U	UG/KG	Pyrene
450 U	UG/KG	Benzyl Butyl Phthalate
450 U	UG/KG	3,3'-Dichlorobenzidine
450 U	UG/KG	Benzo(a)Anthracene
450 U	UG/KG	Chrysene
450 U	UG/KG	bis(2-Ethylhexyl) Phthalate
450 U	UG/KG	Di-n-Octylphthalate
450 U	UG/KG	Benzo(b)Fluoranthene
450 U	UG/KG	Benzo(k)Fluoranthene
450 U	UG/KG	Benzo-a-Pyrene
450 U	UG/KG	Indeno (1,2,3-cd) Pyrene
450 U	UG/KG	Dibenzo(a,h)Anthracene
450 U	UG/KG	Benzo(ghi)Perylene
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6797** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS24SS / MD No: 1XX7 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX7 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
600 U	UG/KG	Benzaldehyde
600 U	UG/KG	Phenol
600 U	UG/KG	bis(2-Chloroethyl) Ether
600 U	UG/KG	2-Chlorophenol
600 U	UG/KG	2-Methylphenol
600 U	UG/KG	bis(2-Chloroisopropyl) Ether
600 U	UG/KG	Acetophenone
600 U	UG/KG	(3-and/or 4-)Methylphenol
600 U	UG/KG	n-Nitrosodi-n-Propylamine
600 U	UG/KG	Hexachloroethane
600 U	UG/KG	Nitrobenzene
600 U	UG/KG	Isophorone
600 U	UG/KG	2-Nitrophenol
600 U	UG/KG	2,4-Dimethylphenol
600 U	UG/KG	bis(2-Chloroethoxy)Methane
600 U	UG/KG	2,4-Dichlorophenol
600 U	UG/KG	Naphthalene
600 U	UG/KG	4-Chloroaniline
600 U	UG/KG	Hexachlorobutadiene
600 U	UG/KG	Caprolactam
600 U	UG/KG	4-Chloro-3-Methylphenol
600 U	UG/KG	2-Methylnaphthalene
600 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
600 U	UG/KG	2,4,6-Trichlorophenol
1500 U	UG/KG	2,4,5-Trichlorophenol
600 U	UG/KG	1,1-Biphenyl
600 U	UG/KG	2-Chloronaphthalene
1500 U	UG/KG	2-Nitroaniline
600 U	UG/KG	Dimethyl Phthalate
600 U	UG/KG	2,6-Dinitrotoluene
150 J	UG/KG	Acenaphthylene
1500 U	UG/KG	3-Nitroaniline
600 U	UG/KG	Acenaphthene
1500 UJ	UG/KG	2,4-Dinitrophenol
1500 U	UG/KG	4-Nitrophenol
600 U	UG/KG	Dibenzofuran
600 U	UG/KG	2,4-Dinitrotoluene
600 U	UG/KG	Diethyl Phthalate
600 U	UG/KG	Fluorene
600 U	UG/KG	4-Chlorophenyl Phenyl Ether
1500 U	UG/KG	4-Nitroaniline
1500 UJ	UG/KG	2-Methyl-4,6-Dinitrophenol
600 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
600 U	UG/KG	4-Bromophenyl Phenyl Ether
600 U	UG/KG	Hexachlorobenzene (HCB)
600 U	UG/KG	Atrazine
1500 U	UG/KG	Pentachlorophenol
600 U	UG/KG	Phenanthrene
330 J	UG/KG	Anthracene
600 U	UG/KG	Carbazole
600 U	UG/KG	Di-n-Butylphthalate
1300	UG/KG	Fluoranthene
1600	UG/KG	Pyrene
600 U	UG/KG	Benzyl Butyl Phthalate
600 U	UG/KG	3,3'-Dichlorobenzidine
990	UG/KG	Benzo(a)Anthracene
1100	UG/KG	Chrysene
600 U	UG/KG	bis(2-Ethylhexyl) Phthalate
600 U	UG/KG	Di-n-Octylphthalate
2700 J	UG/KG	Benzo(b)Fluoranthene
2600 J	UG/KG	Benzo(k)Fluoranthene
870	UG/KG	Benzo-a-Pyrene
550 J	UG/KG	Indeno (1,2,3-cd) Pyrene
260 J	UG/KG	Dibenzo(a,h)Anthracene
330 J	UG/KG	Benzo(ghi)Perylene
45	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6797** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS24SS /
Media: SURFACE SOIL (0" - 1 2")

Case No: 31635
MD No: 1XX7
D No: 1XX7

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:35
Ending:

RESULTS	UNITS	ANALYTE
1600 NJ	UG/KG	CARYOPHYLLENE
160 NJ	UG/KG	PYRENE, 1-METHYL-
140 NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
840 NJ	UG/KG	BENZO [E] PYRENE
200 J	UG/KG	UNKNOWN ALKENE
2600 NJ	UG/KG	STIGMAST-4-EN-3-ONE
1700 J	UG/KG	6 UNKNOWN PAHS
5900 J	UG/KG	15 UNKNOWN COMPOUNDS
260	UG/KG	PERYLENE

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6798** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS12SS / MD No: 1XX9 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
400 U	UG/KG	Benzaldehyde
400 U	UG/KG	Phenol
400 U	UG/KG	bis(2-Chloroethyl) Ether
400 U	UG/KG	2-Chlorophenol
400 U	UG/KG	2-Methylphenol
400 U	UG/KG	bis(2-Chloroisopropyl) Ether
400 U	UG/KG	Acetophenone
400 U	UG/KG	(3-and/or 4-)Methylphenol
400 U	UG/KG	n-Nitrosodi-n-Propylamine
400 U	UG/KG	Hexachloroethane
400 U	UG/KG	Nitrobenzene
400 U	UG/KG	Isophorone
400 U	UG/KG	2-Nitrophenol
400 U	UG/KG	2,4-Dimethylphenol
400 U	UG/KG	bis(2-Chloroethoxy)Methane
400 U	UG/KG	2,4-Dichlorophenol
400 U	UG/KG	Naphthalene
400 U	UG/KG	4-Chloroaniline
400 U	UG/KG	Hexachlorobutadiene
400 U	UG/KG	Caprolactam
400 U	UG/KG	4-Chloro-3-Methylphenol
400 U	UG/KG	2-Methylnaphthalene
400 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
400 U	UG/KG	2,4,6-Trichlorophenol
1000 U	UG/KG	2,4,5-Trichlorophenol
400 U	UG/KG	1,1-Biphenyl
400 U	UG/KG	2-Chloronaphthalene
1000 U	UG/KG	2-Nitroaniline
400 U	UG/KG	Dimethyl Phthalate
400 U	UG/KG	2,6-Dinitrotoluene
400 U	UG/KG	Acenaphthylene
1000 U	UG/KG	3-Nitroaniline
400 U	UG/KG	Acenaphthene
1000 UJ	UG/KG	2,4-Dinitrophenol
1000 U	UG/KG	4-Nitrophenol
400 U	UG/KG	Dibenzofuran
400 U	UG/KG	2,4-Dinitrotoluene
400 U	UG/KG	Diethyl Phthalate
400 U	UG/KG	Fluorene
400 U	UG/KG	4-Chlorophenyl Phenyl Ether
1000 U	UG/KG	4-Nitroaniline
1000 UJ	UG/KG	2-Methyl-4,6-Dinitrophenol
400 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
400 U	UG/KG	4-Bromophenyl Phenyl Ether
400 U	UG/KG	Hexachlorobenzene (HCB)
400 U	UG/KG	Atrazine
1000 U	UG/KG	Pentachlorophenol
400 U	UG/KG	Phenanthrene
400 U	UG/KG	Anthracene
400 U	UG/KG	Carbazole
400 U	UG/KG	Di-n-Butylphthalate
400 U	UG/KG	Fluoranthene
400 U	UG/KG	Pyrene
400 U	UG/KG	Benzyl Butyl Phthalate
400 U	UG/KG	3,3'-Dichlorobenzidine
400 U	UG/KG	Benzo(a)Anthracene
400 U	UG/KG	Chrysene
400 U	UG/KG	bis(2-Ethylhexyl) Phthalate
400 U	UG/KG	Di-n-Octylphthalate
400 U	UG/KG	Benzo(b)Fluoranthene
400 U	UG/KG	Benzo(k)Fluoranthene
400 U	UG/KG	Benzo-a-Pyrene
400 U	UG/KG	Indeno (1,2,3-cd) Pyrene
400 U	UG/KG	Dibenzo(a,h)Anthracene
400 U	UG/KG	Benzo(ghi)Perylene
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6798** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS12SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XX9
D No: 1XX9

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:40
Ending:

RESULTS	UNITS	ANALYTE
410 J	UG/KG	3 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6799** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS12SB /
Media: SUBSURFACE SOIL (> 12") MD No: 1XY0 Inorg Contractor: SENTIN
D No: 1XY0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
450 U	UG/KG	Benzaldehyde
450 U	UG/KG	Phenol
450 U	UG/KG	bis(2-Chloroethyl) Ether
450 U	UG/KG	2-Chlorophenol
450 U	UG/KG	2-Methylphenol
450 U	UG/KG	bis(2-Chloroisopropyl) Ether
450 U	UG/KG	Acetophenone
450 U	UG/KG	(3-and/or 4-)Methylphenol
450 U	UG/KG	n-Nitrosodi-n-Propylamine
450 U	UG/KG	Hexachloroethane
450 U	UG/KG	Nitrobenzene
450 U	UG/KG	Isophorone
450 U	UG/KG	2-Nitrophenol
450 U	UG/KG	2,4-Dimethylphenol
450 U	UG/KG	bis(2-Chloroethoxy)Methane
450 U	UG/KG	2,4-Dichlorophenol
450 U	UG/KG	Naphthalene
450 U	UG/KG	4-Chloroaniline
450 U	UG/KG	Hexachlorobutadiene
450 U	UG/KG	Caprolactam
450 U	UG/KG	4-Chloro-3-Methylphenol
450 U	UG/KG	2-Methylnaphthalene
450 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
450 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
450 U	UG/KG	1,1-Biphenyl
450 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
450 U	UG/KG	Dimethyl Phthalate
450 U	UG/KG	2,6-Dinitrotoluene
450 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
450 U	UG/KG	Acenaphthene
1100 UJ	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
450 U	UG/KG	Dibenzofuran
450 U	UG/KG	2,4-Dinitrotoluene
450 U	UG/KG	Diethyl Phthalate
450 U	UG/KG	Fluorene
450 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 UJ	UG/KG	2-Methyl-4,6-Dinitrophenol
450 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
450 U	UG/KG	4-Bromophenyl Phenyl Ether
450 U	UG/KG	Hexachlorobenzene (HCB)
450 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
450 U	UG/KG	Phenanthrene
450 U	UG/KG	Anthracene
450 U	UG/KG	Carbazole
450 U	UG/KG	Di-n-Butylphthalate
450 U	UG/KG	Fluoranthene
450 U	UG/KG	Pyrene
450 U	UG/KG	Benzyl Butyl Phthalate
450 U	UG/KG	3,3'-Dichlorobenzidine
450 U	UG/KG	Benzo(a)Anthracene
450 U	UG/KG	Chrysene
450 U	UG/KG	bis(2-Ethylhexyl) Phthalate
450 U	UG/KG	Di-n-Octylphthalate
450 U	UG/KG	Benzo(b)Fluoranthene
450 U	UG/KG	Benzo(k)Fluoranthene
450 U	UG/KG	Benzo-a-Pyrene
450 U	UG/KG	Indeno (1,2,3-cd) Pyrene
450 U	UG/KG	Dibenzo(a,h)Anthracene
450 U	UG/KG	Benzo(ghi)Perylene
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6800** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS03SS / — MD No: 1XY1 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XY1 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
430 U	UG/KG	Benzaldehyde
430 U	UG/KG	Phenol
430 U	UG/KG	bis(2-Chloroethyl) Ether
430 U	UG/KG	2-Chlorophenol
430 U	UG/KG	2-Methylphenol
430 U	UG/KG	bis(2-Chloroisopropyl) Ether
430 U	UG/KG	Acetophenone
430 U	UG/KG	(3-and/or 4-)Methylphenol
430 U	UG/KG	n-Nitrosodi-n-Propylamine
430 U	UG/KG	Hexachloroethane
430 U	UG/KG	Nitrobenzene
430 U	UG/KG	Isophorone
430 U	UG/KG	2-Nitrophenol
430 U	UG/KG	2,4-Dimethylphenol
430 U	UG/KG	bis(2-Chloroethoxy)Methane
430 U	UG/KG	2,4-Dichlorophenol
430 U	UG/KG	Naphthalene
430 U	UG/KG	4-Chloroaniline
430 U	UG/KG	Hexachlorobutadiene
430 U	UG/KG	Caprolactam
430 U	UG/KG	4-Chloro-3-Methylphenol
430 U	UG/KG	2-Methylnaphthalene
430 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
430 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
430 U	UG/KG	1,1-Biphenyl
430 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
430 U	UG/KG	Dimethyl Phthalate
430 U	UG/KG	2,6-Dinitrotoluene
430 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
430 U	UG/KG	Acenaphthene
1100 UJ	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol
430 U	UG/KG	Dibenzofuran
430 U	UG/KG	2,4-Dinitrotoluene
430 U	UG/KG	Diethyl Phthalate
430 U	UG/KG	Fluorene
430 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 UJ	UG/KG	2-Methyl-4,6-Dinitrophenol
430 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
430 U	UG/KG	4-Bromophenyl Phenyl Ether
430 U	UG/KG	Hexachlorobenzene (HCB)
430 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
430 U	UG/KG	Phenanthrene
430 U	UG/KG	Anthracene
430 U	UG/KG	Carbazole
430 U	UG/KG	Di-n-Butylphthalate
430 U	UG/KG	Fluoranthene
430 U	UG/KG	Pyrene
430 U	UG/KG	Benzyl Butyl Phthalate
430 U	UG/KG	3,3'-Dichlorobenzidine
430 U	UG/KG	Benzo(a)Anthracene
430 U	UG/KG	Chrysene
430 U	UG/KG	bis(2-Ethylhexyl) Phthalate
430 U	UG/KG	Di-n-Octylphthalate
420 U	UG/KG	Benzo(b)Fluoranthene
430 U	UG/KG	Benzo(k)Fluoranthene
430 U	UG/KG	Benzo-a-Pyrene
430 U	UG/KG	Indeno (1,2,3-cd) Pyrene
430 U	UG/KG	Dibenzo(a,h)Anthracene
430 U	UG/KG	Benzo(ghi)Perylene
24	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6800** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS03SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XY1
D No: 1XY1

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:40
Ending:

RESULTS	UNITS	ANALYTE
91 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6801** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS03SB / — MD No: 1XY2 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XY2 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:55
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
460 U	UG/KG	Benzaldehyde
460 U	UG/KG	Phenol
460 U	UG/KG	bis(2-Chloroethyl) Ether
460 U	UG/KG	2-Chlorophenol
460 U	UG/KG	2-Methylphenol
460 U	UG/KG	bis(2-Chloroisopropyl) Ether
460 U	UG/KG	Acetophenone
460 U	UG/KG	(3-and/or 4-)Methylphenol
460 U	UG/KG	n-Nitrosodi-n-Propylamine
460 U	UG/KG	Hexachloroethane
460 U	UG/KG	Nitrobenzene
460 U	UG/KG	Isophorone
460 U	UG/KG	2-Nitrophenol
460 U	UG/KG	2,4-Dimethylphenol
460 U	UG/KG	bis(2-Chloroethoxy)Methane
460 U	UG/KG	2,4-Dichlorophenol
460 U	UG/KG	Naphthalene
460 U	UG/KG	4-Chloroaniline
460 U	UG/KG	Hexachlorobutadiene
460 U	UG/KG	Caprolactam
460 U	UG/KG	4-Chloro-3-Methylphenol
460 U	UG/KG	2-Methylnaphthalene
460 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
460 U	UG/KG	2,4,6-Trichlorophenol
1200 U	UG/KG	2,4,5-Trichlorophenol
460 U	UG/KG	1,1-Biphenyl
460 U	UG/KG	2-Chloronaphthalene
1200 U	UG/KG	2-Nitroaniline
460 U	UG/KG	Dimethyl Phthalate
460 U	UG/KG	2,6-Dinitrotoluene
460 U	UG/KG	Acenaphthylene
1200 U	UG/KG	3-Nitroaniline
460 U	UG/KG	Acenaphthene
1200 U	UG/KG	2,4-Dinitrophenol
1200 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
460 U	UG/KG	Dibenzofuran
460 U	UG/KG	2,4-Dinitrotoluene
460 U	UG/KG	Diethyl Phthalate
460 U	UG/KG	Fluorene
460 U	UG/KG	4-Chlorophenyl Phenyl Ether
1200 U	UG/KG	4-Nitroaniline
1200 U	UG/KG	2-Methyl-4,6-Dinitrophenol
460 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
460 U	UG/KG	4-Bromophenyl Phenyl Ether
460 U	UG/KG	Hexachlorobenzene (HCB)
460 U	UG/KG	Atrazine
1200 U	UG/KG	Pentachlorophenol
460 U	UG/KG	Phenanthrene
460 U	UG/KG	Anthracene
460 U	UG/KG	Carbazole
460 U	UG/KG	Di-n-Butylphthalate
460 U	UG/KG	Fluoranthene
460 U	UG/KG	Pyrene
460 UJ	UG/KG	Benzyl Butyl Phthalate
460 U	UG/KG	3,3'-Dichlorobenzidine
460 U	UG/KG	Benzo(a)Anthracene
460 U	UG/KG	Chrysene
460 UJ	UG/KG	bis(2-Ethylhexyl) Phthalate
460 U	UG/KG	Di-n-Octylphthalate
460 U	UG/KG	Benzo(b)Fluoranthene
460 U	UG/KG	Benzo(k)Fluoranthene
460 U	UG/KG	Benzo-a-Pyrene
460 U	UG/KG	Indeno (1,2,3-cd) Pyrene
460 U	UG/KG	Dibenzo(a,h)Anthracene
460 U	UG/KG	Benzo(ghi)Perylene
28	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6801** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS03SB / — MD No: 1XY2 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XY2 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:55
Ending:

RESULTS	UNITS	ANALYTE
250 J	UG/KG	2 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6802** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS08SS / MD No: 1XY3 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:10
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1400 U	UG/KG	Benzaldehyde
1400 U	UG/KG	Phenol
1400 U	UG/KG	bis(2-Chloroethyl) Ether
1400 U	UG/KG	2-Chlorophenol
1400 U	UG/KG	2-Methylphenol
1400 U	UG/KG	bis(2-Chloroisopropyl) Ether
1400 U	UG/KG	Acetophenone
1400 U	UG/KG	(3-and/or 4-)Methylphenol
1400 U	UG/KG	n-Nitrosodi-n-Propylamine
1400 U	UG/KG	Hexachloroethane
1400 U	UG/KG	Nitrobenzene
1400 U	UG/KG	Isophorone
1400 U	UG/KG	2-Nitrophenol
1400 U	UG/KG	2,4-Dimethylphenol
1400 U	UG/KG	bis(2-Chloroethoxy)Methane
1400 U	UG/KG	2,4-Dichlorophenol
1400 U	UG/KG	Naphthalene
1400 U	UG/KG	4-Chloroaniline
1400 U	UG/KG	Hexachlorobutadiene
1400 U	UG/KG	Caprolactam
1400 U	UG/KG	4-Chloro-3-Methylphenol
1400 U	UG/KG	2-Methylnaphthalene
1400 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
1400 U	UG/KG	2,4,6-Trichlorophenol
3500 U	UG/KG	2,4,5-Trichlorophenol
1400 U	UG/KG	1,1-Biphenyl
1400 U	UG/KG	2-Chloronaphthalene
3500 U	UG/KG	2-Nitroaniline
1400 U	UG/KG	Dimethyl Phthalate
1400 U	UG/KG	2,6-Dinitrotoluene
480 J	UG/KG	Acenaphthylene
3500 U	UG/KG	3-Nitroaniline
1400 U	UG/KG	Acenaphthene
3500 UJ	UG/KG	2,4-Dinitrophenol
3500 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
1400 U	UG/KG	Dibenzofuran
1400 U	UG/KG	2,4-Dinitrotoluene
1400 U	UG/KG	Diethyl Phthalate
1400 U	UG/KG	Fluorene
1400 U	UG/KG	4-Chlorophenyl Phenyl Ether
3500 U	UG/KG	4-Nitroaniline
3500 UJ	UG/KG	2-Methyl-4,6-Dinitrophenol
1400 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
1400 U	UG/KG	4-Bromophenyl Phenyl Ether
1400 U	UG/KG	Hexachlorobenzene (HCB)
1400 U	UG/KG	Atrazine
3500 U	UG/KG	Pentachlorophenol
610 J	UG/KG	Phenanthrene
930 J	UG/KG	Anthracene
190 J	UG/KG	Carbazole
1400 U	UG/KG	Di-n-Butylphthalate
2600	UG/KG	Fluoranthene
2500	UG/KG	Pyrene
1400 U	UG/KG	Benzyl Butyl Phthalate
1400 U	UG/KG	3,3'-Dichlorobenzidine
1500	UG/KG	Benzo(a)Anthracene
2300	UG/KG	Chrysene
1400 U	UG/KG	bis(2-Ethylhexyl) Phthalate
1400 U	UG/KG	Di-n-Octylphthalate
11000 J	UG/KG	Benzo(b)Fluoranthene
12000 J	UG/KG	Benzo(k)Fluoranthene
3700	UG/KG	Benzo-a-Pyrene
5000	UG/KG	Indeno (1,2,3-cd) Pyrene
1700	UG/KG	Dibenzo(a,h)Anthracene
3800	UG/KG	Benzo(ghi)Perylene
4	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6802** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS08SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XY3
D No: 1XY3

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:10
Ending:

RESULTS	UNITS	ANALYTE
920 J	UG/KG	BENZOFLUORENE
1000 NJ	UG/KG	PYRENE, 2-METHYL-
880 NJ	UG/KG	PYRENE, 1-METHYL-
910 NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
1200 NJ	UG/KG	CHRYSENE, 1-METHYL-
1400 NJ	UG/KG	5,12-NAPHTHACENEDIONE
3900 NJ	UG/KG	PERYLENE
880 NJ	UG/KG	1,2:4,5-DIBENZPYRENE
5400 J	UG/KG	4 UNKNOWN PAHS
23000 J	UG/KG	17 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6804** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS08SB /
Media: SUBSURFACE SOIL (> 12") D No: 1XY4

MD No: 1XY4 Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:20
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
400 U	UG/KG	Benzaldehyde
400 U	UG/KG	Phenol
400 U	UG/KG	bis(2-Chloroethyl) Ether
400 U	UG/KG	2-Chlorophenol
400 U	UG/KG	2-Methylphenol
400 U	UG/KG	bis(2-Chloroisopropyl) Ether
400 U	UG/KG	Acetophenone
400 U	UG/KG	(3-and/or 4-)Methylphenol
400 U	UG/KG	n-Nitrosodi-n-Propylamine
400 U	UG/KG	Hexachloroethane
400 U	UG/KG	Nitrobenzene
400 U	UG/KG	Isophorone
400 U	UG/KG	2-Nitrophenol
400 U	UG/KG	2,4-Dimethylphenol
400 U	UG/KG	bis(2-Chloroethoxy)Methane
400 U	UG/KG	2,4-Dichlorophenol
400 U	UG/KG	Naphthalene
400 U	UG/KG	4-Chloroaniline
400 U	UG/KG	Hexachlorobutadiene
400 U	UG/KG	Caprolactam
400 U	UG/KG	4-Chloro-3-Methylphenol
400 U	UG/KG	2-Methylnaphthalene
400 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
400 U	UG/KG	2,4,6-Trichlorophenol
1000 U	UG/KG	2,4,5-Trichlorophenol
400 U	UG/KG	1,1-Biphenyl
400 U	UG/KG	2-Chloronaphthalene
1000 U	UG/KG	2-Nitroaniline
400 U	UG/KG	Dimethyl Phthalate
400 U	UG/KG	2,6-Dinitrotoluene
400 U	UG/KG	Acenaphthylene
1000 U	UG/KG	3-Nitroaniline
400 U	UG/KG	Acenaphthene
1000 UJ	UG/KG	2,4-Dinitrophenol
1000 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
400 U	UG/KG	Dibenzofuran
400 U	UG/KG	2,4-Dinitrotoluene
400 U	UG/KG	Diethyl Phthalate
400 U	UG/KG	Fluorene
400 U	UG/KG	4-Chlorophenyl Phenyl Ether
1000 U	UG/KG	4-Nitroaniline
1000 UJ	UG/KG	2-Methyl-4,6-Dinitrophenol
400 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
400 U	UG/KG	4-Bromophenyl Phenyl Ether
400 U	UG/KG	Hexachlorobenzene (HCB)
400 U	UG/KG	Atrazine
1000 U	UG/KG	Pentachlorophenol
400 U	UG/KG	Phenanthrene
74 J	UG/KG	Anthracene
400 U	UG/KG	Carbazole
400 U	UG/KG	Di-n-Butylphthalate
200 J	UG/KG	Fluoranthene
230 J	UG/KG	Pyrene
400 U	UG/KG	Benzyl Butyl Phthalate
400 U	UG/KG	3,3'-Dichlorobenzidine
120 J	UG/KG	Benzo(a)Anthracene
220 J	UG/KG	Chrysene
400 U	UG/KG	bis(2-Ethylhexyl) Phthalate
400 U	UG/KG	Di-n-Octylphthalate
1000 J	UG/KG	Benzo(b)Fluoranthene
980 J	UG/KG	Benzo(k)Fluoranthene
240 J	UG/KG	Benzo-a-Pyrene
420	UG/KG	Indeno (1,2,3-cd) Pyrene
150 J	UG/KG	Dibenzo(a,h)Anthracene
320 J	UG/KG	Benzo(ghi)Perylene
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6804** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS08SB / MD No: 1XY4 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XY4 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:20
Ending:

RESULTS	UNITS	ANALYTE
110 J	UG/KG	UNKNOWN AMIDE
490 NJ	UG/KG	PERYLENE
190 NJ	UG/KG	1,2:3,4-DIBENZPYRENE
120 NJ	UG/KG	NAPHTHO [1,2,3,4-DEF] CHRYSENE
560 J	UG/KG	3 UNKNOWN PAHS
1500 J	UG/KG	7 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6805** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS07SS / MD No: 1XY5 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
390 U	UG/KG	Benzaldehyde
390 U	UG/KG	Phenol
390 U	UG/KG	bis(2-Ghloroethyl) Ether
390 U	UG/KG	2-Chlorophenol
390 U	UG/KG	2-Methylphenol
390 U	UG/KG	bis(2-Chloroisopropyl) Ether
390 U	UG/KG	Acetophenone
390 U	UG/KG	(3-and/or 4-)Methylphenol
390 U	UG/KG	n-Nitrosodi-n-Propylamine
390 U	UG/KG	Hexachloroethane
390 U	UG/KG	Nitrobenzene
390 U	UG/KG	Isophorone
390 U	UG/KG	2-Nitrophenol
390 U	UG/KG	2,4-Dimethylphenol
390 U	UG/KG	bis(2-Chloroethoxy)Methane
390 U	UG/KG	2,4-Dichlorophenol
87 J	UG/KG	Naphthalene
390 U	UG/KG	4-Chloroaniline
390 U	UG/KG	Hexachlorobutadiene
390 U	UG/KG	Caprolactam
390 U	UG/KG	4-Chloro-3-Methylphenol
120 J	UG/KG	2-Methylnaphthalene
390 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
390 U	UG/KG	2,4,6-Trichlorophenol
980 U	UG/KG	2,4,5-Trichlorophenol
45 J	UG/KG	1,1-Biphenyl
390 U	UG/KG	2-Chloronaphthalene
980 U	UG/KG	2-Nitroaniline
390 U	UG/KG	Dimethyl Phthalate
390 U	UG/KG	2,6-Dinitrotoluene
320 J	UG/KG	Acenaphthylene
980 U	UG/KG	3-Nitroaniline
170 J	UG/KG	Acenaphthene
980 UJ	UG/KG	2,4-Dinitrophenol
980 U	UG/KG	4-Nitrophenol
240 J	UG/KG	Dibenzofuran
390 U	UG/KG	2,4-Dinitrotoluene
390 U	UG/KG	Diethyl Phthalate
180 J	UG/KG	Fluorene
390 U	UG/KG	4-Chlorophenyl Phenyl Ether
980 U	UG/KG	4-Nitroaniline
980 UJ	UG/KG	2-Methyl-4,6-Dinitrophenol
390 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
390 U	UG/KG	4-Bromophenyl Phenyl Ether
390 U	UG/KG	Hexachlorobenzene (HCB)
390 U	UG/KG	Atrazine
980 U	UG/KG	Pentachlorophenol
4200	UG/KG	Phenanthrene
970	UG/KG	Anthracene
510	UG/KG	Carbazole
390 U	UG/KG	Di-n-Butylphthalate
8200	UG/KG	Fluoranthene
6200	UG/KG	Pyrene
390 U	UG/KG	Benzyl Butyl Phthalate
390 U	UG/KG	3,3'-Dichlorobenzidine
2500	UG/KG	Benzo(a)Anthracene
4900	UG/KG	Chrysene
390 U	UG/KG	bis(2-Ethylhexyl) Phthalate
390 U	UG/KG	Di-n-Octylphthalate
4600 J	UG/KG	Benzo(b)Fluoranthene
5200 J	UG/KG	Benzo(k)Fluoranthene
2100	UG/KG	Benzo-a-Pyrene
1100	UG/KG	Indeno (1,2,3-cd) Pyrene
520	UG/KG	Dibenzo(a,h)Anthracene
690	UG/KG	Benzo(ghi)Perylene
15	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6805** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS07SS / MD No: 1XY5 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:35
Ending:

RESULTS	UNITS	ANALYTE
460 NJ	UG/KG	9H-FLUOREN-9-ONE
870 NJ	UG/KG	PHENANTHRENE, 2-METHYL-
1000 J	UG/KG	ANTHRACENE, 2-METHYL-
760 NJ	UG/KG	NAPHTHALENE, 2-PHENYL-
890 NJ	UG/KG	9,10-ANTHRACENEDIONE
830 NJ	UG/KG	PHENANTHRENE, 4,5-DIMETHYL-
740 NJ	UG/KG	11H-BENZO [B] FLUORENE
1200 NJ	UG/KG	PYRENE 2-METHYL-
740 NJ	UG/KG	PYRENE, 4-METHYL-
850 NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
670 NJ	UG/KG	BENZO [B] NAPHTHO [2,1-D] THIPHENE
580 NJ	UG/KG	CHRYSENE, 5-MEHTHYL-
540 NJ	UG/KG	BENZ (A) ANTHRACENE-7,12-DIONE
1200 NJ	UG/KG	BENZO [E] PYRENE
5300 J	UG/KG	7 UNKNOWN PAHS
5900 J	UG/KG	8 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6806** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS07SB / MD No: 1XY6 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XY6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
450 U	UG/KG	Benzaldehyde
450 U	UG/KG	Phenol
450 U	UG/KG	bis(2-Chloroethyl) Ether
450 U	UG/KG	2-Chlorophenol
450 U	UG/KG	2-Methylphenol
450 U	UG/KG	bis(2-Chloroisopropyl) Ether
450 U	UG/KG	Acetophenone
450 U	UG/KG	(3-and/or 4-)Methylphenol
450 U	UG/KG	n-Nitrosodi-n-Propylamine
450 U	UG/KG	Hexachloroethane
450 U	UG/KG	Nitrobenzene
450 U	UG/KG	Isophorone
450 U	UG/KG	2-Nitrophenol
450 U	UG/KG	2,4-Dimethylphenol
450 U	UG/KG	bis(2-Chloroethoxy)Methane
450 U	UG/KG	2,4-Dichlorophenol
450 U	UG/KG	Naphthalene
450 U	UG/KG	4-Chloroaniline
450 U	UG/KG	Hexachlorobutadiene
450 U	UG/KG	Caprolactam
450 U	UG/KG	4-Chloro-3-Methylphenol
450 U	UG/KG	2-Methylnaphthalene
450 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
450 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
450 U	UG/KG	1,1-Biphenyl
450 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
450 U	UG/KG	Dimethyl Phthalate
450 U	UG/KG	2,6-Dinitrotoluene
450 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
450 U	UG/KG	Acenaphthene
1100 UJ	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
450 U	UG/KG	Dibenzofuran
450 U	UG/KG	2,4-Dinitrotoluene
450 U	UG/KG	Diethyl Phthalate
450 U	UG/KG	Fluorene
450 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 UJ	UG/KG	2-Methyl-4,6-Dinitrophenol
450 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
450 U	UG/KG	4-Bromophenyl Phenyl Ether
450 U	UG/KG	Hexachlorobenzene (HCB)
450 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
450 U	UG/KG	Phenanthrene
450 U	UG/KG	Anthracene
450 U	UG/KG	Carbazole
450 U	UG/KG	Di-n-Butylphthalate
450 U	UG/KG	Fluoranthene
450 U	UG/KG	Pyrene
450 U	UG/KG	Benzyl Butyl Phthalate
450 U	UG/KG	3,3'-Dichlorobenzidine
450 U	UG/KG	Benzo(a)Anthracene
450 U	UG/KG	Chrysene
450 U	UG/KG	bis(2-Ethylhexyl) Phthalate
450 U	UG/KG	Di-n-Octylphthalate
47 J	UG/KG	Benzo(b)Fluoranthene
45 J	UG/KG	Benzo(k)Fluoranthene
450 U	UG/KG	Benzo-a-Pyrene
450 U	UG/KG	Indeno (1,2,3-cd) Pyrene
450 U	UG/KG	Dibenzo(a,h)Anthracene
450 U	UG/KG	Benzo(ghi)Perylene
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6806** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS07SB / MD No: 1XY6 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XY6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:45
Ending:

RESULTS	UNITS	ANALYTE
190 J	UG/KG	UNKNOWN COMPOUND

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6807** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS04SS / MD No: 1XY7 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY7 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
430 U	UG/KG	Benzaldehyde
430 U	UG/KG	Phenol
430 U	UG/KG	bis(2-Chloroethyl) Ether
430 U	UG/KG	2-Chlorophenol
430 U	UG/KG	2-Methylphenol
430 U	UG/KG	bis(2-Chloroisopropyl) Ether
430 U	UG/KG	Acetophenone
430 U	UG/KG	(3-and/or 4-)Methylphenol
430 U	UG/KG	n-Nitrosodi-n-Propylamine
430 U	UG/KG	Hexachloroethane
430 U	UG/KG	Nitrobenzene
430 U	UG/KG	Isophorone
430 U	UG/KG	2-Nitrophenol
430 U	UG/KG	2,4-Dimethylphenol
430 U	UG/KG	bis(2-Chloroethoxy)Methane
430 U	UG/KG	2,4-Dichlorophenol
430 U	UG/KG	Naphthalene
430 U	UG/KG	4-Chloroaniline
430 U	UG/KG	Hexachlorobutadiene
430 U	UG/KG	Caprolactam
430 U	UG/KG	4-Chloro-3-Methylphenol
430 U	UG/KG	2-Methylnaphthalene
430 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
430 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
430 U	UG/KG	1,1-Biphenyl
430 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
430 U	UG/KG	Dimethyl Phthalate
430 U	UG/KG	2,6-Dinitrotoluene
430 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
430 U	UG/KG	Acenaphthene
1100 U	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
430 U	UG/KG	Dibenzofuran
430 U	UG/KG	2,4-Dinitrotoluene
430 U	UG/KG	Diethyl Phthalate
430 U	UG/KG	Fluorene
430 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
430 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
430 U	UG/KG	4-Bromophenyl Phenyl Ether
430 U	UG/KG	Hexachlorobenzene (HCB)
430 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
430 U	UG/KG	Phenanthrene
430 U	UG/KG	Anthracene
430 U	UG/KG	Carbazole
430 U	UG/KG	Di-n-Butylphthalate
430 U	UG/KG	Fluoranthene
430 U	UG/KG	Pyrene
430 UJ	UG/KG	Benzyl Butyl Phthalate
430 U	UG/KG	3,3'-Dichlorobenzidine
430 U	UG/KG	Benzo(a)Anthracene
430 U	UG/KG	Chrysene
430 UJ	UG/KG	bis(2-Ethylhexyl) Phthalate
430 U	UG/KG	Di-n-Octylphthalate
430 U	UG/KG	Benzo(b)Fluoranthene
430 U	UG/KG	Benzo(k)Fluoranthene
430 U	UG/KG	Benzo-a-Pyrene
430 U	UG/KG	Indeno (1,2,3-cd) Pyrene
430 U	UG/KG	Dibenzo(a,h)Anthracene
430 U	UG/KG	Benzo(ghi)Perylene
24	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6807** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS04SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XY7
D No: 1XY7

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:30
Ending:

RESULTS	UNITS	ANALYTE
92 J	UG/KG	UNKNOWN ALCOHOL
350 J	UG/KG	STIGMAST-4-EN-3-ONE
250 J	UG/KG	2 UNKNOWN KETONES
2000 J	UG/KG	7 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6808** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS04SB / MD No: 1XY8 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XY8 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
430 U	UG/KG	Benzaldehyde
430 U	UG/KG	Phenol
430 U	UG/KG	bis(2-Chloroethyl) Ether
430 U	UG/KG	2-Chlorophenol
430 U	UG/KG	2-Methylphenol
430 U	UG/KG	bis(2-Chloroisopropyl) Ether
430 U	UG/KG	Acetophenone
430 U	UG/KG	(3-and/or 4-)Methylphenol
430 U	UG/KG	n-Nitrosodi-n-Propylamine
430 U	UG/KG	Hexachloroethane
430 U	UG/KG	Nitrobenzene
430 U	UG/KG	Isophorone
430 U	UG/KG	2-Nitrophenol
430 U	UG/KG	2,4-Dimethylphenol
430 U	UG/KG	bis(2-Chloroethoxy)Methane
430 U	UG/KG	2,4-Dichlorophenol
430 U	UG/KG	Naphthalene
430 U	UG/KG	4-Chloroaniline
430 U	UG/KG	Hexachlorobutadiene
430 U	UG/KG	Caprolactam
430 U	UG/KG	4-Chloro-3-Methylphenol
430 U	UG/KG	2-Methylnaphthalene
430 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
430 U	UG/KG	2,4,6-Trichlorophenol
1100 U	UG/KG	2,4,5-Trichlorophenol
430 U	UG/KG	1,1-Biphenyl
430 U	UG/KG	2-Chloronaphthalene
1100 U	UG/KG	2-Nitroaniline
430 U	UG/KG	Dimethyl Phthalate
430 U	UG/KG	2,6-Dinitrotoluene
430 U	UG/KG	Acenaphthylene
1100 U	UG/KG	3-Nitroaniline
430 U	UG/KG	Acenaphthene
1100 U	UG/KG	2,4-Dinitrophenol
1100 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
430 U	UG/KG	Dibenzofuran
430 U	UG/KG	2,4-Dinitrotoluene
430 U	UG/KG	Diethyl Phthalate
430 U	UG/KG	Fluorene
430 U	UG/KG	4-Chlorophenyl Phenyl Ether
1100 U	UG/KG	4-Nitroaniline
1100 U	UG/KG	2-Methyl-4,6-Dinitrophenol
430 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
430 U	UG/KG	4-Bromophenyl Phenyl Ether
430 U	UG/KG	Hexachlorobenzene (HCB)
430 U	UG/KG	Atrazine
1100 U	UG/KG	Pentachlorophenol
430 U	UG/KG	Phenanthrene
430 U	UG/KG	Anthracene
430 U	UG/KG	Carbazole
430 U	UG/KG	Di-n-Butylphthalate
430 U	UG/KG	Fluoranthene
430 U	UG/KG	Pyrene
430 UJ	UG/KG	Benzyl Butyl Phthalate
430 U	UG/KG	3,3'-Dichlorobenzidine
430 U	UG/KG	Benzo(a)Anthracene
430 U	UG/KG	Chrysene
430 UJ	UG/KG	bis(2-Ethylhexyl) Phthalate
430 U	UG/KG	Di-n-Octylphthalate
430 U	UG/KG	Benzo(b)Fluoranthene
430 U	UG/KG	Benzo(k)Fluoranthene
430 U	UG/KG	Benzo-a-Pyrene
430 U	UG/KG	Indeno (1,2,3-cd) Pyrene
430 U	UG/KG	Dibenzo(a,h)Anthracene
430 U	UG/KG	Benzo(ghi)Perylene
23	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6809** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS05SS /
Media: SURFACE SOIL (0" - 12")
MD No: 1XY9 Inorg Contractor: SENTIN
D No: 1XY9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
390 U	UG/KG	Benzaldehyde
390 U	UG/KG	Phenol
390 U	UG/KG	bis(2-Chloroethyl) Ether
390 U	UG/KG	2-Chlorophenol
390 U	UG/KG	2-Methylphenol
390 U	UG/KG	bis(2-Chloroisopropyl) Ether
390 U	UG/KG	Acetophenone
390 U	UG/KG	(3-and/or 4-)Methylphenol
390 U	UG/KG	n-Nitrosodi-n-Propylamine
390 U	UG/KG	Hexachloroethane
390 U	UG/KG	Nitrobenzene
390 U	UG/KG	Isophorone
390 U	UG/KG	2-Nitrophenol
390 U	UG/KG	2,4-Dimethylphenol
390 U	UG/KG	bis(2-Chloroethoxy)Methane
390 U	UG/KG	2,4-Dichlorophenol
390 U	UG/KG	Naphthalene
390 U	UG/KG	4-Chloroaniline
390 U	UG/KG	Hexachlorobutadiene
390 U	UG/KG	Caprolactam
390 U	UG/KG	4-Chloro-3-Methylphenol
390 U	UG/KG	2-Methylnaphthalene
390 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
390 U	UG/KG	2,4,6-Trichlorophenol
980 U	UG/KG	2,4,5-Trichlorophenol
390 U	UG/KG	1,1-Biphenyl
390 U	UG/KG	2-Chloronaphthalene
980 U	UG/KG	2-Nitroaniline
390 U	UG/KG	Dimethyl Phthalate
390 U	UG/KG	2,6-Dinitrotoluene
120 J	UG/KG	Acenaphthylene
980 U	UG/KG	3-Nitroaniline
390 U	UG/KG	Acenaphthene
980 U	UG/KG	2,4-Dinitrophenol
980 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
390 U	UG/KG	Dibenzofuran
390 U	UG/KG	2,4-Dinitrotoluene
390 U	UG/KG	Diethyl Phthalate
390 U	UG/KG	Fluorene
390 U	UG/KG	4-Chlorophenyl Phenyl Ether
980 U	UG/KG	4-Nitroaniline
980 U	UG/KG	2-Methyl-4,6-Dinitrophenol
390 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
390 U	UG/KG	4-Bromophenyl Phenyl Ether
390 U	UG/KG	Hexachlorobenzene (HCB)
390 U	UG/KG	Atrazine
980 U	UG/KG	Pentachlorophenol
320 J	UG/KG	Phenanthrene
470	UG/KG	Anthracene
200 J	UG/KG	Carbazole
390 U	UG/KG	Di-n-Butylphthalate
2600	UG/KG	Fluoranthene
1500	UG/KG	Pyrene
390 UJ	UG/KG	Benzyl Butyl Phthalate
390 U	UG/KG	3,3'-Dichlorobenzidine
770	UG/KG	Benzo(a)Anthracene
1500	UG/KG	Chrysene
390 UJ	UG/KG	bis(2-Ethylhexyl) Phthalate
390 U	UG/KG	Di-n-Octylphthalate
1800 J	UG/KG	Benzo(b)Fluoranthene
2100 J	UG/KG	Benzo(k)Fluoranthene
810	UG/KG	Benzo-a-Pyrene
610	UG/KG	Indeno (1,2,3-cd) Pyrene
190 J	UG/KG	Dibenzo(a,h)Anthracene
380 J	UG/KG	Benzo(ghi)Perylene
15	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6809** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS05SS / MD No: 1XY9 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:15
Ending:

RESULTS	UNITS	ANALYTE
190 J	UG/KG	METHYLANTHRACENE
260 NJ	UG/KG	9, 10-ANTHRACENEDIONE
160 NJ	UG/KG	PHENANTHRENE, 2,3-DIMETHYL-
160 J	UG/KG	BENZOFLUORENE
470 NJ	UG/KG	11H-BENZO [A] FLUORENE
250 NJ	UG/KG	PYRENE, 2-METHYL-
280 NJ	UG/KG	PYRENE, 1,3-DIMETHYL-
380 NJ	UG/KG	BENZO [B] NAPHTHO [2,1-D] THIOPHENE
310 NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
270 NJ	UG/KG	CHRYSENE, 6-METHYL-
330 NJ	UG/KG	5,12-NAPHTHACENEDIONE
290 NJ	UG/KG	BENZO [E] PYRENE
260 NJ	UG/KG	1,2:7,8-DIBENZPHENANTHRENE
180 NJ	UG/KG	[3,4:9,10] DIBENZPYRENE
1500 J	UG/KG	4 UNKNOWN PAHS
2700 J	UG/KG	11 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6810** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS05SB / MD No: 1XZ0 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XZ0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:25
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
410 U	UG/KG	Benzaldehyde
410 U	UG/KG	Phenol
410 U	UG/KG	bis(2-Chloroethyl) Ether
410 U	UG/KG	2-Chlorophenol
410 U	UG/KG	2-Methylphenol
410 U	UG/KG	bis(2-Chloroisopropyl) Ether
410 U	UG/KG	Acetophenone
410 U	UG/KG	(3-and/or 4-)Methylphenol
410 U	UG/KG	n-Nitrosodi-n-Propylamine
410 U	UG/KG	Hexachloroethane
410 U	UG/KG	Nitrobenzene
410 U	UG/KG	Isophorone
410 U	UG/KG	2-Nitrophenol
410 U	UG/KG	2,4-Dimethylphenol
410 U	UG/KG	bis(2-Chloroethoxy)Methane
410 U	UG/KG	2,4-Dichlorophenol
410 U	UG/KG	Naphthalene
410 U	UG/KG	4-Chloroaniline
410 U	UG/KG	Hexachlorobutadiene
410 U	UG/KG	Caprolactam
410 U	UG/KG	4-Chloro-3-Methylphenol
410 U	UG/KG	2-Methylnaphthalene
410 U	UG/KG	Hexachlorocyclopentadiene (HCCP)
410 U	UG/KG	2,4,6-Trichlorophenol
1000 U	UG/KG	2,4,5-Trichlorophenol
410 U	UG/KG	1,1-Biphenyl
410 U	UG/KG	2-Chloronaphthalene
1000 U	UG/KG	2-Nitroaniline
410 U	UG/KG	Dimethyl Phthalate
410 U	UG/KG	2,6-Dinitrotoluene
410 U	UG/KG	Acenaphthylene
1000 U	UG/KG	3-Nitroaniline
410 U	UG/KG	Acenaphthene
1000 U	UG/KG	2,4-Dinitrophenol
1000 U	UG/KG	4-Nitrophenol

RESULTS	UNITS	ANALYTE
410 U	UG/KG	Dibenzofuran
410 U	UG/KG	2,4-Dinitrotoluene
410 U	UG/KG	Diethyl Phthalate
410 U	UG/KG	Fluorene
410 U	UG/KG	4-Chlorophenyl Phenyl Ether
1000 U	UG/KG	4-Nitroaniline
1000 U	UG/KG	2-Methyl-4,6-Dinitrophenol
410 U	UG/KG	n-Nitrosodiphenylamine/Diphenylamine
NA	UG/KG	1,2,4,5-Tetrachlorobenzene
410 U	UG/KG	4-Bromophenyl Phenyl Ether
410 U	UG/KG	Hexachlorobenzene (HCB)
410 U	UG/KG	Atrazine
1000 U	UG/KG	Pentachlorophenol
410 U	UG/KG	Phenanthrene
410 U	UG/KG	Anthracene
410 U	UG/KG	Carbazole
410 U	UG/KG	Di-n-Butylphthalate
410 U	UG/KG	Fluoranthene
410 U	UG/KG	Pyrene
410 UJ	UG/KG	Benzyl Butyl Phthalate
410 U	UG/KG	3,3'-Dichlorobenzidine
410 U	UG/KG	Benzo(a)Anthracene
410 U	UG/KG	Chrysene
450 J	UG/KG	bis(2-Ethylhexyl) Phthalate
410 U	UG/KG	Di-n-Octylphthalate
410 U	UG/KG	Benzo(b)Fluoranthene
410 U	UG/KG	Benzo(k)Fluoranthene
410 U	UG/KG	Benzo-a-Pyrene
410 U	UG/KG	Indeno (1,2,3-cd) Pyrene
410 U	UG/KG	Dibenzo(a,h)Anthracene
410 U	UG/KG	Benzo(ghi)Perylene
19	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6811** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS03GW / — MD No: 1XZ1 — Inorg Contractor: SENTIN
Media: GROUNDWATER — D No: 1XZ1 — Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:55
Ending:

RESULTS	UNITS	ANALYTE
5.0 U	UG/L	Benzaldehyde
5.0 U	UG/L	Phenol
5.0 U	UG/L	bis(2-Chloroethyl) Ether
5.0 U	UG/L	2-Chlorophenol
5.0 U	UG/L	2-Methylphenol
5.0 U	UG/L	bis(2-Chloroisopropyl) Ether
5.0 U	UG/L	Acetophenone
5.0 U	UG/L	(3-and/or 4-)Methylphenol
5.0 U	UG/L	n-Nitrosodi-n-Propylamine
5.0 U	UG/L	Hexachloroethane
5.0 U	UG/L	Nitrobenzene
5.0 U	UG/L	Isophorone
5.0 U	UG/L	2-Nitrophenol
5.0 U	UG/L	2,4-Dimethylphenol
5.0 U	UG/L	bis(2-Chloroethoxy)Methane
5.0 U	UG/L	2,4-Dichlorophenol
5.0 U	UG/L	Naphthalene
5.0 U	UG/L	4-Chloroaniline
5.0 U	UG/L	Hexachlorobutadiene
5.0 UJ	UG/L	Caprolactam
5.0 U	UG/L	4-Chloro-3-Methylphenol
5.0 U	UG/L	2-Methylnaphthalene
5.0 UJ	UG/L	Hexachlorocyclopentadiene (HCCP)
5.0 U	UG/L	2,4,6-Trichlorophenol
20 U	UG/L	2,4,5-Trichlorophenol
5.0 UJ	UG/L	1,1-Biphenyl
5.0 U	UG/L	2-Chloronaphthalene
20 U	UG/L	2-Nitroaniline
5.0 UJ	UG/L	Dimethyl Phthalate
5.0 U	UG/L	2,6-Dinitrotoluene
5.0 U	UG/L	Acenaphthylene
20 U	UG/L	3-Nitroaniline
5.0 U	UG/L	Acenaphthene
20 UJ	UG/L	2,4-Dinitrophenol
20 U	UG/L	4-Nitrophenol

RESULTS	UNITS	ANALYTE
5.0 U	UG/L	Dibenzofuran
5.0 U	UG/L	2,4-Dinitrotoluene
5.0 UJ	UG/L	Diethyl Phthalate
5.0 U	UG/L	Fluorene
5.0 U	UG/L	4-Chlorophenyl Phenyl Ether
20 U	UG/L	4-Nitroaniline
20 UJ	UG/L	2-Methyl-4,6-Dinitrophenol
5.0 U	UG/L	n-Nitrosodiphenylamine/Diphenylamine
5.0 U	UG/L	1,2,4,5-Tetrachlorobenzene
5.0 U	UG/L	4-Bromophenyl Phenyl Ether
5.0 U	UG/L	Hexachlorobenzene (HCB)
5.0 U	UG/L	Atrazine
5.0 U	UG/L	Pentachlorophenol
5.0 U	UG/L	Phenanthrene
5.0 U	UG/L	Anthracene
NA	UG/L	Carbazole
5.0 UJ	UG/L	Di-n-Butylphthalate
5.0 U	UG/L	Fluoranthene
5.0 U	UG/L	Pyrene
5.0 UJ	UG/L	Benzyl Butyl Phthalate
5.0 UJ	UG/L	3,3'-Dichlorobenzidine
5.0 U	UG/L	Benzo(a)Anthracene
5.0 U	UG/L	Chrysene
5.0 UJ	UG/L	bis(2-Ethylhexyl) Phthalate
5.0 UJ	UG/L	Di-n-Octylphthalate
5.0 U	UG/L	Benzo(b)Fluoranthene
5.0 U	UG/L	Benzo(k)Fluoranthene
5.0 U	UG/L	Benzo-a-Pyrene
5.0 U	UG/L	Indeno (1,2,3-cd) Pyrene
5.0 U	UG/L	Dibenzo(a,h)Anthracene
5.0 U	UG/L	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6811** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS03GW / — MD No: 1XZ1 — Inorg Contractor: SENTIN
Media: GROUNDWATER — D No: 1XZ1 — Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:55
Ending:

RESULTS	UNITS	ANALYTE
2.1 NJ	UG/L	LIMONENE

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6812** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS04GW / MD No: 1XZ3 Inorg Contractor: SENTIN
Media: GROUNDWATER D No: 1XZ3 Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 13:20
Ending:

RESULTS	UNITS	ANALYTE
5.0 U	UG/L	Benzaldehyde
5.0 U	UG/L	Phenol
5.0 U	UG/L	bis(2-Chloroethyl) Ether
5.0 U	UG/L	2-Chlorophenol
5.0 U	UG/L	2-Methylphenol
5.0 U	UG/L	bis(2-Chloroisopropyl) Ether
5.0 U	UG/L	Acetophenone
5.0 U	UG/L	(3-and/or 4-)Methylphenol
5.0 U	UG/L	n-Nitrosodi-n-Propylamine
5.0 U	UG/L	Hexachloroethane
5.0 U	UG/L	Nitrobenzene
5.0 U	UG/L	Isophorone
5.0 U	UG/L	2-Nitrophenol
5.0 U	UG/L	2,4-Dimethylphenol
5.0 U	UG/L	bis(2-Chloroethoxy)Methane
5.0 U	UG/L	2,4-Dichlorophenol
5.0 U	UG/L	Naphthalene
5.0 U	UG/L	4-Chloroaniline
5.0 U	UG/L	Hexachlorobutadiene
5.0 U	UG/L	Caprolactam
5.0 U	UG/L	4-Chloro-3-Methylphenol
5.0 U	UG/L	2-Methylnaphthalene
5.0 UJ	UG/L	Hexachlorocyclopentadiene (HCCP)
5.0 U	UG/L	2,4,6-Trichlorophenol
20 U	UG/L	2,4,5-Trichlorophenol
5.0 U	UG/L	1,1-Biphenyl
5.0 U	UG/L	2-Chloronaphthalene
20 U	UG/L	2-Nitroaniline
5.0 U	UG/L	Dimethyl Phthalate
5.0 U	UG/L	2,6-Dinitrotoluene
5.0 U	UG/L	Acenaphthylene
20 U	UG/L	3-Nitroaniline
5.0 U	UG/L	Acenaphthene
20 UJ	UG/L	2,4-Dinitrophenol
20 U	UG/L	4-Nitrophenol

RESULTS	UNITS	ANALYTE
5.0 U	UG/L	Dibenzofuran
5.0 U	UG/L	2,4-Dinitrotoluene
5.0 U	UG/L	Diethyl Phthalate
5.0 U	UG/L	Fluorene
5.0 U	UG/L	4-Chlorophenyl Phenyl Ether
20 U	UG/L	4-Nitroaniline
20 UJ	UG/L	2-Methyl-4,6-Dinitrophenol
5.0 U	UG/L	n-Nitrosodiphenylamine/Diphenylamine
5.0 U	UG/L	1,2,4,5-Tetrachlorobenzene
5.0 U	UG/L	4-Bromophenyl Phenyl Ether
5.0 U	UG/L	Hexachlorobenzene (HCB)
5.0 U	UG/L	Atrazine
5.0 U	UG/L	Pentachlorophenol
5.0 U	UG/L	Phenanthrene
5.0 U	UG/L	Anthracene
NA	UG/L	Carbazole
5.0 U	UG/L	Di-n-Butylphthalate
5.0 U	UG/L	Fluoranthene
5.0 U	UG/L	Pyrene
5.0 U	UG/L	Benzyl Butyl Phthalate
5.0 UJ	UG/L	3,3'-Dichlorobenzidine
5.0 U	UG/L	Benzo(a)Anthracene
5.0 U	UG/L	Chrysene
5.0 U	UG/L	bis(2-Ethylhexyl) Phthalate
5.0 U	UG/L	Di-n-Octylphthalate
5.0 U	UG/L	Benzo(b)Fluoranthene
5.0 U	UG/L	Benzo(k)Fluoranthene
5.0 U	UG/L	Benzo-a-Pyrene
5.0 U	UG/L	Indeno (1,2,3-cd) Pyrene
5.0 U	UG/L	Dibenzo(a,h)Anthracene
5.0 U	UG/L	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

EXTRACTABLES SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:10**

Sample **6813** FY **2003** Project: **03-0474**

Extractables Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS05GW / — MD No: 1XZ4 — Inorg Contractor: SENTIN
Media: GROUNDWATER — D No: 1XZ4 — Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 11:45
Ending:

RESULTS	UNITS	ANALYTE
5.0 U	UG/L	Benzaldehyde
5.0 U	UG/L	Phenol
5.0 U	UG/L	bis(2-Chloroethyl) Ether
5.0 U	UG/L	2-Chlorophenol
5.0 U	UG/L	2-Methylphenol
5.0 U	UG/L	bis(2-Chloroisopropyl) Ether
5.0 U	UG/L	Acetophenone
5.0 U	UG/L	(3-and/or 4-)Methylphenol
5.0 U	UG/L	n-Nitrosodi-n-Propylamine
5.0 U	UG/L	Hexachloroethane
5.0 U	UG/L	Nitrobenzene
5.0 U	UG/L	Isophorone
5.0 U	UG/L	2-Nitrophenol
5.0 U	UG/L	2,4-Dimethylphenol
5.0 U	UG/L	bis(2-Chloroethoxy)Methane
5.0 U	UG/L	2,4-Dichlorophenol
5.0 U	UG/L	Naphthalene
5.0 U	UG/L	4-Chloroaniline
5.0 U	UG/L	Hexachlorobutadiene
5.0 U	UG/L	Caprolactam
5.0 U	UG/L	4-Chloro-3-Methylphenol
5.0 U	UG/L	2-Methylnaphthalene
5.0 UJ	UG/L	Hexachlorocyclopentadiene (HCCP)
5.0 U	UG/L	2,4,6-Trichlorophenol
20 U	UG/L	2,4,5-Trichlorophenol
5.0 U	UG/L	1,1-Biphenyl
5.0 U	UG/L	2-Chloronaphthalene
20 U	UG/L	2-Nitroaniline
5.0 U	UG/L	Dimethyl Phthalate
5.0 U	UG/L	2,6-Dinitrotoluene
5.0 U	UG/L	Acenaphthylene
20 U	UG/L	3-Nitroaniline
5.0 U	UG/L	Acenaphthene
20 UJ	UG/L	2,4-Dinitrophenol
20 U	UG/L	4-Nitrophenol

RESULTS	UNITS	ANALYTE
5.0 U	UG/L	Dibenzofuran
5.0 U	UG/L	2,4-Dinitrotoluene
5.0 U	UG/L	Diethyl Phthalate
5.0 U	UG/L	Fluorene
5.0 U	UG/L	4-Chlorophenyl Phenyl Ether
20 U	UG/L	4-Nitroaniline
20 UJ	UG/L	2-Methyl-4,6-Dinitrophenol
5.0 U	UG/L	n-Nitrosodiphenylamine/Diphenylamine
5.0 U	UG/L	1,2,4,5-Tetrachlorobenzene
5.0 U	UG/L	4-Bromophenyl Phenyl Ether
5.0 U	UG/L	Hexachlorobenzene (HCB)
5.0 U	UG/L	Atrazine
5.0 U	UG/L	Pentachlorophenol
5.0 U	UG/L	Phenanthrene
5.0 U	UG/L	Anthracene
NA	UG/L	Carbazole
5.0 U	UG/L	Di-n-Butylphthalate
5.0 U	UG/L	Fluoranthene
5.0 U	UG/L	Pyrene
5.0 U	UG/L	Benzyl Butyl Phthalate
5.0 UJ	UG/L	3,3'-Dichlorobenzidine
5.0 U	UG/L	Benzo(a)Anthracene
5.0 U	UG/L	Chrysene
5.0 U	UG/L	bis(2-Ethylhexyl) Phthalate
5.0 U	UG/L	Di-n-Octylphthalate
5.0 U	UG/L	Benzo(b)Fluoranthene
5.0 U	UG/L	Benzo(k)Fluoranthene
5.0 U	UG/L	Benzo-a-Pyrene
5.0 U	UG/L	Indeno (1,2,3-cd) Pyrene
5.0 U	UG/L	Dibenzo(a,h)Anthracene
5.0 U	UG/L	Benzo(ghi)Perylene

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6813** FY **2003** Project: **03-0474**

MISCELLANEOUS COMPOUNDS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS05GW /
Media: GROUNDWATER

Case No: 31635
MD No: 1XZ4
D No: 1XZ4

Inorg Contractor: SENTIN
Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 11:45
Ending:

RESULTS	UNITS	ANALYTE
4.7 J	UG/L	2 UNKNOWN COMPOUNDS

Data Reported as Identified by CLP Lab - IDs Not Verified

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
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R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

MEMORANDUM

Date: 06/20/2003

Subject: Results of PESTICIDES/PCB Sample Analysis
03-0474 Gulf States Creosoting
Flowood, MS

From: Goddard, Denise

To: Striggow, Brian

Thru: QA Office

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6754** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS01SD /
Media: SEDIMENT
MD No: 1XR4 Inorg Contractor: SENTIN
D No: 1XR4 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
3.8 U	UG/KG	alpha-BHC
3.8 U	UG/KG	beta-BHC
3.8 U	UG/KG	delta-BHC
3.8 U	UG/KG	gamma-BHC (Lindane)
3.8 U	UG/KG	Heptachlor
3.8 U	UG/KG	Aldrin
3.8 U	UG/KG	Heptachlor Epoxide
3.8 U	UG/KG	Endosulfan I (alpha)
7.3 U	UG/KG	Dieldrin
7.3 U	UG/KG	4,4'-DDE (p,p'-DDE)
7.3 U	UG/KG	Endrin
7.3 U	UG/KG	Endosulfan II (beta)
7.3 U	UG/KG	4,4'-DDD (p,p'-DDD)
7.3 U	UG/KG	Endosulfan Sulfate
7.3 U	UG/KG	4,4'-DDT (p,p'-DDT)
38 U	UG/KG	Methoxychlor
7.3 U	UG/KG	Endrin Ketone
7.3 U	UG/KG	Endrin Aldehyde
3.8 U	UG/KG	alpha-Chlordane /2
3.8 U	UG/KG	gamma-Chlordane /2
380 U	UG/KG	Toxaphene
73 U	UG/KG	PCB-1016 (Aroclor 1016)
150 U	UG/KG	PCB-1221 (Aroclor 1221)
73 U	UG/KG	PCB-1232 (Aroclor 1232)
73 U	UG/KG	PCB-1242 (Aroclor 1242)
73 U	UG/KG	PCB-1248 (Aroclor 1248)
73 U	UG/KG	PCB-1254 (Aroclor 1254)
73 U	UG/KG	PCB-1260 (Aroclor 1260)
55	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6755** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS18SB /
Media: SUBSURFACE SOIL (> 12") MD No: 1XR5 Inorg Contractor: SENTIN
D No: 1XR5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 08:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.3 U	UG/KG	alpha-BHC
2.3 U	UG/KG	beta-BHC
2.3 U	UG/KG	delta-BHC
1.7 J	UG/KG	gamma-BHC (Lindane)
2.3 U	UG/KG	Heptachlor
2.3 U	UG/KG	Aldrin
2.3 U	UG/KG	Heptachlor Epoxide
2.3 U	UG/KG	Endosulfan I (alpha)
4.4 U	UG/KG	Dieldrin
4.4 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.4 U	UG/KG	Endrin
4.4 U	UG/KG	Endosulfan II (beta)
4.4 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.4 U	UG/KG	Endosulfan Sulfate
4.4 U	UG/KG	4,4'-DDT (p,p'-DDT)
23 U	UG/KG	Methoxychlor
4.4 U	UG/KG	Endrin Ketone
4.4 U	UG/KG	Endrin Aldehyde
2.3 U	UG/KG	alpha-Chlordane /2
2.3 U	UG/KG	gamma-Chlordane /2
230 U	UG/KG	Toxaphene
44 U	UG/KG	PCB-1016 (Aroclor 1016)
89 U	UG/KG	PCB-1221 (Aroclor 1221)
44 U	UG/KG	PCB-1232 (Aroclor 1232)
44 U	UG/KG	PCB-1242 (Aroclor 1242)
44 U	UG/KG	PCB-1248 (Aroclor 1248)
44 U	UG/KG	PCB-1254 (Aroclor 1254)
42 J	UG/KG	PCB-1260 (Aroclor 1260)
25	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6756** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS18SS / MD No: 1XR6 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XR6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 08:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.3 U	UG/KG	Dieldrin
4.3 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.3 U	UG/KG	Endrin
4.3 U	UG/KG	Endosulfan II (beta)
4.3 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.3 U	UG/KG	Endosulfan Sulfate
4.3 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
4.3 U	UG/KG	Endrin Ketone
4.3 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
43 U	UG/KG	PCB-1016 (Aroclor 1016)
87 U	UG/KG	PCB-1221 (Aroclor 1221)
43 U	UG/KG	PCB-1232 (Aroclor 1232)
43 U	UG/KG	PCB-1242 (Aroclor 1242)
43 U	UG/KG	PCB-1248 (Aroclor 1248)
43 U	UG/KG	PCB-1254 (Aroclor 1254)
43 U	UG/KG	PCB-1260 (Aroclor 1260)
23	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6757** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS19SB /
Media: SUBSURFACE SOIL (> 12") D No: 1XR7

MD No: 1XR7 Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.2 U	UG/KG	Dieldrin
4.2 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.2 U	UG/KG	Endrin
4.2 U	UG/KG	Endosulfan II (beta)
4.2 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.2 U	UG/KG	Endosulfan Sulfate
4.2 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
4.2 U	UG/KG	Endrin Ketone
4.2 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
42 U	UG/KG	PCB-1016 (Aroclor 1016)
85 U	UG/KG	PCB-1221 (Aroclor 1221)
42 U	UG/KG	PCB-1232 (Aroclor 1232)
42 U	UG/KG	PCB-1242 (Aroclor 1242)
42 U	UG/KG	PCB-1248 (Aroclor 1248)
42 U	UG/KG	PCB-1254 (Aroclor 1254)
39 J	UG/KG	PCB-1260 (Aroclor 1260)
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6758** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS19SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XR8
D No: 1XR8

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
4.0 U	UG/KG	Dieldrin
4.0 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.0 U	UG/KG	Endrin
4.0 U	UG/KG	Endosulfan II (beta)
4.0 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.0 U	UG/KG	Endosulfan Sulfate
4.0 U	UG/KG	4,4'-DDT (p,p'-DDT)
20 U	UG/KG	Methoxychlor
4.0 U	UG/KG	Endrin Ketone
4.0 U	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
40 U	UG/KG	PCB-1016 (Aroclor 1016)
81 U	UG/KG	PCB-1221 (Aroclor 1221)
40 U	UG/KG	PCB-1232 (Aroclor 1232)
40 U	UG/KG	PCB-1242 (Aroclor 1242)
40 U	UG/KG	PCB-1248 (Aroclor 1248)
40 U	UG/KG	PCB-1254 (Aroclor 1254)
40 U	UG/KG	PCB-1260 (Aroclor 1260)
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6759** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS02SD / — MD No: 1XR9 — Inorg Contractor: SENTIN
Media: SEDIMENT — D No: 1XR9 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
3.5 U	UG/KG	alpha-BHC
3.5 U	UG/KG	beta-BHC
3.5 U	UG/KG	delta-BHC
3.5 U	UG/KG	gamma-BHC (Lindane)
3.5 U	UG/KG	Heptachlor
3.5 U	UG/KG	Aldrin
3.5 U	UG/KG	Heptachlor Epoxide
3.5 U	UG/KG	Endosulfan I (alpha)
6.9 U	UG/KG	Dieldrin
7.9	UG/KG	4,4'-DDE (p,p'-DDE)
6.9 U	UG/KG	Endrin
6.5 J	UG/KG	Endosulfan II (beta)
6.9 U	UG/KG	4,4'-DDD (p,p'-DDD)
10 N	UG/KG	Endosulfan Sulfate
6.9 U	UG/KG	4,4'-DDT (p,p'-DDT)
35 U	UG/KG	Methoxychlor
6.9 U	UG/KG	Endrin Ketone
6.9 U	UG/KG	Endrin Aldehyde
3.5 U	UG/KG	alpha-Chlordane /2
3.5 U	UG/KG	gamma-Chlordane /2
350 U	UG/KG	Toxaphene
69 U	UG/KG	PCB-1016 (Aroclor 1016)
140 U	UG/KG	PCB-1221 (Aroclor 1221)
69 U	UG/KG	PCB-1232 (Aroclor 1232)
69 U	UG/KG	PCB-1242 (Aroclor 1242)
69 U	UG/KG	PCB-1248 (Aroclor 1248)
69 U	UG/KG	PCB-1254 (Aroclor 1254)
69 U	UG/KG	PCB-1260 (Aroclor 1260)
52	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6760** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS17SS / — MD No: 1XS0 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XS0 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:05
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.2 U	UG/KG	Dieldrin
4.2 U	UG/KG	4,4'-DDE (p,p'-DDE)
6.4 J	UG/KG	Endrin
4.2 U	UG/KG	Endosulfan II (beta)
4.2 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.2 U	UG/KG	Endosulfan Sulfate
4.2 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
20 J	UG/KG	Endrin Ketone
4.2 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
42 U	UG/KG	PCB-1016 (Aroclor 1016)
85 U	UG/KG	PCB-1221 (Aroclor 1221)
42 U	UG/KG	PCB-1232 (Aroclor 1232)
42 U	UG/KG	PCB-1242 (Aroclor 1242)
42 U	UG/KG	PCB-1248 (Aroclor 1248)
42 U	UG/KG	PCB-1254 (Aroclor 1254)
42 U	UG/KG	PCB-1260 (Aroclor 1260)
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6761** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS17SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XS1
D No: 1XS1

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:20
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.2 U	UG/KG	Dieldrin
4.2 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.2 U	UG/KG	Endrin
4.2 U	UG/KG	Endosulfan II (beta)
4.2 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.2 U	UG/KG	Endosulfan Sulfate
4.2 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
4.2 U	UG/KG	Endrin Ketone
4.2 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
42 U	UG/KG	PCB-1016 (Aroclor 1016)
86 U	UG/KG	PCB-1221 (Aroclor 1221)
42 U	UG/KG	PCB-1232 (Aroclor 1232)
42 U	UG/KG	PCB-1242 (Aroclor 1242)
42 U	UG/KG	PCB-1248 (Aroclor 1248)
42 U	UG/KG	PCB-1254 (Aroclor 1254)
42 U	UG/KG	PCB-1260 (Aroclor 1260)
22	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample 6762 FY 2003 Project: 03-0474

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS20SS / MD No: 1XS2 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XS2 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.2 U	UG/KG	Dieldrin
4.1 NJ	UG/KG	4,4'-DDE (p,p'-DDE)
4.2 U	UG/KG	Endrin
4.2 U	UG/KG	Endosulfan II (beta)
4.2 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.2 U	UG/KG	Endosulfan Sulfate
4.2 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
4.2 U	UG/KG	Endrin Ketone
4.2 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
42 U	UG/KG	PCB-1016 (Aroclor 1016)
85 U	UG/KG	PCB-1221 (Aroclor 1221)
42 U	UG/KG	PCB-1232 (Aroclor 1232)
42 U	UG/KG	PCB-1242 (Aroclor 1242)
42 U	UG/KG	PCB-1248 (Aroclor 1248)
42 U	UG/KG	PCB-1254 (Aroclor 1254)
42 U	UG/KG	PCB-1260 (Aroclor 1260)
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6763** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS20SB / — MD No: 1XS3 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XS3 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:55
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1 U	UG/KG	alpha-BHC
2.1 U	UG/KG	beta-BHC
2.1 U	UG/KG	delta-BHC
2.1 U	UG/KG	gamma-BHC (Lindane)
2.1 U	UG/KG	Heptachlor
2.1 U	UG/KG	Aldrin
2.1 U	UG/KG	Heptachlor Epoxide
2.1 U	UG/KG	Endosulfan I (alpha)
4.0 U	UG/KG	Dieldrin
4.0 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.0 U	UG/KG	Endrin
4.0 U	UG/KG	Endosulfan II (beta)
4.0 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.0 U	UG/KG	Endosulfan Sulfate
4.0 U	UG/KG	4,4'-DDT (p,p'-DDT)
21 U	UG/KG	Methoxychlor
4.0 U	UG/KG	Endrin Ketone
4.0 U	UG/KG	Endrin Aldehyde
2.1 U	UG/KG	alpha-Chlordane /2
2.1 U	UG/KG	gamma-Chlordane /2
210 U	UG/KG	Toxaphene
40 U	UG/KG	PCB-1016 (Aroclor 1016)
82 U	UG/KG	PCB-1221 (Aroclor 1221)
40 U	UG/KG	PCB-1232 (Aroclor 1232)
40 U	UG/KG	PCB-1242 (Aroclor 1242)
40 U	UG/KG	PCB-1248 (Aroclor 1248)
40 U	UG/KG	PCB-1254 (Aroclor 1254)
40 U	UG/KG	PCB-1260 (Aroclor 1260)
18	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6764** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS20SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XS4
D No: 1XS4

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1 U	UG/KG	alpha-BHC
2.1 U	UG/KG	beta-BHC
2.1 U	UG/KG	delta-BHC
2.1 U	UG/KG	gamma-BHC (Lindane)
2.1 U	UG/KG	Heptachlor
2.1 U	UG/KG	Aldrin
2.1 U	UG/KG	Heptachlor Epoxide
2.1 U	UG/KG	Endosulfan I (alpha)
4.1 U	UG/KG	Dieldrin
3.3 NJ	UG/KG	4,4'-DDE (p,p'-DDE)
4.1 U	UG/KG	Endrin
4.1 U	UG/KG	Endosulfan II (beta)
4.1 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.1 U	UG/KG	Endosulfan Sulfate
4.1 U	UG/KG	4,4'-DDT (p,p'-DDT)
21 U	UG/KG	Methoxychlor
4.1 U	UG/KG	Endrin Ketone
4.1 U	UG/KG	Endrin Aldehyde
2.1 U	UG/KG	alpha-Chlordane /2
2.1 U	UG/KG	gamma-Chlordane /2
210 U	UG/KG	Toxaphene
41 U	UG/KG	PCB-1016 (Aroclor 1016)
84 U	UG/KG	PCB-1221 (Aroclor 1221)
41 U	UG/KG	PCB-1232 (Aroclor 1232)
41 U	UG/KG	PCB-1242 (Aroclor 1242)
41 U	UG/KG	PCB-1248 (Aroclor 1248)
41 U	UG/KG	PCB-1254 (Aroclor 1254)
41 U	UG/KG	PCB-1260 (Aroclor 1260)
20	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6765** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS03SD / MD No: 1XS5 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XS5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
8.1 U	UG/KG	alpha-BHC
12	UG/KG	beta-BHC
8.1 U	UG/KG	delta-BHC
8.1 U	UG/KG	gamma-BHC (Lindane)
8.1 U	UG/KG	Heptachlor
8.1 U	UG/KG	Aldrin
8.1 U	UG/KG	Heptachlor Epoxide
8.1 U	UG/KG	Endosulfan I (alpha)
16 U	UG/KG	Dieldrin
16 U	UG/KG	4,4'-DDE (p,p'-DDE)
16 U	UG/KG	Endrin
16 U	UG/KG	Endosulfan II (beta)
16 U	UG/KG	4,4'-DDD (p,p'-DDD)
14 NJ	UG/KG	Endosulfan Sulfate
16 U	UG/KG	4,4'-DDT (p,p'-DDT)
81 U	UG/KG	Methoxychlor
16 U	UG/KG	Endrin Ketone
16 U	UG/KG	Endrin Aldehyde
8.1 U	UG/KG	alpha-Chlordane /2
8.1 U	UG/KG	gamma-Chlordane /2
810 U	UG/KG	Toxaphene
160 U	UG/KG	PCB-1016 (Aroclor 1016)
320 U	UG/KG	PCB-1221 (Aroclor 1221)
160 U	UG/KG	PCB-1232 (Aroclor 1232)
160 U	UG/KG	PCB-1242 (Aroclor 1242)
160 U	UG/KG	PCB-1248 (Aroclor 1248)
160 U	UG/KG	PCB-1254 (Aroclor 1254)
160 U	UG/KG	PCB-1260 (Aroclor 1260)
79	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6766** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS16SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XS6
D No: 1XS6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.2 U	UG/KG	Dieldrin
2.5 J	UG/KG	4,4'-DDE (p,p'-DDE)
4.2 U	UG/KG	Endrin
4.2 U	UG/KG	Endosulfan II (beta)
4.2 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.2 U	UG/KG	Endosulfan Sulfate
4.2 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
14 J	UG/KG	Endrin Ketone
4.2 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
42 U	UG/KG	PCB-1016 (Aroclor 1016)
85 U	UG/KG	PCB-1221 (Aroclor 1221)
42 U	UG/KG	PCB-1232 (Aroclor 1232)
42 U	UG/KG	PCB-1242 (Aroclor 1242)
42 U	UG/KG	PCB-1248 (Aroclor 1248)
42 U	UG/KG	PCB-1254 (Aroclor 1254)
42 U	UG/KG	PCB-1260 (Aroclor 1260)
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6767** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS16SB /
Media: SUBSURFACE SOIL (> 12") D No: 1XS7

MD No: 1XS7 Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
1.3 J	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.2 U	UG/KG	Dieldrin
4.2 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.2 U	UG/KG	Endrin
4.2 U	UG/KG	Endosulfan II (beta)
4.2 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.2 U	UG/KG	Endosulfan Sulfate
4.2 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
4.2 U	UG/KG	Endrin Ketone
4.2 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
42 U	UG/KG	PCB-1016 (Aroclor 1016)
86 U	UG/KG	PCB-1221 (Aroclor 1221)
42 U	UG/KG	PCB-1232 (Aroclor 1232)
42 U	UG/KG	PCB-1242 (Aroclor 1242)
42 U	UG/KG	PCB-1248 (Aroclor 1248)
42 U	UG/KG	PCB-1254 (Aroclor 1254)
70	UG/KG	PCB-1260 (Aroclor 1260)
22	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6768** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS21SS / MD No: 1XS8 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XS8 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:05
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.2 U	UG/KG	Dieldrin
4.2 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.2 U	UG/KG	Endrin
4.2 U	UG/KG	Endosulfan II (beta)
4.2 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.2 U	UG/KG	Endosulfan Sulfate
4.2 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
4.2 U	UG/KG	Endrin Ketone
4.2 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
42 U	UG/KG	PCB-1016 (Aroclor 1016)
86 U	UG/KG	PCB-1221 (Aroclor 1221)
42 U	UG/KG	PCB-1232 (Aroclor 1232)
42 U	UG/KG	PCB-1242 (Aroclor 1242)
42 U	UG/KG	PCB-1248 (Aroclor 1248)
42 U	UG/KG	PCB-1254 (Aroclor 1254)
42 U	UG/KG	PCB-1260 (Aroclor 1260)
22	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6769** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS21SB / MD No: 1XS9 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XS9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1 U	UG/KG	alpha-BHC
2.1 U	UG/KG	beta-BHC
2.1 U	UG/KG	delta-BHC
2.1 U	UG/KG	gamma-BHC (Lindane)
2.1 U	UG/KG	Heptachlor
2.1 U	UG/KG	Aldrin
2.1 U	UG/KG	Heptachlor Epoxide
2.1 U	UG/KG	Endosulfan I (alpha)
4.1 U	UG/KG	Dieldrin
4.1 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.1 U	UG/KG	Endrin
4.1 U	UG/KG	Endosulfan II (beta)
4.1 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.1 U	UG/KG	Endosulfan Sulfate
4.1 U	UG/KG	4,4'-DDT (p,p'-DDT)
21 U	UG/KG	Methoxychlor
4.1 U	UG/KG	Endrin Ketone
4.1 U	UG/KG	Endrin Aldehyde
2.1 U	UG/KG	alpha-Chlordane /2
2.1 U	UG/KG	gamma-Chlordane /2
210 U	UG/KG	Toxaphene
41 U	UG/KG	PCB-1016 (Aroclor 1016)
84 U	UG/KG	PCB-1221 (Aroclor 1221)
41 U	UG/KG	PCB-1232 (Aroclor 1232)
41 U	UG/KG	PCB-1242 (Aroclor 1242)
41 U	UG/KG	PCB-1248 (Aroclor 1248)
41 U	UG/KG	PCB-1254 (Aroclor 1254)
41 U	UG/KG	PCB-1260 (Aroclor 1260)
20	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6770** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS01GW /
Media: GROUNDWATER MD No: 1XT0 Inorg Contractor: SENTIN
D No: 1XT0 Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:05
Ending:

RESULTS	UNITS	ANALYTE
0.010 U	UG/L	alpha-BHC
0.010 U	UG/L	beta-BHC
0.010 U	UG/L	delta-BHC
0.010 U	UG/L	gamma-BHC (Lindane)
0.010 U	UG/L	Heptachlor
0.010 U	UG/L	Aldrin
0.010 U	UG/L	Heptachlor Epoxide
0.010 U	UG/L	Endosulfan I (alpha)
0.020 U	UG/L	Dieldrin
0.020 UJ	UG/L	4,4'-DDE (p,p'-DDE)
0.020 UJ	UG/L	Endrin
0.020 U	UG/L	Endosulfan II (beta)
0.020 UJ	UG/L	4,4'-DDD (p,p'-DDD)
0.020 U	UG/L	Endosulfan Sulfate
0.020 UJ	UG/L	4,4'-DDT (p,p'-DDT)
0.10 U	UG/L	Methoxychlor
0.020 UJ	UG/L	Endrin Ketone
0.020 UJ	UG/L	Endrin Aldehyde
0.010 U	UG/L	alpha-Chlordane /2
0.010 U	UG/L	gamma-Chlordane /2
1.0 U	UG/L	Toxaphene
0.20 U	UG/L	PCB-1016 (Aroclor 1016)
0.40 U	UG/L	PCB-1221 (Aroclor 1221)
0.20 U	UG/L	PCB-1232 (Aroclor 1232)
0.20 U	UG/L	PCB-1242 (Aroclor 1242)
0.20 U	UG/L	PCB-1248 (Aroclor 1248)
0.20 U	UG/L	PCB-1254 (Aroclor 1254)
0.20 U	UG/L	PCB-1260 (Aroclor 1260)

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6771** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS01SB /
Media: SUBSURFACE SOIL (> 12") MD No: 1XT1 Inorg Contractor: SENTIN
D No: 1XT1 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1 U	UG/KG	alpha-BHC
2.1 U	UG/KG	beta-BHC
2.1 U	UG/KG	delta-BHC
2.1 U	UG/KG	gamma-BHC (Lindane)
2.1 U	UG/KG	Heptachlor
2.1 U	UG/KG	Aldrin
2.1 U	UG/KG	Heptachlor Epoxide
2.1 U	UG/KG	Endosulfan I (alpha)
4.0 U	UG/KG	Dieldrin
4.0 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.0 U	UG/KG	Endrin
4.0 U	UG/KG	Endosulfan II (beta)
4.0 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.0 U	UG/KG	Endosulfan Sulfate
4.0 U	UG/KG	4,4'-DDT (p,p'-DDT)
21 U	UG/KG	Methoxychlor
4.0 U	UG/KG	Endrin Ketone
4.0 U	UG/KG	Endrin Aldehyde
2.1 U	UG/KG	alpha-Chlordane /2
2.1 U	UG/KG	gamma-Chlordane /2
210 U	UG/KG	Toxaphene
40 U	UG/KG	PCB-1016 (Aroclor 1016)
82 U	UG/KG	PCB-1221 (Aroclor 1221)
40 U	UG/KG	PCB-1232 (Aroclor 1232)
40 U	UG/KG	PCB-1242 (Aroclor 1242)
40 U	UG/KG	PCB-1248 (Aroclor 1248)
40 U	UG/KG	PCB-1254 (Aroclor 1254)
40 U	UG/KG	PCB-1260 (Aroclor 1260)
18	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6772** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS01SS / MD No: 1XT2 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XT2 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
3.8 U	UG/KG	Dieldrin
3.8 U	UG/KG	4,4'-DDE (p,p'-DDE)
3.8 U	UG/KG	Endrin
3.8 U	UG/KG	Endosulfan II (beta)
3.8 U	UG/KG	4,4'-DDD (p,p'-DDD)
3.8 U	UG/KG	Endosulfan Sulfate
3.8 U	UG/KG	4,4'-DDT (p,p'-DDT)
20 U	UG/KG	Methoxychlor
3.8 U	UG/KG	Endrin Ketone
3.8 U	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
38 U	UG/KG	PCB-1016 (Aroclor 1016)
78 U	UG/KG	PCB-1221 (Aroclor 1221)
38 U	UG/KG	PCB-1232 (Aroclor 1232)
38 U	UG/KG	PCB-1242 (Aroclor 1242)
38 U	UG/KG	PCB-1248 (Aroclor 1248)
38 U	UG/KG	PCB-1254 (Aroclor 1254)
38 U	UG/KG	PCB-1260 (Aroclor 1260)
14	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6773** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS13SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XT3
D No: 1XT3

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
3.8 U	UG/KG	Dieldrin
30 U	UG/KG	4,4'-DDE (p,p'-DDE)
42 J	UG/KG	Endrin
3.8 U	UG/KG	Endosulfan II (beta)
3.8 U	UG/KG	4,4'-DDD (p,p'-DDD)
3.8 U	UG/KG	Endosulfan Sulfate
38 J	UG/KG	4,4'-DDT (p,p'-DDT)
20 U	UG/KG	Methoxychlor
150	UG/KG	Endrin Ketone
49 J	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
18 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
38 U	UG/KG	PCB-1016 (Aroclor 1016)
77 U	UG/KG	PCB-1221 (Aroclor 1221)
38 U	UG/KG	PCB-1232 (Aroclor 1232)
38 U	UG/KG	PCB-1242 (Aroclor 1242)
38 U	UG/KG	PCB-1248 (Aroclor 1248)
38 U	UG/KG	PCB-1254 (Aroclor 1254)
38 U	UG/KG	PCB-1260 (Aroclor 1260)
13	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6774** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF Case No: 31635

Id/Station: GS13SB / MD No: 1XT4 Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (> 12") D No: 1XT4 Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/22/2003 13:25

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
3.9 U	UG/KG	Dieldrin
6.9	UG/KG	4,4'-DDE (p,p'-DDE)
3.9 U	UG/KG	Endrin
3.9 U	UG/KG	Endosulfan II (beta)
3.9 U	UG/KG	4,4'-DDD (p,p'-DDD)
3.9 U	UG/KG	Endosulfan Sulfate
3.9 U	UG/KG	4,4'-DDT (p,p'-DDT)
20 U	UG/KG	Methoxychlor
3.9 U	UG/KG	Endrin Ketone
3.9 U	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
39 U	UG/KG	PCB-1016 (Aroclor 1016)
79 U	UG/KG	PCB-1221 (Aroclor 1221)
39 U	UG/KG	PCB-1232 (Aroclor 1232)
39 U	UG/KG	PCB-1242 (Aroclor 1242)
39 U	UG/KG	PCB-1248 (Aroclor 1248)
39 U	UG/KG	PCB-1254 (Aroclor 1254)
39 U	UG/KG	PCB-1260 (Aroclor 1260)
15	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6775** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS04SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XT5
D No: 1XT5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
7.7 U	UG/KG	alpha-BHC
7.7 U	UG/KG	beta-BHC
7.7 U	UG/KG	delta-BHC
7.7 U	UG/KG	gamma-BHC (Lindane)
7.7 U	UG/KG	Heptachlor
7.7 U	UG/KG	Aldrin
7.7 U	UG/KG	Heptachlor Epoxide
7.7 U	UG/KG	Endosulfan I (alpha)
15 U	UG/KG	Dieldrin
15 U	UG/KG	4,4'-DDE (p,p'-DDE)
15 U	UG/KG	Endrin
15 U	UG/KG	Endosulfan II (beta)
15 U	UG/KG	4,4'-DDD (p,p'-DDD)
15 U	UG/KG	Endosulfan Sulfate
15 U	UG/KG	4,4'-DDT (p,p'-DDT)
77 U	UG/KG	Methoxychlor
15 U	UG/KG	Endrin Ketone
15 U	UG/KG	Endrin Aldehyde
7.7 U	UG/KG	alpha-Chlordane /2
7.7 U	UG/KG	gamma-Chlordane /2
770 U	UG/KG	Toxaphene
150 U	UG/KG	PCB-1016 (Aroclor 1016)
300 U	UG/KG	PCB-1221 (Aroclor 1221)
150 U	UG/KG	PCB-1232 (Aroclor 1232)
150 U	UG/KG	PCB-1242 (Aroclor 1242)
150 U	UG/KG	PCB-1248 (Aroclor 1248)
150 U	UG/KG	PCB-1254 (Aroclor 1254)
150 U	UG/KG	PCB-1260 (Aroclor 1260)
78	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6776** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS05SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XT6
D No: 1XT6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
3.7 U	UG/KG	alpha-BHC
3.7 U	UG/KG	beta-BHC
3.7 U	UG/KG	delta-BHC
3.7 U	UG/KG	gamma-BHC (Lindane)
3.7 U	UG/KG	Heptachlor
3.7 U	UG/KG	Aldrin
3.7 U	UG/KG	Heptachlor Epoxide
3.7 U	UG/KG	Endosulfan I (alpha)
7.2 U	UG/KG	Dieldrin
7.2 U	UG/KG	4,4'-DDE (p,p'-DDE)
7.2 U	UG/KG	Endrin
7.2 U	UG/KG	Endosulfan II (beta)
7.2 U	UG/KG	4,4'-DDD (p,p'-DDD)
7.2 U	UG/KG	Endosulfan Sulfate
7.2 U	UG/KG	4,4'-DDT (p,p'-DDT)
37 U	UG/KG	Methoxychlor
7.2 U	UG/KG	Endrin Ketone
7.2 U	UG/KG	Endrin Aldehyde
3.7 U	UG/KG	alpha-Chlordane /2
3.7 U	UG/KG	gamma-Chlordane /2
370 U	UG/KG	Toxaphene
72 U	UG/KG	PCB-1016 (Aroclor 1016)
150 U	UG/KG	PCB-1221 (Aroclor 1221)
72 U	UG/KG	PCB-1232 (Aroclor 1232)
72 U	UG/KG	PCB-1242 (Aroclor 1242)
72 U	UG/KG	PCB-1248 (Aroclor 1248)
72 U	UG/KG	PCB-1254 (Aroclor 1254)
72 U	UG/KG	PCB-1260 (Aroclor 1260)
54	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Sample **6777** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS07SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XT7
D No: 1XT7

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1 U	UG/KG	alpha-BHC
2.1 U	UG/KG	beta-BHC
2.1 U	UG/KG	delta-BHC
2.1 U	UG/KG	gamma-BHC (Lindane)
2.1 U	UG/KG	Heptachlor
2.1 U	UG/KG	Aldrin
2.1 U	UG/KG	Heptachlor Epoxide
2.1 U	UG/KG	Endosulfan I (alpha)
4.0 U	UG/KG	Dieldrin
4.0 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.0 U	UG/KG	Endrin
4.0 U	UG/KG	Endosulfan II (beta)
4.0 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.0 U	UG/KG	Endosulfan Sulfate
4.0 U	UG/KG	4,4'-DDT (p,p'-DDT)
21 U	UG/KG	Methoxychlor
4.0 U	UG/KG	Endrin Ketone
4.0 U	UG/KG	Endrin Aldehyde
2.1 U	UG/KG	alpha-Chlordane /2
2.1 U	UG/KG	gamma-Chlordane /2
210 U	UG/KG	Toxaphene
40 U	UG/KG	PCB-1016 (Aroclor 1016)
82 U	UG/KG	PCB-1221 (Aroclor 1221)
40 U	UG/KG	PCB-1232 (Aroclor 1232)
40 U	UG/KG	PCB-1242 (Aroclor 1242)
40 U	UG/KG	PCB-1248 (Aroclor 1248)
40 U	UG/KG	PCB-1254 (Aroclor 1254)
40 U	UG/KG	PCB-1260 (Aroclor 1260)
18	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6778** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS23SS / — MD No: 1XT8 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XT8 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:55
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.7 NJ	UG/KG	alpha-BHC
2.3 U	UG/KG	beta-BHC
2.3 U	UG/KG	delta-BHC
2.3 U	UG/KG	gamma-BHC (Lindane)
2.3 U	UG/KG	Heptachlor
2.3 U	UG/KG	Aldrin
2.3 U	UG/KG	Heptachlor Epoxide
2.3 U	UG/KG	Endosulfan I (alpha)
4.5 U	UG/KG	Dieldrin
4.5 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.5 U	UG/KG	Endrin
4.5 U	UG/KG	Endosulfan II (beta)
4.5 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.5 U	UG/KG	Endosulfan Sulfate
4.5 U	UG/KG	4,4'-DDT (p,p'-DDT)
23 U	UG/KG	Methoxychlor
6.9 J	UG/KG	Endrin Ketone
4.5 U	UG/KG	Endrin Aldehyde
2.3 U	UG/KG	alpha-Chlordane /2
2.3 U	UG/KG	gamma-Chlordane /2
230 U	UG/KG	Toxaphene
45 U	UG/KG	PCB-1016 (Aroclor 1016)
91 U	UG/KG	PCB-1221 (Aroclor 1221)
45 U	UG/KG	PCB-1232 (Aroclor 1232)
45 U	UG/KG	PCB-1242 (Aroclor 1242)
45 U	UG/KG	PCB-1248 (Aroclor 1248)
45 U	UG/KG	PCB-1254 (Aroclor 1254)
45 U	UG/KG	PCB-1260 (Aroclor 1260)
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Sample **6779** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS15SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XT9
D No: 1XT9

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
3.9 U	UG/KG	Dieldrin
3.9 U	UG/KG	4,4'-DDE (p,p'-DDE)
11 U	UG/KG	Endrin
3.9 U	UG/KG	Endosulfan II (beta)
3.9 U	UG/KG	4,4'-DDD (p,p'-DDD)
3.9 U	UG/KG	Endosulfan Sulfate
30 NJ	UG/KG	4,4'-DDT (p,p'-DDT)
61 U	UG/KG	Methoxychlor
3.9 U	UG/KG	Endrin Ketone
27 NJ	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
39 U	UG/KG	PCB-1016 (Aroclor 1016)
80 U	UG/KG	PCB-1221 (Aroclor 1221)
39 U	UG/KG	PCB-1232 (Aroclor 1232)
39 U	UG/KG	PCB-1242 (Aroclor 1242)
39 U	UG/KG	PCB-1248 (Aroclor 1248)
39 U	UG/KG	PCB-1254 (Aroclor 1254)
39 U	UG/KG	PCB-1260 (Aroclor 1260)
16	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6780** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS15SB / — MD No: 1XW0 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XW0 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.2 U	UG/KG	Dieldrin
4.2 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.2 U	UG/KG	Endrin
4.2 U	UG/KG	Endosulfan II (beta)
4.2 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.2 U	UG/KG	Endosulfan Sulfate
4.2 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
4.2 U	UG/KG	Endrin Ketone
4.2 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
42 U	UG/KG	PCB-1016 (Aroclor 1016)
85 U	UG/KG	PCB-1221 (Aroclor 1221)
42 U	UG/KG	PCB-1232 (Aroclor 1232)
42 U	UG/KG	PCB-1242 (Aroclor 1242)
42 U	UG/KG	PCB-1248 (Aroclor 1248)
42 U	UG/KG	PCB-1254 (Aroclor 1254)
42 U	UG/KG	PCB-1260 (Aroclor 1260)
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Sample **6781** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS02SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XW1
D No: 1XW1

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:13
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.3 U	UG/KG	Dieldrin
4.3 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.3 U	UG/KG	Endrin
4.3 U	UG/KG	Endosulfan II (beta)
4.3 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.3 U	UG/KG	Endosulfan Sulfate
4.3 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
4.3 U	UG/KG	Endrin Ketone
4.3 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
43 U	UG/KG	PCB-1016 (Aroclor 1016)
87 U	UG/KG	PCB-1221 (Aroclor 1221)
43 U	UG/KG	PCB-1232 (Aroclor 1232)
43 U	UG/KG	PCB-1242 (Aroclor 1242)
43 U	UG/KG	PCB-1248 (Aroclor 1248)
43 U	UG/KG	PCB-1254 (Aroclor 1254)
43 U	UG/KG	PCB-1260 (Aroclor 1260)
23	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6782** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting — Flowood, MS

Program: SF — Case No: 31635

Id/Station: GS02SB / — MD No: 1XW2 — Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (> 12") — D No: 1XW2 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:34
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1 U	UG/KG	alpha-BHC
2.1 U	UG/KG	beta-BHC
2.1 U	UG/KG	delta-BHC
2.1 U	UG/KG	gamma-BHC (Lindane)
2.1 U	UG/KG	Heptachlor
2.1 U	UG/KG	Aldrin
2.1 U	UG/KG	Heptachlor Epoxide
2.1 U	UG/KG	Endosulfan I (alpha)
4.1 U	UG/KG	Dieldrin
4.1 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.1 U	UG/KG	Endrin
4.1 U	UG/KG	Endosulfan II (beta)
4.1 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.1 U	UG/KG	Endosulfan Sulfate
4.1 U	UG/KG	4,4'-DDT (p,p'-DDT)
21 U	UG/KG	Methoxychlor
4.1 U	UG/KG	Endrin Ketone
4.1 U	UG/KG	Endrin Aldehyde
2.1 U	UG/KG	alpha-Chlordane /2
2.1 U	UG/KG	gamma-Chlordane /2
210 U	UG/KG	Toxaphene
41 U	UG/KG	PCB-1016 (Aroclor 1016)
83 U	UG/KG	PCB-1221 (Aroclor 1221)
41 U	UG/KG	PCB-1232 (Aroclor 1232)
41 U	UG/KG	PCB-1242 (Aroclor 1242)
41 U	UG/KG	PCB-1248 (Aroclor 1248)
41 U	UG/KG	PCB-1254 (Aroclor 1254)
41 U	UG/KG	PCB-1260 (Aroclor 1260)
19	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6783** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS14SS / MD No: 1XW3 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XW3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
3.8 U	UG/KG	Dieldrin
3.8 U	UG/KG	4,4'-DDE (p,p'-DDE)
3.8 U	UG/KG	Endrin
3.8 U	UG/KG	Endosulfan II (beta)
3.8 U	UG/KG	4,4'-DDD (p,p'-DDD)
3.8 U	UG/KG	Endosulfan Sulfate
10 NJ	UG/KG	4,4'-DDT (p,p'-DDT)
34 NJ	UG/KG	Methoxychlor
3.8 U	UG/KG	Endrin Ketone
3.8 U	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
38 U	UG/KG	PCB-1016 (Aroclor 1016)
78 U	UG/KG	PCB-1221 (Aroclor 1221)
38 U	UG/KG	PCB-1232 (Aroclor 1232)
38 U	UG/KG	PCB-1242 (Aroclor 1242)
38 U	UG/KG	PCB-1248 (Aroclor 1248)
38 U	UG/KG	PCB-1254 (Aroclor 1254)
38 U	UG/KG	PCB-1260 (Aroclor 1260)
14	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6784** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting *Flowood, MS*

Program: SF

Id/Station: GS14SB /

Media: SUBSURFACE SOIL (> 12")

Case No: 31635

MD No: 1XW4

D No: 1XW4

Inorg Contractor: SENTIN

Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/22/2003 14:50

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
3.9 U	UG/KG	Dieldrin
3.9 U	UG/KG	4,4'-DDE (p,p'-DDE)
3.9 U	UG/KG	Endrin
3.9 U	UG/KG	Endosulfan II (beta)
3.9 U	UG/KG	4,4'-DDD (p,p'-DDD)
3.9 U	UG/KG	Endosulfan Sulfate
16 J	UG/KG	4,4'-DDT (p,p'-DDT)
43 U	UG/KG	Methoxychlor
3.9 U	UG/KG	Endrin Ketone
3.9 U	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
39 U	UG/KG	PCB-1016 (Aroclor 1016)
79 U	UG/KG	PCB-1221 (Aroclor 1221)
39 U	UG/KG	PCB-1232 (Aroclor 1232)
39 U	UG/KG	PCB-1242 (Aroclor 1242)
39 U	UG/KG	PCB-1248 (Aroclor 1248)
39 U	UG/KG	PCB-1254 (Aroclor 1254)
39 U	UG/KG	PCB-1260 (Aroclor 1260)
15	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6785** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF Case No: 31635

Id/Station: GS10SS / MD No: 1XW5 Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12") D No: 1XW5 Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/22/2003 15:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.9 U	UG/KG	alpha-BHC
12 U	UG/KG	beta-BHC
1.9 U	UG/KG	delta-BHC
1.9 U	UG/KG	gamma-BHC (Lindane)
1.9 U	UG/KG	Heptachlor
1.9 U	UG/KG	Aldrin
1.9 U	UG/KG	Heptachlor Epoxide
1.9 U	UG/KG	Endosulfan I (alpha)
3.8 U	UG/KG	Dieldrin
3.8 U	UG/KG	4,4'-DDE (p,p'-DDE)
15 U	UG/KG	Endrin
3.8 U	UG/KG	Endosulfan II (beta)
3.8 U	UG/KG	4,4'-DDD (p,p'-DDD)
3.8 U	UG/KG	Endosulfan Sulfate
43 J	UG/KG	4,4'-DDT (p,p'-DDT)
81 NJ	UG/KG	Methoxychlor
3.8 U	UG/KG	Endrin Ketone
3.8 U	UG/KG	Endrin Aldehyde
1.9 U	UG/KG	alpha-Chlordane /2
1.9 U	UG/KG	gamma-Chlordane /2
190 U	UG/KG	Toxaphene
38 U	UG/KG	PCB-1016 (Aroclor 1016)
76 U	UG/KG	PCB-1221 (Aroclor 1221)
38 U	UG/KG	PCB-1232 (Aroclor 1232)
38 U	UG/KG	PCB-1242 (Aroclor 1242)
38 U	UG/KG	PCB-1248 (Aroclor 1248)
38 U	UG/KG	PCB-1254 (Aroclor 1254)
38 U	UG/KG	PCB-1260 (Aroclor 1260)
12	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6786** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS10SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XW6
D No: 1XW6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
19 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
4.0 U	UG/KG	Dieldrin
4.0 U	UG/KG	4,4'-DDE (p,p'-DDE)
37 U	UG/KG	Endrin
4.0 U	UG/KG	Endosulfan II (beta)
8.7 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.0 U	UG/KG	Endosulfan Sulfate
110 N	UG/KG	4,4'-DDT (p,p'-DDT)
360 U	UG/KG	Methoxychlor
180 N	UG/KG	Endrin Ketone
15 U	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
40 U	UG/KG	PCB-1016 (Aroclor 1016)
81 U	UG/KG	PCB-1221 (Aroclor 1221)
40 U	UG/KG	PCB-1232 (Aroclor 1232)
40 U	UG/KG	PCB-1242 (Aroclor 1242)
40 U	UG/KG	PCB-1248 (Aroclor 1248)
40 U	UG/KG	PCB-1254 (Aroclor 1254)
40 U	UG/KG	PCB-1260 (Aroclor 1260)
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6787** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS02GW / MD No: 1XW7 Inorg Contractor: SENTIN
Media: GROUNDWATER D No: 1XW7 Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:55
Ending:

RESULTS	UNITS	ANALYTE
0.010 U	UG/L	alpha-BHC
0.010 U	UG/L	beta-BHC
0.010 U	UG/L	delta-BHC
0.010 U	UG/L	gamma-BHC (Lindane)
0.010 U	UG/L	Heptachlor
0.010 U	UG/L	Aldrin
0.010 U	UG/L	Heptachlor Epoxide
0.010 U	UG/L	Endosulfan I (alpha)
0.020 U	UG/L	Dieldrin
0.020 UJ	UG/L	4,4'-DDE (p,p'-DDE)
0.020 UJ	UG/L	Endrin
0.020 U	UG/L	Endosulfan II (beta)
0.020 UJ	UG/L	4,4'-DDD (p,p'-DDD)
0.020 U	UG/L	Endosulfan Sulfate
0.020 UJ	UG/L	4,4'-DDT (p,p'-DDT)
0.10 U	UG/L	Methoxychlor
0.020 UJ	UG/L	Endrin Ketone
0.020 UJ	UG/L	Endrin Aldehyde
0.010 U	UG/L	alpha-Chlordane /2
0.010 U	UG/L	gamma-Chlordane /2
1.0 U	UG/L	Toxaphene
0.20 U	UG/L	PCB-1016 (Aroclor 1016)
0.40 U	UG/L	PCB-1221 (Aroclor 1221)
0.20 U	UG/L	PCB-1232 (Aroclor 1232)
0.20 U	UG/L	PCB-1242 (Aroclor 1242)
0.20 U	UG/L	PCB-1248 (Aroclor 1248)
0.20 U	UG/L	PCB-1254 (Aroclor 1254)
0.20 U	UG/L	PCB-1260 (Aroclor 1260)

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6788** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS11SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XW8
D No: 1XW8

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.8 U	UG/KG	alpha-BHC
5.9 U	UG/KG	beta-BHC
1.8 U	UG/KG	delta-BHC
1.8 U	UG/KG	gamma-BHC (Lindane)
1.8 U	UG/KG	Heptachlor
1.8 U	UG/KG	Aldrin
1.8 U	UG/KG	Heptachlor Epoxide
1.8 U	UG/KG	Endosulfan I (alpha)
3.5 U	UG/KG	Dieldrin
3.5 U	UG/KG	4,4'-DDE (p,p'-DDE)
3.5 U	UG/KG	Endrin
3.5 U	UG/KG	Endosulfan II (beta)
3.5 U	UG/KG	4,4'-DDD (p,p'-DDD)
3.5 U	UG/KG	Endosulfan Sulfate
30 J	UG/KG	4,4'-DDT (p,p'-DDT)
54 U	UG/KG	Methoxychlor
3.5 U	UG/KG	Endrin Ketone
3.5 U	UG/KG	Endrin Aldehyde
1.8 U	UG/KG	alpha-Chlordane /2
1.8 U	UG/KG	gamma-Chlordane /2
180 U	UG/KG	Toxaphene
35 U	UG/KG	PCB-1016 (Aroclor 1016)
72 U	UG/KG	PCB-1221 (Aroclor 1221)
35 U	UG/KG	PCB-1232 (Aroclor 1232)
35 U	UG/KG	PCB-1242 (Aroclor 1242)
35 U	UG/KG	PCB-1248 (Aroclor 1248)
35 U	UG/KG	PCB-1254 (Aroclor 1254)
35 U	UG/KG	PCB-1260 (Aroclor 1260)
7.0	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample . **6789** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS11SB / MD No: 1XW9 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:10
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
4.0 U	UG/KG	Dieldrin
4.0 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.0 U	UG/KG	Endrin
4.0 U	UG/KG	Endosulfan II (beta)
4.0 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.0 U	UG/KG	Endosulfan Sulfate
4.0 U	UG/KG	4,4'-DDT (p,p'-DDT)
20 U	UG/KG	Methoxychlor
4.0 U	UG/KG	Endrin Ketone
4.0 U	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
40 U	UG/KG	PCB-1016 (Aroclor 1016)
81 U	UG/KG	PCB-1221 (Aroclor 1221)
40 U	UG/KG	PCB-1232 (Aroclor 1232)
40 U	UG/KG	PCB-1242 (Aroclor 1242)
40 U	UG/KG	PCB-1248 (Aroclor 1248)
40 U	UG/KG	PCB-1254 (Aroclor 1254)
40 U	UG/KG	PCB-1260 (Aroclor 1260)
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6790** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS09SS / MD No: 1XX0 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.3 U	UG/KG	alpha-BHC
2.3 U	UG/KG	beta-BHC
2.3 U	UG/KG	delta-BHC
2.3 U	UG/KG	gamma-BHC (Lindane)
2.3 U	UG/KG	Heptachlor
2.3 U	UG/KG	Aldrin
2.3 U	UG/KG	Heptachlor Epoxide
2.3 U	UG/KG	Endosulfan I (alpha)
4.5 U	UG/KG	Dieldrin
4.5 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.5 U	UG/KG	Endrin
4.5 U	UG/KG	Endosulfan II (beta)
4.5 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.5 U	UG/KG	Endosulfan Sulfate
4.5 U	UG/KG	4,4'-DDT (p,p'-DDT)
23 U	UG/KG	Methoxychlor
4.5 U	UG/KG	Endrin Ketone
4.5 U	UG/KG	Endrin Aldehyde
2.3 U	UG/KG	alpha-Chlordane /2
2.3 U	UG/KG	gamma-Chlordane /2
230 U	UG/KG	Toxaphene
45 U	UG/KG	PCB-1016 (Aroclor 1016)
91 U	UG/KG	PCB-1221 (Aroclor 1221)
45 U	UG/KG	PCB-1232 (Aroclor 1232)
45 U	UG/KG	PCB-1242 (Aroclor 1242)
45 U	UG/KG	PCB-1248 (Aroclor 1248)
45 U	UG/KG	PCB-1254 (Aroclor 1254)
45 U	UG/KG	PCB-1260 (Aroclor 1260)
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6791** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS09SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XX1
D No: 1XX1

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:25
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.2 U	UG/KG	Dieldrin
4.2 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.2 U	UG/KG	Endrin
4.2 U	UG/KG	Endosulfan II (beta)
4.2 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.2 U	UG/KG	Endosulfan Sulfate
4.2 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
4.2 U	UG/KG	Endrin Ketone
4.2 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
42 U	UG/KG	PCB-1016 (Aroclor 1016)
85 U	UG/KG	PCB-1221 (Aroclor 1221)
42 U	UG/KG	PCB-1232 (Aroclor 1232)
42 U	UG/KG	PCB-1242 (Aroclor 1242)
42 U	UG/KG	PCB-1248 (Aroclor 1248)
42 U	UG/KG	PCB-1254 (Aroclor 1254)
42 U	UG/KG	PCB-1260 (Aroclor 1260)
21	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6792** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS06SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XX2
D No: 1XX2

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1 U	UG/KG	alpha-BHC
2.1 U	UG/KG	beta-BHC
2.1 U	UG/KG	delta-BHC
2.1 U	UG/KG	gamma-BHC (Lindane)
2.1 U	UG/KG	Heptachlor
2.1 U	UG/KG	Aldrin
2.1 U	UG/KG	Heptachlor Epoxide
2.1 U	UG/KG	Endosulfan I (alpha)
4.1 U	UG/KG	Dieldrin
4.1 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.1 U	UG/KG	Endrin
4.1 U	UG/KG	Endosulfan II (beta)
4.1 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.1 U	UG/KG	Endosulfan Sulfate
4.1 U	UG/KG	4,4'-DDT (p,p'-DDT)
21 U	UG/KG	Methoxychlor
4.1 U	UG/KG	Endrin Ketone
4.1 U	UG/KG	Endrin Aldehyde
2.1 U	UG/KG	alpha-Chlordane /2
2.1 U	UG/KG	gamma-Chlordane /2
210 U	UG/KG	Toxaphene
41 U	UG/KG	PCB-1016 (Aroclor 1016)
84 U	UG/KG	PCB-1221 (Aroclor 1221)
41 U	UG/KG	PCB-1232 (Aroclor 1232)
41 U	UG/KG	PCB-1242 (Aroclor 1242)
41 U	UG/KG	PCB-1248 (Aroclor 1248)
41 U	UG/KG	PCB-1254 (Aroclor 1254)
41 U	UG/KG	PCB-1260 (Aroclor 1260)
20	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Sample **6793** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS08SD / MD No: 1XX3 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XX3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1 U	UG/KG	alpha-BHC
2.1 U	UG/KG	beta-BHC
2.1 U	UG/KG	delta-BHC
2.1 U	UG/KG	gamma-BHC (Lindane)
2.1 U	UG/KG	Heptachlor
2.1 U	UG/KG	Aldrin
2.1 U	UG/KG	Heptachlor Epoxide
2.1 U	UG/KG	Endosulfan I (alpha)
4.1 U	UG/KG	Dieldrin
4.1 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.1 U	UG/KG	Endrin
4.1 U	UG/KG	Endosulfan II (beta)
4.1 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.1 U	UG/KG	Endosulfan Sulfate
4.1 U	UG/KG	4,4'-DDT (p,p'-DDT)
21 U	UG/KG	Methoxychlor
4.1 U	UG/KG	Endrin Ketone
4.1 U	UG/KG	Endrin Aldehyde
2.1 U	UG/KG	alpha-Chlordane /2
2.1 U	UG/KG	gamma-Chlordane /2
210 U	UG/KG	Toxaphene
41 U	UG/KG	PCB-1016 (Aroclor 1016)
83 U	UG/KG	PCB-1221 (Aroclor 1221)
41 U	UG/KG	PCB-1232 (Aroclor 1232)
41 U	UG/KG	PCB-1242 (Aroclor 1242)
41 U	UG/KG	PCB-1248 (Aroclor 1248)
41 U	UG/KG	PCB-1254 (Aroclor 1254)
41 U	UG/KG	PCB-1260 (Aroclor 1260)
19	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6794** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF Case No: 31635

Id/Station: GS22SS / MD No: 1XX4 Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12") D No: 1XX4 Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/22/2003 16:42

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U-	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
3.8 U	UG/KG	Dieldrin
3.8 U	UG/KG	4,4'-DDE (p,p'-DDE)
3.8 U	UG/KG	Endrin
3.8 U	UG/KG	Endosulfan II (beta)
3.8 U	UG/KG	4,4'-DDD (p,p'-DDD)
3.8 U	UG/KG	Endosulfan Sulfate
3.8 U	UG/KG	4,4'-DDT (p,p'-DDT)
20 U	UG/KG	Methoxychlor
3.8 U	UG/KG	Endrin Ketone
3.8 U	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
38 U	UG/KG	PCB-1016 (Aroclor 1016)
77 U	UG/KG	PCB-1221 (Aroclor 1221)
38 U	UG/KG	PCB-1232 (Aroclor 1232)
38 U	UG/KG	PCB-1242 (Aroclor 1242)
38 U	UG/KG	PCB-1248 (Aroclor 1248)
38 U	UG/KG	PCB-1254 (Aroclor 1254)
38 U	UG/KG	PCB-1260 (Aroclor 1260)
13	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6795** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS06SS / MD No: 1XX5 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.3 U	UG/KG	alpha-BHC
2.3 U	UG/KG	beta-BHC
2.3 U	UG/KG	delta-BHC
2.3 U	UG/KG	gamma-BHC (Lindane)
2.3 U	UG/KG	Heptachlor
2.3 U	UG/KG	Aldrin
2.3 U	UG/KG	Heptachlor Epoxide
2.3 U	UG/KG	Endosulfan I (alpha)
4.5 U	UG/KG	Dieldrin
4.5 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.5 U	UG/KG	Endrin
4.5 U	UG/KG	Endosulfan II (beta)
4.5 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.5 U	UG/KG	Endosulfan Sulfate
4.5 U	UG/KG	4,4'-DDT (p,p'-DDT)
23 U	UG/KG	Methoxychlor
4.5 U	UG/KG	Endrin Ketone
4.5 U	UG/KG	Endrin Aldehyde
2.3 U	UG/KG	alpha-Chlordane /2
2.3 U	UG/KG	gamma-Chlordane /2
230 U	UG/KG	Toxaphene
45 U	UG/KG	PCB-1016 (Aroclor 1016)
91 U	UG/KG	PCB-1221 (Aroclor 1221)
45 U	UG/KG	PCB-1232 (Aroclor 1232)
45 U	UG/KG	PCB-1242 (Aroclor 1242)
45 U	UG/KG	PCB-1248 (Aroclor 1248)
45 U	UG/KG	PCB-1254 (Aroclor 1254)
45 U	UG/KG	PCB-1260 (Aroclor 1260)
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6796** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS06SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XX6
D No: 1XX6

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.3 U	UG/KG	alpha-BHC
2.3 U	UG/KG	beta-BHC
2.3 U	UG/KG	delta-BHC
2.3 U	UG/KG	gamma-BHC (Lindane)
2.3 U	UG/KG	Heptachlor
2.3 U	UG/KG	Aldrin
2.3 U	UG/KG	Heptachlor Epoxide
2.3 U	UG/KG	Endosulfan I (alpha)
4.5 U	UG/KG	Dieldrin
4.5 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.5 U	UG/KG	Endrin
4.5 U	UG/KG	Endosulfan II (beta)
4.5 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.5 U	UG/KG	Endosulfan Sulfate
4.5 U	UG/KG	4,4'-DDT (p,p'-DDT)
23 U	UG/KG	Methoxychlor
4.5 U	UG/KG	Endrin Ketone
4.5 U	UG/KG	Endrin Aldehyde
2.3 U	UG/KG	alpha-Chlordane /2
2.3 U	UG/KG	gamma-Chlordane /2
230 U	UG/KG	Toxaphene
45 U	UG/KG	PCB-1016 (Aroclor 1016)
91 U	UG/KG	PCB-1221 (Aroclor 1221)
45 U	UG/KG	PCB-1232 (Aroclor 1232)
45 U	UG/KG	PCB-1242 (Aroclor 1242)
45 U	UG/KG	PCB-1248 (Aroclor 1248)
45 U	UG/KG	PCB-1254 (Aroclor 1254)
45 U	UG/KG	PCB-1260 (Aroclor 1260)
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6797** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS24SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XX7
D No: 1XX7

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
3.1 U	UG/KG	alpha-BHC
5.3 U	UG/KG	beta-BHC
3.1 U	UG/KG	delta-BHC
3.1 U	UG/KG	gamma-BHC (Lindane)
3.1 U	UG/KG	Heptachlor
3.1 U	UG/KG	Aldrin
3.1 U	UG/KG	Heptachlor Epoxide
3.1 U	UG/KG	Endosulfan I (alpha)
6.0 U	UG/KG	Dieldrin
6.0 U	UG/KG	4,4'-DDE (p,p'-DDE)
6.0 U	UG/KG	Endrin
6.0 U	UG/KG	Endosulfan II (beta)
6.0 U	UG/KG	4,4'-DDD (p,p'-DDD)
6.0 U	UG/KG	Endosulfan Sulfate
6.0 U	UG/KG	4,4'-DDT (p,p'-DDT)
31 U	UG/KG	Methoxychlor
6.0 U	UG/KG	Endrin Ketone
6.0 U	UG/KG	Endrin Aldehyde
3.1 U	UG/KG	alpha-Chlordane /2
3.1 U	UG/KG	gamma-Chlordane /2
310 U	UG/KG	Toxaphene
60 U	UG/KG	PCB-1016 (Aroclor 1016)
120 U	UG/KG	PCB-1221 (Aroclor 1221)
60 U	UG/KG	PCB-1232 (Aroclor 1232)
60 U	UG/KG	PCB-1242 (Aroclor 1242)
60 U	UG/KG	PCB-1248 (Aroclor 1248)
60 U	UG/KG	PCB-1254 (Aroclor 1254)
60 U	UG/KG	PCB-1260 (Aroclor 1260)
45	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Sample **6798** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS12SS / MD No: 1XX9 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
4.0 U	UG/KG	Dieldrin
4.0 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.0 U	UG/KG	Endrin
4.0 U	UG/KG	Endosulfan II (beta)
4.0 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.0 U	UG/KG	Endosulfan Sulfate
4.0 U	UG/KG	4,4'-DDT (p,p'-DDT)
20 U	UG/KG	Methoxychlor
4.0 U	UG/KG	Endrin Ketone
4.0 U	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
40 U	UG/KG	PCB-1016 (Aroclor 1016)
81 U	UG/KG	PCB-1221 (Aroclor 1221)
40 U	UG/KG	PCB-1232 (Aroclor 1232)
40 U	UG/KG	PCB-1242 (Aroclor 1242)
40 U	UG/KG	PCB-1248 (Aroclor 1248)
40 U	UG/KG	PCB-1254 (Aroclor 1254)
40 U	UG/KG	PCB-1260 (Aroclor 1260)
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6799** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS12SB / MD No: 1XY0 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XY0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.3 U	UG/KG	alpha-BHC
2.3 U	UG/KG	beta-BHC
2.3 U	UG/KG	delta-BHC
2.3 U	UG/KG	gamma-BHC (Lindane)
2.3 U	UG/KG	Heptachlor
2.3 U	UG/KG	Aldrin
2.3 U	UG/KG	Heptachlor Epoxide
2.3 U	UG/KG	Endosulfan I (alpha)
4.5 U	UG/KG	Dieldrin
4.5 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.5 U	UG/KG	Endrin
4.5 U	UG/KG	Endosulfan II (beta)
4.5 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.5 U	UG/KG	Endosulfan Sulfate
4.5 U	UG/KG	4,4'-DDT (p,p'-DDT)
23 U	UG/KG	Methoxychlor
4.5 U	UG/KG	Endrin Ketone
4.5 U	UG/KG	Endrin Aldehyde
2.3 U	UG/KG	alpha-Chlordane /2
2.3 U	UG/KG	gamma-Chlordane /2
230 U	UG/KG	Toxaphene
45 U	UG/KG	PCB-1016 (Aroclor 1016)
91 U	UG/KG	PCB-1221 (Aroclor 1221)
45 U	UG/KG	PCB-1232 (Aroclor 1232)
45 U	UG/KG	PCB-1242 (Aroclor 1242)
45 U	UG/KG	PCB-1248 (Aroclor 1248)
45 U	UG/KG	PCB-1254 (Aroclor 1254)
45 U	UG/KG	PCB-1260 (Aroclor 1260)
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Sample **6800** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS03SS /
Media: SURFACE SOIL (0" - 12")
MD No: 1XY1 Inorg Contractor: SENTIN
D No: 1XY1 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.3 U	UG/KG	Dieldrin
4.3 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.3 U	UG/KG	Endrin
4.3 U	UG/KG	Endosulfan II (beta)
4.3 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.3 U	UG/KG	Endosulfan Sulfate
4.3 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
4.3 U	UG/KG	Endrin Ketone
4.3 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
43 U	UG/KG	PCB-1016 (Aroclor 1016)
88 U	UG/KG	PCB-1221 (Aroclor 1221)
43 U	UG/KG	PCB-1232 (Aroclor 1232)
43 U	UG/KG	PCB-1242 (Aroclor 1242)
43 U	UG/KG	PCB-1248 (Aroclor 1248)
43 U	UG/KG	PCB-1254 (Aroclor 1254)
43 U	UG/KG	PCB-1260 (Aroclor 1260)
24	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Sample **6801** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: GS03SB /

Media: SUBSURFACE SOIL (> 12")

Case No: 31635

MD No: 1XY2

D No: 1XY2

Inorg Contractor: SENTIN

Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/23/2003 07:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.4 U	UG/KG	alpha-BHC
2.4 U	UG/KG	beta-BHC
2.4 U	UG/KG	delta-BHC
2.4 U	UG/KG	gamma-BHC (Lindane)
2.4 U	UG/KG	Heptachlor
2.4 U	UG/KG	Aldrin
2.4 U	UG/KG	Heptachlor Epoxide
2.4 U	UG/KG	Endosulfan I (alpha)
4.6 U	UG/KG	Dieldrin
4.6 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.6 U	UG/KG	Endrin
4.6 U	UG/KG	Endosulfan II (beta)
4.6 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.6 U	UG/KG	Endosulfan Sulfate
4.6 U	UG/KG	4,4'-DDT (p,p'-DDT)
24 U	UG/KG	Methoxychlor
4.6 U	UG/KG	Endrin Ketone
4.6 U	UG/KG	Endrin Aldehyde
2.4 U	UG/KG	alpha-Chlordane /2
2.4 U	UG/KG	gamma-Chlordane /2
240 U	UG/KG	Toxaphene
46 U	UG/KG	PCB-1016 (Aroclor 1016)
93 U	UG/KG	PCB-1221 (Aroclor 1221)
46 U	UG/KG	PCB-1232 (Aroclor 1232)
46 U	UG/KG	PCB-1242 (Aroclor 1242)
46 U	UG/KG	PCB-1248 (Aroclor 1248)
46 U	UG/KG	PCB-1254 (Aroclor 1254)
46 U	UG/KG	PCB-1260 (Aroclor 1260)
28	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6802** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS08SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XY3
D No: 1XY3

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:10
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.8 U	UG/KG	alpha-BHC
1.8 U	UG/KG	beta-BHC
1.8 U	UG/KG	delta-BHC
1.8 U	UG/KG	gamma-BHC (Lindane)
1.8 U	UG/KG	Heptachlor
1.8 U	UG/KG	Aldrin
1.8 U	UG/KG	Heptachlor Epoxide
1.8 U	UG/KG	Endosulfan I (alpha)
3.4 U	UG/KG	Dieldrin
13 U	UG/KG	4,4'-DDE (p,p'-DDE)
10 U	UG/KG	Endrin
3.4 U	UG/KG	Endosulfan II (beta)
3.4 U	UG/KG	4,4'-DDD (p,p'-DDD)
3.4 U	UG/KG	Endosulfan Sulfate
41 J	UG/KG	4,4'-DDT (p,p'-DDT)
74 NJ	UG/KG	Methoxychlor
24 U	UG/KG	Endrin Ketone
17 J	UG/KG	Endrin Aldehyde
1.8 U	UG/KG	alpha-Chlordane /2
1.8 U	UG/KG	gamma-Chlordane /2
180 U	UG/KG	Toxaphene
34 U	UG/KG	PCB-1016 (Aroclor 1016)
70 U	UG/KG	PCB-1221 (Aroclor 1221)
34 U	UG/KG	PCB-1232 (Aroclor 1232)
34 U	UG/KG	PCB-1242 (Aroclor 1242)
34 U	UG/KG	PCB-1248 (Aroclor 1248)
34 U	UG/KG	PCB-1254 (Aroclor 1254)
34 U	UG/KG	PCB-1260 (Aroclor 1260)
4	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Sample **6804** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF

Id/Station: GS08SB /

Media: SUBSURFACE SOIL (> 12")

Case No: 31635

MD No: 1XY4

D No: 1XY4

Inorg Contractor: SENTIN

Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/23/2003 08:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
4.0 U	UG/KG	Dieldrin
4.0 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.0 U	UG/KG	Endrin
4.0 U	UG/KG	Endosulfan II (beta)
4.0 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.0 U	UG/KG	Endosulfan Sulfate
4.0 U	UG/KG	4,4'-DDT (p,p'-DDT)
20 U	UG/KG	Methoxychlor
4.0 U	UG/KG	Endrin Ketone
4.0 U	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
40 U	UG/KG	PCB-1016 (Aroclor 1016)
81 U	UG/KG	PCB-1221 (Aroclor 1221)
40 U	UG/KG	PCB-1232 (Aroclor 1232)
40 U	UG/KG	PCB-1242 (Aroclor 1242)
40 U	UG/KG	PCB-1248 (Aroclor 1248)
40 U	UG/KG	PCB-1254 (Aroclor 1254)
40 U	UG/KG	PCB-1260 (Aroclor 1260)
17	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Sample **6805** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS07SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XY5
D No: 1XY5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
3.9 U	UG/KG	Dieldrin
6.4 U	UG/KG	4,4'-DDE (p,p'-DDE)
7.1 U	UG/KG	Endrin
3.9 U	UG/KG	Endosulfan II (beta)
3.9 U	UG/KG	4,4'-DDD (p,p'-DDD)
3.9 U	UG/KG	Endosulfan Sulfate
12 J	UG/KG	4,4'-DDT (p,p'-DDT)
47 U	UG/KG	Methoxychlor
20 U	UG/KG	Endrin Ketone
3.9 U	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
39 U	UG/KG	PCB-1016 (Aroclor 1016)
79 U	UG/KG	PCB-1221 (Aroclor 1221)
39 U	UG/KG	PCB-1232 (Aroclor 1232)
39 U	UG/KG	PCB-1242 (Aroclor 1242)
39 U	UG/KG	PCB-1248 (Aroclor 1248)
39 U	UG/KG	PCB-1254 (Aroclor 1254)
39 U	UG/KG	PCB-1260 (Aroclor 1260)
15	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6806** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS07SB / MD No: 1XY6 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XY6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.3 U	UG/KG	alpha-BHC
2.3 U	UG/KG	beta-BHC
2.3 U	UG/KG	delta-BHC
2.3 U	UG/KG	gamma-BHC (Lindane)
2.3 U	UG/KG	Heptachlor
2.3 U	UG/KG	Aldrin
2.3 U	UG/KG	Heptachlor Epoxide
2.3 U	UG/KG	Endosulfan I (alpha)
4.5 U	UG/KG	Dieldrin
4.5 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.5 U	UG/KG	Endrin
4.5 U	UG/KG	Endosulfan II (beta)
4.5 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.5 U	UG/KG	Endosulfan Sulfate
4.5 U	UG/KG	4,4'-DDT (p,p'-DDT)
23 U	UG/KG	Methoxychlor
4.5 U	UG/KG	Endrin Ketone
4.5 U	UG/KG	Endrin Aldehyde
2.3 U	UG/KG	alpha-Chlordane /2
2.3 U	UG/KG	gamma-Chlordane /2
230 U	UG/KG	Toxaphene
45 U	UG/KG	PCB-1016 (Aroclor 1016)
91 U	UG/KG	PCB-1221 (Aroclor 1221)
45 U	UG/KG	PCB-1232 (Aroclor 1232)
45 U	UG/KG	PCB-1242 (Aroclor 1242)
45 U	UG/KG	PCB-1248 (Aroclor 1248)
45 U	UG/KG	PCB-1254 (Aroclor 1254)
45 U	UG/KG	PCB-1260 (Aroclor 1260)
26	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6807** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS04SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XY7
D No: 1XY7

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.3 U	UG/KG	Dieldrin
4.3 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.3 U	UG/KG	Endrin
4.3 U	UG/KG	Endosulfan II (beta)
4.3 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.3 U	UG/KG	Endosulfan Sulfate
4.3 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
4.3 U	UG/KG	Endrin Ketone
4.3 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
43 U	UG/KG	PCB-1016 (Aroclor 1016)
88 U	UG/KG	PCB-1221 (Aroclor 1221)
43 U	UG/KG	PCB-1232 (Aroclor 1232)
43 U	UG/KG	PCB-1242 (Aroclor 1242)
43 U	UG/KG	PCB-1248 (Aroclor 1248)
43 U	UG/KG	PCB-1254 (Aroclor 1254)
43 U	UG/KG	PCB-1260 (Aroclor 1260)
24	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6808** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS04SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XY8
D No: 1XY8

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.2 U	UG/KG	alpha-BHC
2.2 U	UG/KG	beta-BHC
2.2 U	UG/KG	delta-BHC
2.2 U	UG/KG	gamma-BHC (Lindane)
2.2 U	UG/KG	Heptachlor
2.2 U	UG/KG	Aldrin
2.2 U	UG/KG	Heptachlor Epoxide
2.2 U	UG/KG	Endosulfan I (alpha)
4.3 U	UG/KG	Dieldrin
4.3 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.3 U	UG/KG	Endrin
4.3 U	UG/KG	Endosulfan II (beta)
4.3 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.3 U	UG/KG	Endosulfan Sulfate
4.3 U	UG/KG	4,4'-DDT (p,p'-DDT)
22 U	UG/KG	Methoxychlor
4.3 U	UG/KG	Endrin Ketone
4.3 U	UG/KG	Endrin Aldehyde
2.2 U	UG/KG	alpha-Chlordane /2
2.2 U	UG/KG	gamma-Chlordane /2
220 U	UG/KG	Toxaphene
43 U	UG/KG	PCB-1016 (Aroclor 1016)
87 U	UG/KG	PCB-1221 (Aroclor 1221)
43 U	UG/KG	PCB-1232 (Aroclor 1232)
43 U	UG/KG	PCB-1242 (Aroclor 1242)
43 U	UG/KG	PCB-1248 (Aroclor 1248)
43 U	UG/KG	PCB-1254 (Aroclor 1254)
43 U	UG/KG	PCB-1260 (Aroclor 1260)
23	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Sample **6809** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS05SS / MD No: 1XY9 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0 U	UG/KG	alpha-BHC
2.0 U	UG/KG	beta-BHC
2.0 U	UG/KG	delta-BHC
2.0 U	UG/KG	gamma-BHC (Lindane)
2.0 U	UG/KG	Heptachlor
2.0 U	UG/KG	Aldrin
2.0 U	UG/KG	Heptachlor Epoxide
2.0 U	UG/KG	Endosulfan I (alpha)
3.9 U	UG/KG	Dieldrin
9.9 U	UG/KG	4,4'-DDE (p,p'-DDE)
12 U	UG/KG	Endrin
3.9 U	UG/KG	Endosulfan II (beta)
3.9 U	UG/KG	4,4'-DDD (p,p'-DDD)
3.9 U	UG/KG	Endosulfan Sulfate
4.0 U	UG/KG	4,4'-DDT (p,p'-DDT)
48 U	UG/KG	Methoxychlor
17 U	UG/KG	Endrin Ketone
18 J	UG/KG	Endrin Aldehyde
2.0 U	UG/KG	alpha-Chlordane /2
2.0 U	UG/KG	gamma-Chlordane /2
200 U	UG/KG	Toxaphene
39 U	UG/KG	PCB-1016 (Aroclor 1016)
79 U	UG/KG	PCB-1221 (Aroclor 1221)
39 U	UG/KG	PCB-1232 (Aroclor 1232)
39 U	UG/KG	PCB-1242 (Aroclor 1242)
39 U	UG/KG	PCB-1248 (Aroclor 1248)
39 U	UG/KG	PCB-1254 (Aroclor 1254)
39 U	UG/KG	PCB-1260 (Aroclor 1260)
15	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6810** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS05SB /
Media: SUBSURFACE SOIL (> 12") MD No: 1XZ0 Inorg Contractor: SENTIN
D No: 1XZ0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:25
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1 U	UG/KG	alpha-BHC
2.1 U	UG/KG	beta-BHC
2.1 U	UG/KG	delta-BHC
2.1 U	UG/KG	gamma-BHC (Lindane)
2.1 U	UG/KG	Heptachlor
2.1 U	UG/KG	Aldrin
2.1 U	UG/KG	Heptachlor Epoxide
2.1 U	UG/KG	Endosulfan I (alpha)
4.1 U	UG/KG	Dieldrin
4.1 U	UG/KG	4,4'-DDE (p,p'-DDE)
4.1 U	UG/KG	Endrin
4.1 U	UG/KG	Endosulfan II (beta)
4.1 U	UG/KG	4,4'-DDD (p,p'-DDD)
4.1 U	UG/KG	Endosulfan Sulfate
4.1 U	UG/KG	4,4'-DDT (p,p'-DDT)
21 U	UG/KG	Methoxychlor
4.1 U	UG/KG	Endrin Ketone
4.1 U	UG/KG	Endrin Aldehyde
2.1 U	UG/KG	alpha-Chlordane /2
2.1 U	UG/KG	gamma-Chlordane /2
210 U	UG/KG	Toxaphene
41 U	UG/KG	PCB-1016 (Aroclor 1016)
83 U	UG/KG	PCB-1221 (Aroclor 1221)
41 U	UG/KG	PCB-1232 (Aroclor 1232)
41 U	UG/KG	PCB-1242 (Aroclor 1242)
41 U	UG/KG	PCB-1248 (Aroclor 1248)
41 U	UG/KG	PCB-1254 (Aroclor 1254)
41 U	UG/KG	PCB-1260 (Aroclor 1260)
19	%	% Moisture

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

PESTICIDES/PCB SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/20/2003 14:11**

Sample **6811** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS03GW /
Media: GROUNDWATER

Case No: 31635
MD No: 1XZ1
D No: 1XZ1

Inorg Contractor: SENTIN
Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:55
Ending:

RESULTS	UNITS	ANALYTE
0.010 U	UG/L	alpha-BHC
0.010 U	UG/L	beta-BHC
0.010 U	UG/L	delta-BHC
0.010 U	UG/L	gamma-BHC (Lindane)
0.010 U	UG/L	Heptachlor
0.010 U	UG/L	Aldrin
0.010 U	UG/L	Heptachlor Epoxide
0.010 U	UG/L	Endosulfan I (alpha)
0.020 U	UG/L	Dieldrin
0.020 UJ	UG/L	4,4'-DDE (p,p'-DDE)
0.020 UJ	UG/L	Endrin
0.020 U	UG/L	Endosulfan II (beta)
0.020 UJ	UG/L	4,4'-DDD (p,p'-DDD)
0.020 U	UG/L	Endosulfan Sulfate
0.020 UJ	UG/L	4,4'-DDT (p,p'-DDT)
0.10 U	UG/L	Methoxychlor
0.020 UJ	UG/L	Endrin Ketone
0.020 UJ	UG/L	Endrin Aldehyde
0.010 U	UG/L	alpha-Chlordane /2
0.010 U	UG/L	gamma-Chlordane /2
1.0 U	UG/L	Toxaphene
0.20 U	UG/L	PCB-1016 (Aroclor 1016)
0.40 U	UG/L	PCB-1221 (Aroclor 1221)
0.20 U	UG/L	PCB-1232 (Aroclor 1232)
0.20 U	UG/L	PCB-1242 (Aroclor 1242)
0.20 U	UG/L	PCB-1248 (Aroclor 1248)
0.20 U	UG/L	PCB-1254 (Aroclor 1254)
0.20 U	UG/L	PCB-1260 (Aroclor 1260)

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Sample **6812** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS04GW /
Media: GROUNDWATER
Case No: 31635
MD No: 1XZ3
D No: 1XZ3
Inorg Contractor: SENTIN
Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 13:20
Ending:

RESULTS	UNITS	ANALYTE
0.010 U	UG/L	alpha-BHC
0.010 U	UG/L	beta-BHC
0.010 U	UG/L	delta-BHC
0.010 U	UG/L	gamma-BHC (Lindane)
0.010 U	UG/L	Heptachlor
0.010 U	UG/L	Aldrin
0.010 U	UG/L	Heptachlor Epoxide
0.010 U	UG/L	Endosulfan I (alpha)
0.020 U	UG/L	Dieldrin
0.020 UJ	UG/L	4,4'-DDE (p,p'-DDE)
0.020 UJ	UG/L	Endrin
0.020 U	UG/L	Endosulfan II (beta)
0.020 UJ	UG/L	4,4'-DDD (p,p'-DDD)
0.020 U	UG/L	Endosulfan Sulfate
0.020 UJ	UG/L	4,4'-DDT (p,p'-DDT)
0.10 U	UG/L	Methoxychlor
0.020 UJ	UG/L	Endrin Ketone
0.020 UJ	UG/L	Endrin Aldehyde
0.010 U	UG/L	alpha-Chlordane /2
0.010 U	UG/L	gamma-Chlordane /2
1.0 U	UG/L	Toxaphene
0.20 U	UG/L	PCB-1016 (Aroclor 1016)
0.40 U	UG/L	PCB-1221 (Aroclor 1221)
0.20 U	UG/L	PCB-1232 (Aroclor 1232)
0.20 U	UG/L	PCB-1242 (Aroclor 1242)
0.20 U	UG/L	PCB-1248 (Aroclor 1248)
0.20 U	UG/L	PCB-1254 (Aroclor 1254)
0.20 U	UG/L	PCB-1260 (Aroclor 1260)

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

Sample **6813** FY **2003** Project: **03-0474**

Pesticides Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS05GW /
Media: GROUNDWATER

Case No: 31635
MD No: 1XZ4
D No: 1XZ4

Inorg Contractor: SENTIN
Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 11:45
Ending:

RESULTS	UNITS	ANALYTE
0.010 U	UG/L	alpha-BHC
0.010 U	UG/L	beta-BHC
0.010 U	UG/L	delta-BHC
0.010 U	UG/L	gamma-BHC (Lindane)
0.010 U	UG/L	Heptachlor
0.010 U	UG/L	Aldrin
0.010 U	UG/L	Heptachlor Epoxide
0.010 U	UG/L	Endosulfan I (alpha)
0.020 U	UG/L	Dieldrin
0.020 UJ	UG/L	4,4'-DDE (p,p'-DDE)
0.020 UJ	UG/L	Endrin
0.020 U	UG/L	Endosulfan II (beta)
0.020 UJ	UG/L	4,4'-DDD (p,p'-DDD)
0.020 U	UG/L	Endosulfan Sulfate
0.020 UJ	UG/L	4,4'-DDT (p,p'-DDT)
0.10 U	UG/L	Methoxychlor
0.020 UJ	UG/L	Endrin Ketone
0.020 UJ	UG/L	Endrin Aldehyde
0.010 U	UG/L	alpha-Chlordane /2
0.010 U	UG/L	gamma-Chlordane /2
1.0 U	UG/L	Toxaphene
0.20 U	UG/L	PCB-1016 (Aroclor 1016)
0.40 U	UG/L	PCB-1221 (Aroclor 1221)
0.20 U	UG/L	PCB-1232 (Aroclor 1232)
0.20 U	UG/L	PCB-1242 (Aroclor 1242)
0.20 U	UG/L	PCB-1248 (Aroclor 1248)
0.20 U	UG/L	PCB-1254 (Aroclor 1254)
0.20 U	UG/L	PCB-1260 (Aroclor 1260)

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.
C-confirmed by GCMS | /1-when no value is reported, see chlordane constituents | /2-constituents or metabolites of technical chlordane

May 21, 2003

INORGANIC DATA QUALIFIERS REPORT

Case Number: 31635
Project Number: 03-0474
Site: Gulf States Creosoting, Flowood, MS

Sample No.	Element	Flag	Reason
6754	Al	J	Serial dilution percent difference = 10.8%
	Sb	J	Matrix spike recovery = 45.5%
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Se	R	Analyte reported as potential false positive
	Ag	R	Analyte reported as potential false positive
6755	Al	J	Serial dilution percent difference = 10.8%
	Sb	J	Matrix spike recovery = 45.5%
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Ag	R	Analyte reported as potential false positive
6756	Al	J	Serial dilution percent difference = 10.8%
	Sb	UJ	Matrix spike recovery = 45.5% Baseline instability in cal blanks
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
6757	Al	J	Serial dilution percent difference = 10.8%
	Sb	UJ	Matrix spike recovery = 45.5% Baseline instability in cal blanks
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Se	J	% RSD > 20% for ICP multiple exposures
6758	Al	J	Serial dilution percent difference = 10.8%
	Sb	UJ	Matrix spike recovery = 45.5% Baseline instability in cal blanks
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Ag	R	Analyte reported as potential false positive

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

MEMORANDUM

Date: 06/05/2003

Subject: Results of METALS Sample Analysis
03-0474 Gulf States Creosoting
Flowood, MS

From: Goddard, Denise

To: Striggow, Brian

Thru: QA Office

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

May 21, 2003

INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 31635
Project Number: 03-0474
Site: Gulf States Creosoting, Flowood, MS

Sample No.	Element	Flag	Reason
6759	Al	J	Serial dilution percent difference = 10.8%
	Sb	UJ	Matrix spike recovery = 45.5%
			Baseline instability in cal blanks
	As	R	Analyte reported as potential false positive
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Ag	R	Analyte reported as potential false positive
6760	Al	J	Serial dilution percent difference = 10.8%
	Sb	UJ	Matrix spike recovery = 45.5%
			Baseline instability in cal blanks
	Cd	R	Analyte reported as potential false positive
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Se	J	% RSD > 20% for ICP multiple exposures
	Ag	R	Analyte reported as potential false positive
6761	Al	J	Serial dilution percent difference = 10.8%
	Sb	UJ	Matrix spike recovery = 45.5%
			Baseline instability in cal blanks
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Ag	R	Analyte reported as potential false positive
6762	Al	J	Serial dilution percent difference = 10.8%
	Sb	J	Matrix spike recovery = 45.5%
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Se	J	% RSD > 20% for ICP multiple exposures
	Ag	R	Analyte reported as potential false positive

May 21, 2003

INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 31635
Project Number: 03-0474
Site: Gulf States Creosoting, Flowood, MS

Sample No.	Element	Flag	Reason
6763	Al	J	Serial dilution percent difference = 10.8%
	Sb	J	Matrix spike recovery = 45.5%
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Ag	R	Analyte reported as potential false positive
6764	Al	J	Serial dilution percent difference = 10.8%
	Sb	J	Matrix spike recovery = 45.5%
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Se	R	Analyte reported as potential false positive
6765	Al	J	Serial dilution percent difference = 10.8%
	Sb	UJ	Matrix spike recovery = 45.5% Baseline instability in cal blanks
	As	R	Analyte reported as potential false positive
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Ag	R	Analyte reported as potential false positive
6766	Al	J	Serial dilution percent difference = 10.8%
	Sb	UJ	Matrix spike recovery = 45.5% Baseline instability in cal blanks
	As	J	% RSD > 20% for ICP multiple exposures
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Ag	R	Analyte reported as potential false positive
6767	Al	J	Serial dilution percent difference = 10.8%
	Sb	J	Matrix spike recovery = 45.5%
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Se	J	% RSD > 20% for ICP multiple exposures

May 21, 2003

INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 31635
Project Number: 03-0474
Site: Gulf States Creosoting, Flowood, MS

Sample No.	Element	Flag	Reason
6768	Al	J	Serial dilution percent difference = 10.8%
	Sb	UJ	Matrix spike recovery = 45.5%
			Baseline instability in cal blanks
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
6769	Al	J	Serial dilution percent difference = 10.8%
	Sb	J	Matrix spike recovery = 45.5%
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Se	R	Analyte reported as potential false positive
3770	Al	UJ	PE sample recovery > warning limit
			PE sample recovery > action limit
			Positive in blind blank
	Cr	R	Analyte reported as potential false positive
	Cu	U	Baseline instability in blind blank
6771	Al	J	Serial dilution percent difference = 10.8%
	Sb	J	Matrix spike recovery = 45.5%
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
6772	Al	J	Serial dilution percent difference = 10.8%
	Sb	J	Matrix spike recovery = 45.5%
	Pb	J	Matrix spike recovery = 184.2%
	Mg	J	Serial dilution percent difference = 14.1%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42%
	Ag	R	Analyte reported as potential false positive
6773	Al	J	Serial dilution percent difference = 13.4%
	Sb	R	Matrix spike recovery = 50.8%
			Analyte reported as potential false positive
	Cd	R	Analyte reported as potential false positive
	Cu	J	Serial dilution percent difference = 45.6%
	Mg	J	Serial dilution percent difference = 14.9%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Ag	R	Analyte reported as potential false positive

May 21, 2003

INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 31635
Project Number: 03-0474
Site: Gulf States Creosoting, Flowood, MS

Sample No.	Element	Flag	Reason
6774	Al	J	Serial dilution percent difference = 13.4%
	Sb	R	Matrix spike recovery = 50.8% Analyte reported as potential false positive
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
6775	Al	J	Serial dilution percent difference = 13.4%
	Sb	J	Matrix spike recovery = 50.8%
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Ag	R	Analyte reported as potential false positive
6776	Al	J	Serial dilution percent difference = 13.4%
	Sb	R	Matrix spike recovery = 50.8% Analyte reported as potential false positive
	As	R	Analyte reported as potential false positive
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Ag	R	Analyte reported as potential false positive
6777	Al	J	Serial dilution percent difference = 13.4%
	Sb	J	Matrix spike recovery = 50.8% Analyte reported as potential false positive
	Cr	U	Baseline instability in cal blanks
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Pb	J	% RSD > 20% for ICP multiple exposures
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	V	R	Analyte reported as potential false positive
6778	Al	J	Serial dilution percent difference = 13.4%
	Sb	J	Matrix spike recovery = 50.8%
	Cd	R	Analyte reported as potential false positive
	Cu	J	Serial dilution percent difference = 45.6%
	Mg	J	Serial dilution percent difference = 14.9%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Se	R	Analyte reported as potential false positive
	Ag	R	Analyte reported as potential false positive

May 21, 2003

INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 31635
Project Number: 03-0474
Site: Gulf States Creosoting, Flowood, MS

Sample No.	Element	Flag	Reason
6779	Al	J	Serial dilution percent difference = 13.4%
	Sb	J	Matrix spike recovery = 50.8%
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Se	R	Analyte reported as potential false positive
6780	Al	J	Serial dilution percent difference = 13.4%
	Sb	J	Matrix spike recovery = 50.8%
	Cu	J	Serial dilution percent difference = 45.6%
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Se	J	% RSD > 20% for ICP multiple exposures
6781	Al	J	Serial dilution percent difference = 13.4%
	Sb	R	Matrix spike recovery = 50.8% Analyte reported as potential false positive
	As	J	% RSD > 20% for ICP multiple exposures
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Se	R	Analyte reported as potential false positive
	Ag	R	Analyte reported as potential false positive
6782	Al	J	Serial dilution percent difference = 13.4%
	Sb	J	Matrix spike recovery = 50.8%
	As	J	% RSD > 20% for ICP multiple exposures
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Ag	R	Analyte reported as potential false positive
6783	Al	J	Serial dilution percent difference = 13.4%
	Sb	J	Matrix spike recovery = 50.8%
	Cd	R	Analyte reported as potential false positive
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Mg	J	Serial dilution percent difference = 14.9%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Se	R	Analyte reported as potential false positive

May 21, 2003

INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 31635
Project Number: 03-0474
Site: Gulf States Creosoting, Flowood, MS

Sample No.	Element	Flag	Reason
6784	Al	J	Serial dilution percent difference = 13.4%
	Sb	J	Matrix spike recovery = 50.8%
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
6785	Al	J	Serial dilution percent difference = 13.4%
	Sb	R	Matrix spike recovery = 50.8% Analyte reported as potential false positive
	Cu	J	Serial dilution percent difference = 45.6%
	Mg	J	Serial dilution percent difference = 14.9%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Se	R	Analyte reported as potential false positive
6786	Al	J	Serial dilution percent difference = 13.4%
	Sb	R	Matrix spike recovery = 50.8% Analyte reported as potential false positive
	Cu	J	Serial dilution percent difference = 45.6%
	Mg	J	Serial dilution percent difference = 14.9%
	Hg	U	Positives reported < lowest std on cal curve
	K	J	Serial dilution percent difference = 42.7%
3787	Al	J	PE sample recovery > warning limit PE sample recovery > action limit
	Co	R	Analyte reported as potential false positive
	Cu	U	Baseline instability in blind blank
	V	R	Analyte reported as potential false positive
6788	Al	J	Serial dilution percent difference = 13.4%
	Sb	J	Matrix spike recovery = 50.8%
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Se	R	Analyte reported as potential false positive

May 21, 2003

INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 31635
Project Number: 03-0474
Site: Gulf States Creosoting, Flowood, MS

Sample No.	Element	Flag	Reason
6789	Al	J	Serial dilution percent difference = 13.4%
	Sb	R	Matrix spike recovery = 50.8% Analyte reported as potential false positive
	Co	R	Analyte reported as potential false positive
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Mg	J	Serial dilution percent difference = 14.9%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Se	R	Analyte reported as potential false positive
	Ag	R	Analyte reported as potential false positive
6790	Al	J	Serial dilution percent difference = 13.4%
	Sb	R	Matrix spike recovery = 50.8% Analyte reported as potential false positive
	As	R	Analyte reported as potential false positive
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Ag	R	Analyte reported as potential false positive
6791	Al	J	Serial dilution percent difference = 13.4%
	Sb	J	Matrix spike recovery = 50.8% Analyte reported as potential false positive
	Co	R	Analyte reported as potential false positive
	Cu	UJ	Serial dilution percent difference = 45.6% Baseline instability in prep blank
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
6792	Al	J	Serial dilution percent difference = 13.4%
	Sb	R	Matrix spike recovery = 50.8% Analyte reported as potential false positive
	Cr	U	Baseline instability in cal blanks
	Co	R	Analyte reported as potential false positive
	Cu	J	Serial dilution percent difference = 45.6%
	Mg	J	Serial dilution percent difference = 14.9%
	Ni	U	Baseline instability in cal blanks
	K	J	Serial dilution percent difference = 42.7%
	Ag	R	Analyte reported as potential false positive
	V	R	Analyte reported as potential false positive
6793	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks

May 21, 2003

INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 31635
Project Number: 03-0474
Site: Gulf States Creosoting, Flowood, MS

Sample No.	Element	Flag	Reason
6794	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
	Se	U	Baseline instability in cal blanks
6795	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
6796	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
	Se	U	Baseline instability in cal blanks
	Ag	R	Analyte reported as potential false positive
6797	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	U	Baseline instability in cal blanks
	Se	U	Baseline instability in cal blanks
	Na	J	% RSD > 20% for ICP multiple exposures
6798	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
	Se	U	Baseline instability in cal blanks
6799	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
6800	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
	Se	J	% RSD > 20% for ICP multiple exposures
	Na	J	% RSD > 20% for ICP multiple exposures
6801	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
	Ag	R	Analyte reported as potential false positive
	Na	J	% RSD > 20% for ICP multiple exposures

May 21, 2003

INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 31635
Project Number: 03-0474
Site: Gulf States Creosoting, Flowood, MS

Sample No.	Element	Flag	Reason
6802	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
	Se	U	Baseline instability in cal blanks
6804	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
6805	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
	Se	U	Baseline instability in cal blanks
6806	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
6807	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
	Ag	R	Analyte reported as potential false positive
	Na	J	% RSD > 20% for ICP multiple exposures
6808	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
6809	Al	J	Serial dilution percent difference = 11.4%
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
	Se	U	Baseline instability in cal blanks
	Na	J	% RSD > 20% for ICP multiple exposures
6810	Al	J	Serial dilution percent difference = 11.4%
	Co	R	Analyte reported as potential false positive
	Cu	U	Baseline instability in cal blanks
	Fe	J	Matrix duplicate RPD = 53.5%
	Ni	U	Baseline instability in cal blanks
	Na	J	% RSD > 20% for ICP multiple exposures

May 21, 2003

INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 31635
Project Number: 03-0474
Site: Gulf States Creosoting, Flowood, MS

Sample No.	Element	Flag	Reason
6811	Al	J	PE sample recovery > warning limit
			PE sample recovery > action limit
	Cu	U	Baseline instability in blind blank
6812	Al	J	PE sample recovery > warning limit
			PE sample recovery > action limit
	Cu	U	Baseline instability in blind blank
6813	Al	J	PE sample recovery > warning limit
			PE sample recovery > action limit
6815	Al	UJ	PE sample recovery > warning limit
			PE sample recovery > action limit
			Positive in blind blank
	Mg	U	Positives in cal, prep, and blind blanks
	K	U	Positive in blind blank
	Na	U	Positive in blind blank

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6753** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS06GW / MD No: 1XR3 Inorg Contractor: SENTIN
Media: GROUNDWATER

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/24/2003 13:45
Ending:

RESULTS	UNITS	ANALYTE
74	UG/L	Aluminum
2.4 U	UG/L	Antimony
3.5 U	UG/L	Arsenic
0.60 U	UG/L	Barium
0.10 U	UG/L	Beryllium
0.20 U	UG/L	Cadmium
430 U	UG/L	Calcium
0.60 U	UG/L	Chromium
0.90 U	UG/L	Cobalt
0.67	UG/L	Copper
52 U	UG/L	Iron
2.0 U	UG/L	Lead
15 U	UG/L	Magnesium
0.50 U	UG/L	Manganese
0.10 U	UG/L	Total Mercury
1.5 U	UG/L	Nickel
100	UG/L	Potassium
2.4 U	UG/L	Selenium
0.70 U	UG/L	Silver
400	UG/L	Sodium
3.1 U	UG/L	Thallium
0.60 U	UG/L	Vanadium
11 U	UG/L	Zinc
NA	UG/L	Cyanide

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6754** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS01SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XR4
D No: 1XR4

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
8200 J	MG/KG	Aluminum
1.2 UJ	MG/KG	Antimony
5.7	MG/KG	Arsenic
89	MG/KG	Barium
0.39	MG/KG	Beryllium
0.10 U	MG/KG	Cadmium
1500	MG/KG	Calcium
13	MG/KG	Chromium
4.4	MG/KG	Cobalt
10 U	MG/KG	Copper
15000	MG/KG	Iron
12 J	MG/KG	Lead
1000 J	MG/KG	Magnesium
340	MG/KG	Manganese
0.13 U	MG/KG	Total Mercury
6.6 U	MG/KG	Nickel
700 J	MG/KG	Potassium
1.9 R	MG/KG	Selenium
0.68 R	MG/KG	Silver
690	MG/KG	Sodium
1.6 U	MG/KG	Thallium
24	MG/KG	Vanadium
36	MG/KG	Zinc
NA	MG/KG	Cyanide
61	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6755** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS18SB / MD No: 1XR5 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XR5 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 08:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
7700 J	MG/KG	Aluminum
0.59 UJ	MG/KG	Antimony
4.1	MG/KG	Arsenic
26	MG/KG	Barium
0.31	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
190	MG/KG	Calcium
8.7	MG/KG	Chromium
3.4	MG/KG	Cobalt
3.9 U	MG/KG	Copper
12000	MG/KG	Iron
8.0 J	MG/KG	Lead
470 J	MG/KG	Magnesium
76	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
3.4 U	MG/KG	Nickel
220 J	MG/KG	Potassium
0.59 U	MG/KG	Selenium
0.32 R	MG/KG	Silver
540	MG/KG	Sodium
0.76 U	MG/KG	Thallium
18	MG/KG	Vanadium
16	MG/KG	Zinc
NA	MG/KG	Cyanide
18	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6756** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS18SS / — MD No: 1XR6 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XR6 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 08:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4900 J	MG/KG	Aluminum
1.0 UJ	MG/KG	Antimony
5.4	MG/KG	Arsenic
53	MG/KG	Barium
0.35	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
890	MG/KG	Calcium
9.9	MG/KG	Chromium
7.6	MG/KG	Cobalt
3.1 U	MG/KG	Copper
10000	MG/KG	Iron
15 J	MG/KG	Lead
340 J	MG/KG	Magnesium
590	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
3.9 U	MG/KG	Nickel
180 J	MG/KG	Potassium
1.1	MG/KG	Selenium
0.29	MG/KG	Silver
310	MG/KG	Sodium
0.80 U	MG/KG	Thallium
20	MG/KG	Vanadium
34	MG/KG	Zinc
NA	MG/KG	Cyanide
22	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6757** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS

Program: SF — Case No: 31635

Id/Station: GS19SB-/ — MD No: 1XR7 — Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (> 12") — D No: 1XR7 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
12000 J	MG/KG	Aluminum
0.79 UJ	MG/KG	Antimony
8.3	MG/KG	Arsenic
43	MG/KG	Barium
0.46	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
190	MG/KG	Calcium
12	MG/KG	Chromium
9.6	MG/KG	Cobalt
6.3 U	MG/KG	Copper
20000	MG/KG	Iron
12 J	MG/KG	Lead
680 J	MG/KG	Magnesium
600	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
5.4 U	MG/KG	Nickel
480 J	MG/KG	Potassium
1.7 J	MG/KG	Selenium
0.53	MG/KG	Silver
280	MG/KG	Sodium
0.78 U	MG/KG	Thallium
31	MG/KG	Vanadium
30	MG/KG	Zinc
NA	MG/KG	Cyanide
20	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6758** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS

Program: SF — Case No: 31635

Id/Station: GS19SS / — MD No: 1XR8 — Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12") — D No: 1XR8 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
8500 J	MG/KG	Aluminum
0.89 UJ	MG/KG	Antimony
6.5	MG/KG	Arsenic
89	MG/KG	Barium
0.73	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
2000	MG/KG	Calcium
8.3	MG/KG	Chromium
13	MG/KG	Cobalt
3.8 U	MG/KG	Copper
12000	MG/KG	Iron
19 J	MG/KG	Lead
530 J	MG/KG	Magnesium
1900	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
6.7 U	MG/KG	Nickel
550 J	MG/KG	Potassium
1.2	MG/KG	Selenium
0.53 R	MG/KG	Silver
290	MG/KG	Sodium
0.73 U	MG/KG	Thallium
22	MG/KG	Vanadium
52	MG/KG	Zinc
NA	MG/KG	Cyanide
15	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6759** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS02SD / — MD No: 1XR9 — Inorg Contractor: SENTIN
Media: SEDIMENT — D No: 1XR9 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4700 J	MG/KG	Aluminum
2.4 UJ	MG/KG	Antimony
1.8 R	MG/KG	Arsenic
77	MG/KG	Barium
0.56	MG/KG	Beryllium
0.09 U	MG/KG	Cadmium
880	MG/KG	Calcium
7.8	MG/KG	Chromium
4.7	MG/KG	Cobalt
6.6 U	MG/KG	Copper
6400	MG/KG	Iron
20 J	MG/KG	Lead
410 J	MG/KG	Magnesium
500	MG/KG	Manganese
0.11 U	MG/KG	Total Mercury
4.6 U	MG/KG	Nickel
410 J	MG/KG	Potassium
1.1 U	MG/KG	Selenium
0.45 R	MG/KG	Silver
580	MG/KG	Sodium
1.4 U	MG/KG	Thallium
13	MG/KG	Vanadium
33	MG/KG	Zinc
NA	MG/KG	Cyanide
56	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6760** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS17SS / — MD No: 1XS0 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XS0 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:05
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
9000 J	MG/KG	Aluminum
0.83 UJ	MG/KG	Antimony
5.5	MG/KG	Arsenic
120	MG/KG	Barium
0.94	MG/KG	Beryllium
0.07 R	MG/KG	Cadmium
2300	MG/KG	Calcium
8.0	MG/KG	Chromium
12	MG/KG	Cobalt
5.5 U	MG/KG	Copper
12000	MG/KG	Iron
20 J	MG/KG	Lead
490 J	MG/KG	Magnesium
2500	MG/KG	Manganese
0.08 U	MG/KG	Total Mercury
9.2 U	MG/KG	Nickel
620 J	MG/KG	Potassium
1.5 J	MG/KG	Selenium
0.51 R	MG/KG	Silver
280	MG/KG	Sodium
0.79 U	MG/KG	Thallium
23	MG/KG	Vanadium
65	MG/KG	Zinc
NA	MG/KG	Cyanide
21	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6761** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS

Program: SF — Case No: 31635

Id/Station: GS17SB / — MD No: 1XS1 — Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (> 12") — D No: 1XS1 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:20
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
6700 J	MG/KG	Aluminum
1.1 UJ	MG/KG	Antimony
1.5	MG/KG	Arsenic
61	MG/KG	Barium
0.39	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
620	MG/KG	Calcium
7.0	MG/KG	Chromium
1.5	MG/KG	Cobalt
2.4 U	MG/KG	Copper
5900	MG/KG	Iron
9.1 J	MG/KG	Lead
310 J	MG/KG	Magnesium
57	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
2.5 U	MG/KG	Nickel
280 J	MG/KG	Potassium
0.60 U	MG/KG	Selenium
0.32 R	MG/KG	Silver
340	MG/KG	Sodium
0.78 U	MG/KG	Thallium
13	MG/KG	Vanadium
12	MG/KG	Zinc
NA	MG/KG	Cyanide
21	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6762** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS

Program: SF — Case No: 31635

Id/Station: GS20SS / — MD No: 1XS2 — Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12") — D No: 1XS2 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
6700 J	MG/KG	Aluminum
0.60 UJ	MG/KG	Antimony
5.8	MG/KG	Arsenic
410	MG/KG	Barium
1.2	MG/KG	Beryllium
0.17	MG/KG	Cadmium
1700	MG/KG	Calcium
8.2	MG/KG	Chromium
17	MG/KG	Cobalt
0.95 U	MG/KG	Copper
12000	MG/KG	Iron
24 J	MG/KG	Lead
380 J	MG/KG	Magnesium
5500	MG/KG	Manganese
0.08 U	MG/KG	Total Mercury
8.0 U	MG/KG	Nickel
240 J	MG/KG	Potassium
1.3 J	MG/KG	Selenium
0.90 R	MG/KG	Silver
290	MG/KG	Sodium
1.5	MG/KG	Thallium
22	MG/KG	Vanadium
88	MG/KG	Zinc
NA	MG/KG	Cyanide
20	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6763** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS20SB / MD No: 1XS3 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XS3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:55
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4700 J	MG/KG	Aluminum
0.57 UJ	MG/KG	Antimony
2.3	MG/KG	Arsenic
24	MG/KG	Barium
0.30	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
120	MG/KG	Calcium
4.7	MG/KG	Chromium
2.2	MG/KG	Cobalt
2.3 U	MG/KG	Copper
6900	MG/KG	Iron
6.0 J	MG/KG	Lead
210 J	MG/KG	Magnesium
140	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
1.7 U	MG/KG	Nickel
170 J	MG/KG	Potassium
0.57 U	MG/KG	Selenium
0.25 R	MG/KG	Silver
340	MG/KG	Sodium
0.74 U	MG/KG	Thallium
14	MG/KG	Vanadium
11	MG/KG	Zinc
NA	MG/KG	Cyanide
16	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6764** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS20SD / — MD No: 1XS4 — Inorg Contractor: SENTIN
Media: SEDIMENT — D No: 1XS4 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
6100 J	MG/KG	Aluminum
0.59 UJ	MG/KG	Antimony
4.5	MG/KG	Arsenic
130	MG/KG	Barium
0.76	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
1400	MG/KG	Calcium
7.2	MG/KG	Chromium
6.8	MG/KG	Cobalt
4.3 U	MG/KG	Copper
8800	MG/KG	Iron
22 J	MG/KG	Lead
410 J	MG/KG	Magnesium
1800	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
6.1 U	MG/KG	Nickel
250 J	MG/KG	Potassium
1.1 R	MG/KG	Selenium
0.42	MG/KG	Silver
290	MG/KG	Sodium
0.77 U	MG/KG	Thallium
17	MG/KG	Vanadium
63	MG/KG	Zinc
NA	MG/KG	Cyanide
19	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6765** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS03SD / — MD No: 1XS5 — Inorg Contractor: SENTIN
Media: SEDIMENT — D No: 1XS5 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
16000 J	MG/KG	Aluminum
4.5 UJ	MG/KG	Antimony
7.9 R	MG/KG	Arsenic
300	MG/KG	Barium
1.3	MG/KG	Beryllium
0.25 U	MG/KG	Cadmium
2000	MG/KG	Calcium
24	MG/KG	Chromium
12	MG/KG	Cobalt
25 U	MG/KG	Copper
24000	MG/KG	Iron
41 J	MG/KG	Lead
1200 J	MG/KG	Magnesium
720	MG/KG	Manganese
0.31 U	MG/KG	Total Mercury
16 U	MG/KG	Nickel
1100 J	MG/KG	Potassium
4.2	MG/KG	Selenium
1.1 R	MG/KG	Silver
1500	MG/KG	Sodium
3.9 U	MG/KG	Thallium
41	MG/KG	Vanadium
130	MG/KG	Zinc
NA	MG/KG	Cyanide
84	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6766** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS16SS / — MD No: 1XS6 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XS6 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
7700 J	MG/KG	Aluminum
0.70 UJ	MG/KG	Antimony
5.5 J	MG/KG	Arsenic
50	MG/KG	Barium
0.43	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
1200	MG/KG	Calcium
10	MG/KG	Chromium
4.0	MG/KG	Cobalt
5.3 U	MG/KG	Copper
12000	MG/KG	Iron
15 J	MG/KG	Lead
510 J	MG/KG	Magnesium
240	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
3.6 U	MG/KG	Nickel
490 J	MG/KG	Potassium
1.3	MG/KG	Selenium
0.39 R	MG/KG	Silver
270	MG/KG	Sodium
0.78 U	MG/KG	Thallium
22	MG/KG	Vanadium
33	MG/KG	Zinc
NA	MG/KG	Cyanide
21	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6767** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS16SB / — MD No: 1XS7 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XS7 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
12000 J	MG/KG	Aluminum
0.62 UJ	MG/KG	Antimony
7.3	MG/KG	Arsenic
49	MG/KG	Barium
0.49	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
390	MG/KG	Calcium
17	MG/KG	Chromium
2.1	MG/KG	Cobalt
7.7	MG/KG	Copper
23000	MG/KG	Iron
8.7 J	MG/KG	Lead
650 J	MG/KG	Magnesium
52	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
4.2 U	MG/KG	Nickel
470 J	MG/KG	Potassium
1.7 J	MG/KG	Selenium
0.45	MG/KG	Silver
290	MG/KG	Sodium
0.80 U	MG/KG	Thallium
33	MG/KG	Vanadium
25	MG/KG	Zinc
NA	MG/KG	Cyanide
23	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6768** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS21SS / — MD No: 1XS8 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XS8 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:05
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
6800 J	MG/KG	Aluminum
0.96 UJ	MG/KG	Antimony
2.7	MG/KG	Arsenic
88	MG/KG	Barium
0.81	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
190	MG/KG	Calcium
5.6	MG/KG	Chromium
14	MG/KG	Cobalt
1.5 U	MG/KG	Copper
7300	MG/KG	Iron
13 J	MG/KG	Lead
270 J	MG/KG	Magnesium
2200	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
6.7 U	MG/KG	Nickel
250 J	MG/KG	Potassium
0.80	MG/KG	Selenium
0.52	MG/KG	Silver
300	MG/KG	Sodium
0.79 U	MG/KG	Thallium
13	MG/KG	Vanadium
24	MG/KG	Zinc
NA	MG/KG	Cyanide
22	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6769** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS

Program: SF — Case No: 31635

Id/Station: GS21SB / — MD No: 1XS9 — Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (> 12") — D No: 1XS9 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
8600 J	MG/KG	Aluminum
0.60 UJ	MG/KG	Antimony
4.5	MG/KG	Arsenic
28	MG/KG	Barium
0.30	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
140	MG/KG	Calcium
14	MG/KG	Chromium
1.9	MG/KG	Cobalt
3.6	MG/KG	Copper
13000	MG/KG	Iron
6.8 J	MG/KG	Lead
420 J	MG/KG	Magnesium
95	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
3.6 U	MG/KG	Nickel
300 J	MG/KG	Potassium
0.95 R	MG/KG	Selenium
0.40	MG/KG	Silver
310	MG/KG	Sodium
0.78 U	MG/KG	Thallium
21	MG/KG	Vanadium
16	MG/KG	Zinc
NA	MG/KG	Cyanide
20	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6770** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS

Program: SF — Case No: 31635

Id/Station: GS01GW / — MD No: 1XT0 — Inorg Contractor: SENTIN

Media: GROUNDWATER — D No: 1XT0 — Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:05
Ending:

RESULTS	UNITS	ANALYTE
320 UJ	UG/L	Aluminum
2.4 U	UG/L	Antimony
3.5 U	UG/L	Arsenic
20	UG/L	Barium
0.11	UG/L	Beryllium
0.20 U	UG/L	Cadmium
4600	UG/L	Calcium
1.8 R	UG/L	Chromium
1.2	UG/L	Cobalt
1.5 U	UG/L	Copper
1500	UG/L	Iron
2.0 U	UG/L	Lead
1500	UG/L	Magnesium
23	UG/L	Manganese
0.10 U	UG/L	Total Mercury
1.5 U	UG/L	Nickel
520	UG/L	Potassium
2.4 U	UG/L	Selenium
0.70 U	UG/L	Silver
40000	UG/L	Sodium
3.1 U	UG/L	Thallium
0.60 U	UG/L	Vanadium
11 U	UG/L	Zinc
NA	UG/L	Cyanide

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS

EPA - REGION IV SESD, ATHENS, GA

Production Date: 06/05/2003 08:59

Sample **6771** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS

Program: SF Case No: 31635

Id/Station: GS01SB / MD No: 1XT1 Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (> 12") D No: 1XT1 Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/22/2003 09:15

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
7300 J	MG/KG	Aluminum
0.59 UJ	MG/KG	Antimony
6.7	MG/KG	Arsenic
62	MG/KG	Barium
0.31	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
850	MG/KG	Calcium
12	MG/KG	Chromium
3.3	MG/KG	Cobalt
6.4	MG/KG	Copper
13000	MG/KG	Iron
8.2 J	MG/KG	Lead
580 J	MG/KG	Magnesium
180	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
5.2 U	MG/KG	Nickel
320 J	MG/KG	Potassium
0.70	MG/KG	Selenium
0.38	MG/KG	Silver
290	MG/KG	Sodium
0.76 U	MG/KG	Thallium
22	MG/KG	Vanadium
18	MG/KG	Zinc
NA	MG/KG	Cyanide
18	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | EPA - REGION IV SESD, ATHENS, GA | **Production Date: 06/05/2003 08:59**

Sample **6772** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS01SS / — MD No: 1XT2 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XT2 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4700 J	MG/KG	Aluminum
0.56 UJ	MG/KG	Antimony
6.3	MG/KG	Arsenic
72	MG/KG	Barium
0.33	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
1100	MG/KG	Calcium
8.4	MG/KG	Chromium
5.8	MG/KG	Cobalt
6.0	MG/KG	Copper
10000	MG/KG	Iron
11 J	MG/KG	Lead
520 J	MG/KG	Magnesium
630	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
4.8 U	MG/KG	Nickel
380 J	MG/KG	Potassium
1.3	MG/KG	Selenium
0.39 R	MG/KG	Silver
270	MG/KG	Sodium
0.73 U	MG/KG	Thallium
17	MG/KG	Vanadium
29	MG/KG	Zinc
NA	MG/KG	Cyanide
15	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6773** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS13SS / — MD No: 1XT3 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XT3 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4400 J	MG/KG	Aluminum
0.60 R	MG/KG	Antimony
6.3	MG/KG	Arsenic
58	MG/KG	Barium
0.54	MG/KG	Beryllium
0.16 R	MG/KG	Cadmium
1200	MG/KG	Calcium
7.8	MG/KG	Chromium
4.2	MG/KG	Cobalt
7.2 J	MG/KG	Copper
12000	MG/KG	Iron
33	MG/KG	Lead
280 J	MG/KG	Magnesium
940	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
5.2 U	MG/KG	Nickel
390 J	MG/KG	Potassium
1.2	MG/KG	Selenium
0.33 R	MG/KG	Silver
230	MG/KG	Sodium
0.69 U	MG/KG	Thallium
17	MG/KG	Vanadium
72	MG/KG	Zinc
NA	MG/KG	Cyanide
11	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6774** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS13SB / — MD No: 1XT4 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XT4 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:25
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
8400 J	MG/KG	Aluminum
0.58 R	MG/KG	Antimony
4.7	MG/KG	Arsenic
23	MG/KG	Barium
0.34	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
400	MG/KG	Calcium
11	MG/KG	Chromium
1.7	MG/KG	Cobalt
5.5 UJ	MG/KG	Copper
14000	MG/KG	Iron
5.1	MG/KG	Lead
470 J	MG/KG	Magnesium
82	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
4.3 U	MG/KG	Nickel
410 J	MG/KG	Potassium
0.57 U	MG/KG	Selenium
0.39	MG/KG	Silver
310	MG/KG	Sodium
0.73 U	MG/KG	Thallium
22	MG/KG	Vanadium
20	MG/KG	Zinc
NA	MG/KG	Cyanide
15	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6775** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS04SD / — MD No: 1XT5 — Inorg Contractor: SENTIN
Media: SEDIMENT — D No: 1XT5 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 11:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
9100 J	MG/KG	Aluminum
2.1 UJ	MG/KG	Antimony
5.5	MG/KG	Arsenic
120	MG/KG	Barium
1.2	MG/KG	Beryllium
0.18 U	MG/KG	Cadmium
2000	MG/KG	Calcium
15	MG/KG	Chromium
11	MG/KG	Cobalt
12 UJ	MG/KG	Copper
13000	MG/KG	Iron
21	MG/KG	Lead
1000 J	MG/KG	Magnesium
280	MG/KG	Manganese
0.22 U	MG/KG	Total Mercury
15 U	MG/KG	Nickel
811 J	MG/KG	Potassium
2.1 U	MG/KG	Selenium
1.1 R	MG/KG	Silver
1200	MG/KG	Sodium
2.8 U	MG/KG	Thallium
23	MG/KG	Vanadium
84	MG/KG	Zinc
NA	MG/KG	Cyanide
77	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6776** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS05SD / — MD No: 1XT6 — Inorg Contractor: SENTIN
Media: SEDIMENT — D No: 1XT6 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4900 J	MG/KG	Aluminum
2.1 R	MG/KG	Antimony
2.9 R	MG/KG	Arsenic
71	MG/KG	Barium
0.51	MG/KG	Beryllium
0.09 U	MG/KG	Cadmium
1200	MG/KG	Calcium
8.4	MG/KG	Chromium
5.5	MG/KG	Cobalt
5.8 UJ	MG/KG	Copper
8400	MG/KG	Iron
12	MG/KG	Lead
660 J	MG/KG	Magnesium
320	MG/KG	Manganese
0.11 U	MG/KG	Total Mercury
6.5 U	MG/KG	Nickel
480 J	MG/KG	Potassium
1.0 U	MG/KG	Selenium
0.71 R	MG/KG	Silver
600	MG/KG	Sodium
1.3 U	MG/KG	Thallium
13	MG/KG	Vanadium
39	MG/KG	Zinc
NA	MG/KG	Cyanide
54	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6777** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS07SD /
Media: SEDIMENT

Case No: 31635
MD No: 1XT7
D No: 1XT7

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
140 J	MG/KG	Aluminum
0.61 UJ	MG/KG	Antimony
0.90 U	MG/KG	Arsenic
3.2	MG/KG	Barium
0.03 U	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
110 U	MG/KG	Calcium
0.61 U	MG/KG	Chromium
0.47	MG/KG	Cobalt
0.22 UJ	MG/KG	Copper
340	MG/KG	Iron
1.2 J	MG/KG	Lead
14 UJ	MG/KG	Magnesium
53	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
0.60 U	MG/KG	Nickel
52 J	MG/KG	Potassium
0.61 U	MG/KG	Selenium
0.18 U	MG/KG	Silver
330	MG/KG	Sodium
0.79 U	MG/KG	Thallium
0.57 R	MG/KG	Vanadium
2.9 U	MG/KG	Zinc
NA	MG/KG	Cyanide
22	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6778** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS23SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XT8
D No: 1XT8

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:55
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
7500 J	MG/KG	Aluminum
0.65 UJ	MG/KG	Antimony
5.0	MG/KG	Arsenic
83	MG/KG	Barium
0.50	MG/KG	Beryllium
0.10 R	MG/KG	Cadmium
960	MG/KG	Calcium
12	MG/KG	Chromium
6.8	MG/KG	Cobalt
12 J	MG/KG	Copper
13000	MG/KG	Iron
24	MG/KG	Lead
630 J	MG/KG	Magnesium
920	MG/KG	Manganese
0.08 U	MG/KG	Total Mercury
4.8 U	MG/KG	Nickel
480 J	MG/KG	Potassium
1.1 R	MG/KG	Selenium
0.46 R	MG/KG	Silver
340	MG/KG	Sodium
0.83 U	MG/KG	Thallium
23	MG/KG	Vanadium
49	MG/KG	Zinc
NA	MG/KG	Cyanide
26	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6779** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS15SS / — MD No: 1XT9 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XT9 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
8000 J	MG/KG	Aluminum
0.56 UJ	MG/KG	Antimony
6.9	MG/KG	Arsenic
72	MG/KG	Barium
0.71	MG/KG	Beryllium
0.10	MG/KG	Cadmium
2000	MG/KG	Calcium
11	MG/KG	Chromium
11	MG/KG	Cobalt
4.8 UJ	MG/KG	Copper
12000	MG/KG	Iron
26	MG/KG	Lead
430 J	MG/KG	Magnesium
1800	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
6.7 U	MG/KG	Nickel
580 J	MG/KG	Potassium
1.1 R	MG/KG	Selenium
0.50	MG/KG	Silver
310	MG/KG	Sodium
0.73 U	MG/KG	Thallium
23	MG/KG	Vanadium
48	MG/KG	Zinc
NA	MG/KG	Cyanide
15	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6780** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS15SB / — MD No: 1XW0 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XW0 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11000 J	MG/KG	Aluminum
0.61 UJ	MG/KG	Antimony
8.1	MG/KG	Arsenic
45	MG/KG	Barium
0.59	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
710	MG/KG	Calcium
21	MG/KG	Chromium
2.9	MG/KG	Cobalt
7.0 J	MG/KG	Copper
24000	MG/KG	Iron
9.2	MG/KG	Lead
640 J	MG/KG	Magnesium
410	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
5.8 U	MG/KG	Nickel
490 J	MG/KG	Potassium
2.3 J	MG/KG	Selenium
0.65	MG/KG	Silver
290	MG/KG	Sodium
0.79 U	MG/KG	Thallium
36	MG/KG	Vanadium
36	MG/KG	Zinc
NA	MG/KG	Cyanide
21	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6781** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS02SS / — MD No: 1XW1 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XW1 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:13
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
7800 J	MG/KG	Aluminum
0.64 R	MG/KG	Antimony
3.3 J	MG/KG	Arsenic
120	MG/KG	Barium
0.94	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
690	MG/KG	Calcium
6.1	MG/KG	Chromium
17	MG/KG	Cobalt
2.0 J	MG/KG	Copper
8400	MG/KG	Iron
17	MG/KG	Lead
470 J	MG/KG	Magnesium
2800	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
8.3 U	MG/KG	Nickel
240 J	MG/KG	Potassium
0.93 R	MG/KG	Selenium
0.71 R	MG/KG	Silver
300	MG/KG	Sodium
0.81 U	MG/KG	Thallium
15	MG/KG	Vanadium
47	MG/KG	Zinc
NA	MG/KG	Cyanide
23	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6782** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS02SB / — MD No: 1XW2 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XW2 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 13:34
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
7800 J	MG/KG	Aluminum
0.59 UJ	MG/KG	Antimony
3.4 J	MG/KG	Arsenic
34	MG/KG	Barium
0.36	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
170	MG/KG	Calcium
9.5	MG/KG	Chromium
2.6	MG/KG	Cobalt
3.8 UJ	MG/KG	Copper
13000	MG/KG	Iron
6.6	MG/KG	Lead
480 J	MG/KG	Magnesium
200	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
4.1 U	MG/KG	Nickel
320 J	MG/KG	Potassium
1.4	MG/KG	Selenium
0.38 R	MG/KG	Silver
290	MG/KG	Sodium
0.77 U	MG/KG	Thallium
20	MG/KG	Vanadium
20	MG/KG	Zinc
NA	MG/KG	Cyanide
19	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6783** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS14SS / MD No: 1XW3 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XW3 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4800 J	MG/KG	Aluminum
0.69 J	MG/KG	Antimony
9.0	MG/KG	Arsenic
65	MG/KG	Barium
0.44	MG/KG	Beryllium
0.11 R	MG/KG	Cadmium
1800	MG/KG	Calcium
8.6	MG/KG	Chromium
7.3	MG/KG	Cobalt
5.7 UJ	MG/KG	Copper
11000	MG/KG	Iron
24	MG/KG	Lead
340 J	MG/KG	Magnesium
870	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
4.1 U	MG/KG	Nickel
200 J	MG/KG	Potassium
0.63 R	MG/KG	Selenium
0.37	MG/KG	Silver
300	MG/KG	Sodium
0.72 U	MG/KG	Thallium
21	MG/KG	Vanadium
44	MG/KG	Zinc
NA	MG/KG	Cyanide
14	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6784** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS14SB / MD No: 1XW4 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW4 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4600 J	MG/KG	Aluminum
0.56 UJ	MG/KG	Antimony
7.4	MG/KG	Arsenic
54	MG/KG	Barium
0.48	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
620	MG/KG	Calcium
7.1	MG/KG	Chromium
12	MG/KG	Cobalt
1.5 UJ	MG/KG	Copper
14000	MG/KG	Iron
27	MG/KG	Lead
250 J	MG/KG	Magnesium
1000	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
3.3 U	MG/KG	Nickel
180 J	MG/KG	Potassium
0.56 U	MG/KG	Selenium
0.42	MG/KG	Silver
260	MG/KG	Sodium
0.73 U	MG/KG	Thallium
23	MG/KG	Vanadium
20	MG/KG	Zinc
NA	MG/KG	Cyanide
15	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6785** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS10SS / — MD No: 1XW5 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XW5 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:05
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4700 J	MG/KG	Aluminum
1.0 R	MG/KG	Antimony
6.8	MG/KG	Arsenic
120	MG/KG	Barium
0.46	MG/KG	Beryllium
0.34	MG/KG	Cadmium
2600	MG/KG	Calcium
23	MG/KG	Chromium
4.8	MG/KG	Cobalt
19 J	MG/KG	Copper
14000	MG/KG	Iron
80	MG/KG	Lead
780 J	MG/KG	Magnesium
500	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
8.5 U	MG/KG	Nickel
560 J	MG/KG	Potassium
0.98 R	MG/KG	Selenium
0.49	MG/KG	Silver
320	MG/KG	Sodium
0.70 U	MG/KG	Thallium
18	MG/KG	Vanadium
160	MG/KG	Zinc
NA	MG/KG	Cyanide
11	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6786** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS10SB / MD No: 1XW6 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XW6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
8600 J	MG/KG	Aluminum
0.96 R	MG/KG	Antimony
13	MG/KG	Arsenic
430	MG/KG	Barium
1.3	MG/KG	Beryllium
0.87	MG/KG	Cadmium
9400	MG/KG	Calcium
19	MG/KG	Chromium
12	MG/KG	Cobalt
40 J	MG/KG	Copper
20000	MG/KG	Iron
71	MG/KG	Lead
2400 J	MG/KG	Magnesium
1800	MG/KG	Manganese
0.10 U	MG/KG	Total Mercury
20	MG/KG	Nickel
970 J	MG/KG	Potassium
1.2	MG/KG	Selenium
0.76	MG/KG	Silver
490	MG/KG	Sodium
0.76 U	MG/KG	Thallium
30	MG/KG	Vanadium
290	MG/KG	Zinc
NA	MG/KG	Cyanide
18	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample - **6787** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS02GW /
Media: GROUNDWATER

Case No: 31635
MD No: 1XW7
D No: 1XW7

Inorg Contractor: SENTIN
Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 14:55
Ending:

RESULTS	UNITS	ANALYTE
450 J	UG/L	Aluminum
2.4 U	UG/L	Antimony
3.5 U	UG/L	Arsenic
120	UG/L	Barium
0.14	UG/L	Beryllium
0.20 U	UG/L	Cadmium
16000	UG/L	Calcium
0.92	UG/L	Chromium
1.2 R	UG/L	Cobalt
0.73 U	UG/L	Copper
1400	UG/L	Iron
2.0 U	UG/L	Lead
5500	UG/L	Magnesium
160	UG/L	Manganese
0.10 U	UG/L	Total Mercury
3.5	UG/L	Nickel
1500	UG/L	Potassium
2.4 U	UG/L	Selenium
0.70 U	UG/L	Silver
120000	UG/L	Sodium
3.1 U	UG/L	Thallium
0.82 R	UG/L	Vanadium
13	UG/L	Zinc
NA	UG/L	Cyanide

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6788** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS11SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XW8
D No: 1XW8

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:00
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4400 J	MG/KG	Aluminum
0.51 UJ	MG/KG	Antimony
3.7	MG/KG	Arsenic
54	MG/KG	Barium
0.44	MG/KG	Beryllium
0.19	MG/KG	Cadmium
660	MG/KG	Calcium
12	MG/KG	Chromium
5.4	MG/KG	Cobalt
5.0 UJ	MG/KG	Copper
11000	MG/KG	Iron
290	MG/KG	Lead
260 J	MG/KG	Magnesium
880	MG/KG	Manganese
0.05 U	MG/KG	Total Mercury
4.9 U	MG/KG	Nickel
330 J	MG/KG	Potassium
0.77 R	MG/KG	Selenium
0.38	MG/KG	Silver
200	MG/KG	Sodium
0.66 U	MG/KG	Thallium
16	MG/KG	Vanadium
840	MG/KG	Zinc
NA	MG/KG	Cyanide
7	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6789** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS

Program: SF — Case No: 31635

Id/Station: GS11SB / — MD No: 1XW9 — Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (> 12") — D No: 1XW9 — Org Contractor: LIBRTY

Produced by: Goddard, Denise

Requestor:

Project Leader: BSTRIGGO

Beginning: 04/22/2003 16:10

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
9600 J	MG/KG	Aluminum
1.6 R	MG/KG	Antimony
6.6	MG/KG	Arsenic
41	MG/KG	Barium
0.49	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
320	MG/KG	Calcium
17	MG/KG	Chromium
3.2 R	MG/KG	Cobalt
5.5 UJ	MG/KG	Copper
20000	MG/KG	Iron
6.7	MG/KG	Lead
680 J	MG/KG	Magnesium
120	MG/KG	Manganese
0.10 U	MG/KG	Total Mercury
5.0 U	MG/KG	Nickel
430 J	MG/KG	Potassium
1.1 R	MG/KG	Selenium
1.1 R	MG/KG	Silver
350	MG/KG	Sodium
0.75 U	MG/KG	Thallium
33	MG/KG	Vanadium
44	MG/KG	Zinc
NA	MG/KG	Cyanide
18	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6790** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS09SS /
Media: SURFACE SOIL (0" - 12") MD No: 1XX0 Inorg Contractor: SENTIN
D No: 1XX0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2500 J	MG/KG	Aluminum
1.2 R	MG/KG	Antimony
0.95 R	MG/KG	Arsenic
25	MG/KG	Barium
0.15	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
340	MG/KG	Calcium
4.1	MG/KG	Chromium
0.95	MG/KG	Cobalt
0.87 UJ	MG/KG	Copper
2800	MG/KG	Iron
8.8	MG/KG	Lead
160 J	MG/KG	Magnesium
28	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
1.5 U	MG/KG	Nickel
120 J	MG/KG	Potassium
0.60 U	MG/KG	Selenium
0.28 R	MG/KG	Silver
300	MG/KG	Sodium
0.77 U	MG/KG	Thallium
6.6	MG/KG	Vanadium
19	MG/KG	Zinc
NA	MG/KG	Cyanide
19	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6791** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS09SB / MD No: 1XX1 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XX1 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:25
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
5800 J	MG/KG	Aluminum
0.60 UJ	MG/KG	Antimony
0.88 U	MG/KG	Arsenic
29	MG/KG	Barium
0.35	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
540	MG/KG	Calcium
5.3	MG/KG	Chromium
1.0 R	MG/KG	Cobalt
1.7 UJ	MG/KG	Copper
3800	MG/KG	Iron
8.4	MG/KG	Lead
290 J	MG/KG	Magnesium
9.3	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
2.6 U	MG/KG	Nickel
190 J	MG/KG	Potassium
0.60 U	MG/KG	Selenium
0.18 U	MG/KG	Silver
440	MG/KG	Sodium
0.78 U	MG/KG	Thallium
8.4	MG/KG	Vanadium
12	MG/KG	Zinc
NA	MG/KG	Cyanide
20	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6792** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS06SD / MD No: 1XX2 Inorg Contractor: SENTIN
Media: SEDIMENT D No: 1XX2 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
450 J	MG/KG	Aluminum
0.70 R	MG/KG	Antimony
0.88 U	MG/KG	Arsenic
6.8	MG/KG	Barium
0.03 U	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
250	MG/KG	Calcium
1.3 U	MG/KG	Chromium
0.61 R	MG/KG	Cobalt
0.15 UJ	MG/KG	Copper
950	MG/KG	Iron
1.8	MG/KG	Lead
64 J	MG/KG	Magnesium
52	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
0.76 U	MG/KG	Nickel
90 J	MG/KG	Potassium
0.60 U	MG/KG	Selenium
0.24 R	MG/KG	Silver
330	MG/KG	Sodium
0.78 U	MG/KG	Thallium
1.6 R	MG/KG	Vanadium
3.6	MG/KG	Zinc
NA	MG/KG	Cyanide
20	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6793** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS08SD / — MD No: 1XX3 — Inorg Contractor: SENTIN
Media: SEDIMENT — D No: 1XX3 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
510 J	MG/KG	Aluminum
0.65 U	MG/KG	Antimony
0.95 U	MG/KG	Arsenic
15	MG/KG	Barium
0.10	MG/KG	Beryllium
0.06 U	MG/KG	Cadmium
180	MG/KG	Calcium
1.4	MG/KG	Chromium
1.0	MG/KG	Cobalt
1.2 U	MG/KG	Copper
2200 J	MG/KG	Iron
3.6	MG/KG	Lead
81	MG/KG	Magnesium
44	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
1.0 U	MG/KG	Nickel
56	MG/KG	Potassium
0.65 U	MG/KG	Selenium
0.19 U	MG/KG	Silver
68	MG/KG	Sodium
0.85 U	MG/KG	Thallium
2.4	MG/KG	Vanadium
4.6	MG/KG	Zinc
NA	MG/KG	Cyanide
27	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6794** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS22SS / MD No: 1XX4 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX4 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:42
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4200 J	MG/KG	Aluminum
0.56 U	MG/KG	Antimony
4.0	MG/KG	Arsenic
42	MG/KG	Barium
0.43	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
280	MG/KG	Calcium
9.4	MG/KG	Chromium
5.5	MG/KG	Cobalt
2.5 U	MG/KG	Copper
9700 J	MG/KG	Iron
9.8	MG/KG	Lead
220	MG/KG	Magnesium
470	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
2.2 U	MG/KG	Nickel
170	MG/KG	Potassium
1.1 U	MG/KG	Selenium
0.20	MG/KG	Silver
44 U	MG/KG	Sodium
0.72 U	MG/KG	Thallium
21	MG/KG	Vanadium
19	MG/KG	Zinc
NA	MG/KG	Cyanide
14	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6795** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS06SS /
Media: SURFACE SOIL (0" - 12")

Case No: 31635
MD No: 1XX5
D No: 1XX5

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
6700 J	MG/KG	Aluminum
0.65 U	MG/KG	Antimony
2.0	MG/KG	Arsenic
85	MG/KG	Barium
0.28	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
1200	MG/KG	Calcium
7.7	MG/KG	Chromium
1.4	MG/KG	Cobalt
4.9 U	MG/KG	Copper
5600 J	MG/KG	Iron
17	MG/KG	Lead
550	MG/KG	Magnesium
170	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
2.8 U	MG/KG	Nickel
430	MG/KG	Potassium
0.65 U	MG/KG	Selenium
0.29	MG/KG	Silver
110	MG/KG	Sodium
0.84 U	MG/KG	Thallium
13	MG/KG	Vanadium
35	MG/KG	Zinc
NA	MG/KG	Cyanide
26	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6796** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS06SB / MD No: 1XX6 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XX6 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
7700 J	MG/KG	Aluminum
0.65 U	MG/KG	Antimony
2.7	MG/KG	Arsenic
48	MG/KG	Barium
0.24	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
990	MG/KG	Calcium
7.5	MG/KG	Chromium
1.2	MG/KG	Cobalt
3.4 U	MG/KG	Copper
5800 J	MG/KG	Iron
11	MG/KG	Lead
580	MG/KG	Magnesium
18	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
2.7 U	MG/KG	Nickel
240	MG/KG	Potassium
0.96 U	MG/KG	Selenium
0.28 R	MG/KG	Silver
250	MG/KG	Sodium
0.84 U	MG/KG	Thallium
17	MG/KG	Vanadium
12	MG/KG	Zinc
NA	MG/KG	Cyanide
27	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6797** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS24SS / — MD No: 1XX7 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XX7 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/22/2003 16:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4900 J	MG/KG	Aluminum
0.91 U	MG/KG	Antimony
6.5	MG/KG	Arsenic
120	MG/KG	Barium
0.61	MG/KG	Beryllium
0.16	MG/KG	Cadmium
1600	MG/KG	Calcium
12	MG/KG	Chromium
6.8	MG/KG	Cobalt
8.4 U	MG/KG	Copper
17000 J	MG/KG	Iron
28	MG/KG	Lead
450	MG/KG	Magnesium
890	MG/KG	Manganese
0.09 U	MG/KG	Total Mercury
5.3 U	MG/KG	Nickel
370	MG/KG	Potassium
1.5 U	MG/KG	Selenium
0.47	MG/KG	Silver
86 J	MG/KG	Sodium
1.2 U	MG/KG	Thallium
26	MG/KG	Vanadium
89	MG/KG	Zinc
NA	MG/KG	Cyanide
47	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6798** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS12SS / MD No: 1XX9 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XX9 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
5500 J	MG/KG	Aluminum
0.58 U	MG/KG	Antimony
4.4	MG/KG	Arsenic
83	MG/KG	Barium
0.46	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
760	MG/KG	Calcium
8.9	MG/KG	Chromium
7.3	MG/KG	Cobalt
3.4 U	MG/KG	Copper
11000 J	MG/KG	Iron
25	MG/KG	Lead
380	MG/KG	Magnesium
990	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
3.2 U	MG/KG	Nickel
280	MG/KG	Potassium
1.1 U	MG/KG	Selenium
0.43	MG/KG	Silver
91	MG/KG	Sodium
0.75 U	MG/KG	Thallium
22	MG/KG	Vanadium
28	MG/KG	Zinc
NA	MG/KG	Cyanide
18	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6799** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS12SB /
Media: SUBSURFACE SOIL (> 12")

Case No: 31635
MD No: 1XY0
D No: 1XY0

Inorg Contractor: SENTIN
Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:50
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
3700 J	MG/KG	Aluminum
0.58 U	MG/KG	Antimony
4.6	MG/KG	Arsenic
19	MG/KG	Barium
0.30	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
160	MG/KG	Calcium
8.5	MG/KG	Chromium
1.4	MG/KG	Cobalt
1.8 U	MG/KG	Copper
13000 J	MG/KG	Iron
6.7	MG/KG	Lead
170	MG/KG	Magnesium
55	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
1.4 U	MG/KG	Nickel
170	MG/KG	Potassium
1.4	MG/KG	Selenium
0.47	MG/KG	Silver
96	MG/KG	Sodium
0.75 U	MG/KG	Thallium
26	MG/KG	Vanadium
8.4	MG/KG	Zinc
NA	MG/KG	Cyanide
17	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6800** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS03SS / MD No: 1XY1 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY1 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
8900 J	MG/KG	Aluminum
0.64 U	MG/KG	Antimony
11	MG/KG	Arsenic
67	MG/KG	Barium
0.94	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
790	MG/KG	Calcium
20	MG/KG	Chromium
8.1	MG/KG	Cobalt
6.5 U	MG/KG	Copper
27000 J	MG/KG	Iron
120	MG/KG	Lead
680	MG/KG	Magnesium
550	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
5.1 U	MG/KG	Nickel
350	MG/KG	Potassium
1.9 J	MG/KG	Selenium
0.63	MG/KG	Silver
82 J	MG/KG	Sodium
0.83 U	MG/KG	Thallium
46	MG/KG	Vanadium
34	MG/KG	Zinc
NA	MG/KG	Cyanide
25	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6801** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS03SB / — MD No: 1XY2 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XY2 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 07:55
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
8600 J	MG/KG	Aluminum
0.67 U	MG/KG	Antimony
9.4	MG/KG	Arsenic
63	MG/KG	Barium
0.64	MG/KG	Beryllium
0.06 U	MG/KG	Cadmium
1400	MG/KG	Calcium
14	MG/KG	Chromium
4.3	MG/KG	Cobalt
6.0 U	MG/KG	Copper
22000 J	MG/KG	Iron
15	MG/KG	Lead
770	MG/KG	Magnesium
200	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
5.1 U	MG/KG	Nickel
360	MG/KG	Potassium
1.6	MG/KG	Selenium
0.49 R	MG/KG	Silver
98 J	MG/KG	Sodium
0.87 U	MG/KG	Thallium
33	MG/KG	Vanadium
23	MG/KG	Zinc
NA	MG/KG	Cyanide
28	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6802** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS08SS / — MD No: 1XY3 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XY3 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:10
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1800 J	MG/KG	Aluminum
0.50 U	MG/KG	Antimony
3.4	MG/KG	Arsenic
21	MG/KG	Barium
0.19	MG/KG	Beryllium
0.09	MG/KG	Cadmium
800	MG/KG	Calcium
4.0	MG/KG	Chromium
1.5	MG/KG	Cobalt
2.9 U	MG/KG	Copper
4700 J	MG/KG	Iron
12	MG/KG	Lead
180	MG/KG	Magnesium
230	MG/KG	Manganese
0.05 U	MG/KG	Total Mercury
1.7 U	MG/KG	Nickel
150	MG/KG	Potassium
0.68 U	MG/KG	Selenium
0.15 U	MG/KG	Silver
39 U	MG/KG	Sodium
0.65 U	MG/KG	Thallium
7.1	MG/KG	Vanadium
26	MG/KG	Zinc
NA	MG/KG	Cyanide
5	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6804** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS08SB / — MD No: 1XY4 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XY4 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:20
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
8100 J	MG/KG	Aluminum
0.58 U	MG/KG	Antimony
3.5	MG/KG	Arsenic
45	MG/KG	Barium
0.59	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
450	MG/KG	Calcium
9.2	MG/KG	Chromium
9.4	MG/KG	Cobalt
3.9 U	MG/KG	Copper
12000 J	MG/KG	Iron
5.7	MG/KG	Lead
370	MG/KG	Magnesium
1000	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
5.3 U	MG/KG	Nickel
350	MG/KG	Potassium
0.58 U	MG/KG	Selenium
0.32	MG/KG	Silver
46	MG/KG	Sodium
0.75 U	MG/KG	Thallium
22	MG/KG	Vanadium
25	MG/KG	Zinc
NA	MG/KG	Cyanide
18	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6805** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS07SS / — MD No: 1XY5 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XY5 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:35
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2800 J	MG/KG	Aluminum
0.58 U	MG/KG	Antimony
3.6	MG/KG	Arsenic
34	MG/KG	Barium
0.20	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
810	MG/KG	Calcium
4.5	MG/KG	Chromium
2.0	MG/KG	Cobalt
3.5 U	MG/KG	Copper
5400 J	MG/KG	Iron
11	MG/KG	Lead
250	MG/KG	Magnesium
180	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
1.9 U	MG/KG	Nickel
170	MG/KG	Potassium
0.79 U	MG/KG	Selenium
0.17 U	MG/KG	Silver
63	MG/KG	Sodium
0.75 U	MG/KG	Thallium
8.1	MG/KG	Vanadium
24	MG/KG	Zinc
NA	MG/KG	Cyanide
17	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6806** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS07SB / — MD No: 1XY6 — Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") — D No: 1XY6 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:45
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
9400 J	MG/KG	Aluminum
0.65 U	MG/KG	Antimony
2.7	MG/KG	Arsenic
50	MG/KG	Barium
0.35	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
670	MG/KG	Calcium
8.0	MG/KG	Chromium
1.6	MG/KG	Cobalt
5.7 U	MG/KG	Copper
8200 J	MG/KG	Iron
11	MG/KG	Lead
550	MG/KG	Magnesium
19	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
3.7 U	MG/KG	Nickel
260	MG/KG	Potassium
0.65 U	MG/KG	Selenium
0.19 U	MG/KG	Silver
220	MG/KG	Sodium
0.84 U	MG/KG	Thallium
18	MG/KG	Vanadium
15	MG/KG	Zinc
NA	MG/KG	Cyanide
26	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6807** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS04SS / MD No: 1XY7 Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") D No: 1XY7 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:30
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4300 J	MG/KG	Aluminum
0.63 U	MG/KG	Antimony
2.0	MG/KG	Arsenic
60	MG/KG	Barium
0.37	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
690	MG/KG	Calcium
6.0	MG/KG	Chromium
1.7	MG/KG	Cobalt
3.9 U	MG/KG	Copper
4500 J	MG/KG	Iron
18	MG/KG	Lead
280	MG/KG	Magnesium
140	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
2.6 U	MG/KG	Nickel
200	MG/KG	Potassium
0.63 U	MG/KG	Selenium
0.26 R	MG/KG	Silver
120 J	MG/KG	Sodium
0.81 U	MG/KG	Thallium
11	MG/KG	Vanadium
27	MG/KG	Zinc
NA	MG/KG	Cyanide
23	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6808** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS04SB / MD No: 1XY8 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XY8 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 08:40
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
6600 J	MG/KG	Aluminum
0.66 U	MG/KG	Antimony
1.9	MG/KG	Arsenic
57	MG/KG	Barium
0.41	MG/KG	Beryllium
0.06 U	MG/KG	Cadmium
670	MG/KG	Calcium
6.6	MG/KG	Chromium
1.4	MG/KG	Cobalt
4.0 U	MG/KG	Copper
7500 J	MG/KG	Iron
9.2	MG/KG	Lead
370	MG/KG	Magnesium
60	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
3.0 U	MG/KG	Nickel
190	MG/KG	Potassium
0.66 U	MG/KG	Selenium
0.19 U	MG/KG	Silver
300	MG/KG	Sodium
0.85 U	MG/KG	Thallium
14	MG/KG	Vanadium
15	MG/KG	Zinc
NA	MG/KG	Cyanide
27	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6809** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS05SS / — MD No: 1XY9 — Inorg Contractor: SENTIN
Media: SURFACE SOIL (0" - 12") — D No: 1XY9 — Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:15
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
3100 J	MG/KG	Aluminum
0.57 U	MG/KG	Antimony
13	MG/KG	Arsenic
37	MG/KG	Barium
0.30	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
500	MG/KG	Calcium
7.5	MG/KG	Chromium
6.6	MG/KG	Cobalt
3.0 U	MG/KG	Copper
15000 J	MG/KG	Iron
19	MG/KG	Lead
180	MG/KG	Magnesium
610	MG/KG	Manganese
0.06 U	MG/KG	Total Mercury
2.0 U	MG/KG	Nickel
120	MG/KG	Potassium
0.87 U	MG/KG	Selenium
0.43	MG/KG	Silver
58 J	MG/KG	Sodium
0.73 U	MG/KG	Thallium
18	MG/KG	Vanadium
23	MG/KG	Zinc
NA	MG/KG	Cyanide
15	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6810** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS05SB / MD No: 1XZ0 Inorg Contractor: SENTIN
Media: SUBSURFACE SOIL (> 12") D No: 1XZ0 Org Contractor: LIBRTY

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:25
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
5300 J	MG/KG	Aluminum
0.62 U	MG/KG	Antimony
0.91 U	MG/KG	Arsenic
59	MG/KG	Barium
0.27	MG/KG	Beryllium
0.05 U	MG/KG	Cadmium
580	MG/KG	Calcium
4.9	MG/KG	Chromium
0.78 R	MG/KG	Cobalt
2.1 U	MG/KG	Copper
2300 J	MG/KG	Iron
6.7	MG/KG	Lead
220	MG/KG	Magnesium
16	MG/KG	Manganese
0.07 U	MG/KG	Total Mercury
1.7 U	MG/KG	Nickel
170	MG/KG	Potassium
0.62 U	MG/KG	Selenium
0.18 U	MG/KG	Silver
190 J	MG/KG	Sodium
0.81 U	MG/KG	Thallium
6.7	MG/KG	Vanadium
7.3	MG/KG	Zinc
NA	MG/KG	Cyanide
23	%	% Moisture

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6811** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS03GW /
Media: GROUNDWATER

Case No: 31635
MD No: 1XZ1
D No: 1XZ1

Inorg Contractor: SENTIN
Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 09:55
Ending:

RESULTS	UNITS	ANALYTE
850 J	UG/L	Aluminum
2.4 U	UG/L	Antimony
3.5 U	UG/L	Arsenic
29	UG/L	Barium
0.11	UG/L	Beryllium
0.20 U	UG/L	Cadmium
3600	UG/L	Calcium
1.8	UG/L	Chromium
0.90 U	UG/L	Cobalt
1.1 U	UG/L	Copper
2100	UG/L	Iron
2.0 U	UG/L	Lead
940	UG/L	Magnesium
110	UG/L	Manganese
0.10 U	UG/L	Total Mercury
1.5 U	UG/L	Nickel
870	UG/L	Potassium
2.4 U	UG/L	Selenium
0.70 U	UG/L	Silver
29000	UG/L	Sodium
3.1 U	UG/L	Thallium
2.0	UG/L	Vanadium
18	UG/L	Zinc
NA	UG/L	Cyanide

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6812** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS04GW /
Media: GROUNDWATER

Case No: 31635
MD No: 1XZ3
D No: 1XZ3

Inorg Contractor: SENTIN
Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 13:20
Ending:

RESULTS	UNITS	ANALYTE
1700 J	UG/L	Aluminum
2.4 U	UG/L	Antimony
3.5 U	UG/L	Arsenic
26	UG/L	Barium
0.10 U	UG/L	Beryllium
0.20 U	UG/L	Cadmium
3500	UG/L	Calcium
1.6	UG/L	Chromium
0.90 U	UG/L	Cobalt
0.78 U	UG/L	Copper
1900	UG/L	Iron
2.0 U	UG/L	Lead
930	UG/L	Magnesium
30	UG/L	Manganese
0.10 U	UG/L	Total Mercury
3.3	UG/L	Nickel
1800	UG/L	Potassium
2.4 U	UG/L	Selenium
0.70 U	UG/L	Silver
5000	UG/L	Sodium
3.1 U	UG/L	Thallium
1.9	UG/L	Vanadium
11 U	UG/L	Zinc
NA	UG/L	Cyanide

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6813** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting — Flowood, MS
Program: SF — Case No: 31635
Id/Station: GS05GW / — MD No: 1XZ4 — Inorg Contractor: SENTIN
Media: GROUNDWATER — D No: 1XZ4 — Org Contractor: A4

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/23/2003 11:45
Ending:

RESULTS	UNITS	ANALYTE
370 J	UG/L	Aluminum
2.4 U	UG/L	Antimony
3.5 U	UG/L	Arsenic
32	UG/L	Barium
0.90	UG/L	Beryllium
0.20 U	UG/L	Cadmium
15000	UG/L	Calcium
0.60 U	UG/L	Chromium
10	UG/L	Cobalt
0.60 U	UG/L	Copper
12000	UG/L	Iron
2.0 U	UG/L	Lead
8200	UG/L	Magnesium
320	UG/L	Manganese
0.10 U	UG/L	Total Mercury
20	UG/L	Nickel
1900	UG/L	Potassium
2.4 U	UG/L	Selenium
0.70 U	UG/L	Silver
86000	UG/L	Sodium
3.1 U	UG/L	Thallium
0.60 U	UG/L	Vanadium
42	UG/L	Zinc
NA	UG/L	Cyanide

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

METALS SAMPLE ANALYSIS | **EPA - REGION IV SESD, ATHENS, GA** | **Production Date: 06/05/2003 08:59**

Sample **6815** FY **2003** Project: **03-0474**

Metals Scan

Facility: Gulf States Creosoting Flowood, MS
Program: SF Case No: 31635
Id/Station: GS01PB / MD No: 1XZ5 Inorg Contractor: SENTIN
Media: PRESERVATIVE BLANK

Produced by: Goddard, Denise
Requestor:
Project Leader: BSTRIGGO
Beginning: 04/24/2003 14:00
Ending:

RESULTS	UNITS	ANALYTE
150 UJ	UG/L	Aluminum
2.4 U	UG/L	Antimony
3.5 U	UG/L	Arsenic
0.60 U	UG/L	Barium
0.10 U	UG/L	Beryllium
0.20 U	UG/L	Cadmium
430 U	UG/L	Calcium
0.60 U	UG/L	Chromium
0.90 U	UG/L	Cobalt
0.60 U	UG/L	Copper
52 U	UG/L	Iron
2.0 U	UG/L	Lead
15 U	UG/L	Magnesium
0.50 U	UG/L	Manganese
0.10 U	UG/L	Total Mercury
1.5 U	UG/L	Nickel
130 U	UG/L	Potassium
2.4 U	UG/L	Selenium
0.70 U	UG/L	Silver
410 U	UG/L	Sodium
3.1 U	UG/L	Thallium
0.60 U	UG/L	Vanadium
11 U	UG/L	Zinc
NA	UG/L	Cyanide

Cyanide Analysis Not Requested

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

MEMORANDUM

Date: 06/09/2003

Subject: Results of CLASSICALS/NUTRIENTS Sample Analysis
03-0558 Gulf States Creosoting
Flowood, MS

From: Howes, Roberta

To: Striggow, Brian

Thru: Scifres, Jenny
Chief, Inorganic Chemistry Section
Analytical Support Branch

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

Sample Disposal Policy:

According to our records this project is not part of a criminal investigation. Because of our limited space for long term sample storage, we must perform disposals on a routine basis.

Therefore, please take note that within 90 days of the date of this memo, the original samples and all extracts associated with the samples will be disposed of as required by all applicable and appropriate statutes.

These samples may be held in custody for longer than 90 days only by contacting our sample coordinator, Debbie Colquitt, by e-mail at Colquitt.Debbie@epa.gov.

ATTACHMENT

CLASSICALS/NUTRIENTS SAMPLE ANALYSIS **EPA - REGION IV SESD, ATHENS, GA** **Production Date: 06/09/2003 15:36**

Sample **6693** FY **2003** Project: **03-0558**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS-01-SD /
Media: SEDIMENT

Produced by: Howes, Roberta
Requestor: Brian Farrier
Project Leader: BSTRIGGO
Beginning: 04/22/2003 09:00
Ending:
samples placed in custody room cooler 04/25/03 @ 1440 by Bria
DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0	%	% Total Organic Carbon

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6694** FY **2003** Project: **03-0558**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS-02-SD /
Media: SEDIMENT

Produced by: Howes, Roberta
Requestor: Brian Farrier
Project Leader: BSTRIGGO
Beginning: 04/24/2003 09:50
Ending:
samples placed in custody room cooler 04/25/03 @ 1440 by Bria
DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1	%	% Total Organic Carbon

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

CLASSICALS/NUTRIENTS SAMPLE ANALYSIS **EPA - REGION IV SESD, ATHENS, GA** **Production Date: 06/09/2003 15:36**

Sample **6695** FY **2003** Project: **03-0558**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS-03-SD /
Media: SEDIMENT

Produced by: Howes, Roberta
Requestor: Brian Farrier
Project Leader: BSTRIGGO
Beginning: 04/22/2003 10:30
Ending:
samples placed in custody room cooler 04/25/03 @ 1440 by Bria
DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
9.5	%	% Total Organic Carbon

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6696** FY **2003** Project: **03-0558**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS-05-SD /
Media: SEDIMENT

Produced by: Howes, Roberta
Requestor: Brian Farrier
Project Leader: BSTRIGGO
Beginning: 04/22/2003 12:15
Ending:
samples placed in custody room cooler 04/25/03 @ 1440 by Bria
DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.8	%	% Total Organic Carbon

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

CLASSICALS/NUTRIENTS SAMPLE ANALYSIS **EPA - REGION IV SESD, ATHENS, GA** **Production Date: 06/09/2003 15:36**

Sample **6697** FY **2003** Project: **03-0558**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS-06-SD /
Media: SEDIMENT

Produced by: Howes, Roberta
Requestor: Brian Farrier
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:15
Ending:
samples placed in custody room cooler 04/25/03 @ 1440 by Bria
DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.47 U	%	% Total Organic Carbon

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

Sample **6698** FY **2003** Project: **03-0558**

SPECIFIED TESTS

Facility: Gulf States Creosoting Flowood, MS
Program: SF
Id/Station: GS-08-SD /
Media: SEDIMENT

Produced by: Howes, Roberta
Requestor: Brian Farrier
Project Leader: BSTRIGGO
Beginning: 04/22/2003 15:50
Ending:
samples placed in custody room cooler 04/25/03 @ 1440 by Bria
DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
0.41 U	%	% Total Organic Carbon

U-Analyte not detected at or above reporting limit. | J-Identification of analyte is acceptable; reported value is an estimate. | UJ-Analyte not detected at or above reporting limit. Reporting limit is an estimate.
N-Presumptive evidence analyte is present; analyte reported as tentative identification. | NJ-Presumptive evidence analyte is present; analyte reported as tentative identification. Reported value is an estimate.
K-Identification of analyte is acceptable; reported value may be biased high. Actual value expected to be less than the reported value.
L-Identification of analyte is acceptable; reported value may be biased low. Actual value expected to be greater than reported value.
NA-Not Analyzed. | NAI-Not Analyzed due to Interferences. | A-Analyte analyzed in replicate. Reported value is "average" of replicates.
R-Presence or absence of analyte can not be determined from data due to severe quality control problems. Data are rejected and considered unusable.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
Science and Ecosystem Support Division
Enforcement and Investigations Branch
980 College Station Road
Athens, Georgia 30605-2720

September 09, 2007

4SESD-EIB

MEMORANDUM

SUBJECT: Pipe Tracing Investigation at Gulf States Creosoting site, Flowood, Mississippi
SESD Project #07-0710

FROM: Brian Striggow
Superfund and Air Section

THRU: Danny France, Chief
Superfund and Air Section

TO: Jose Negron
Emergency Response Branch

On September 20, 2007, Brian Striggow of the Science and Ecosystem Support Division (SESD) met with Jose Negron and Alyssa Hughes of the EPA Superfund Division along with Richard Ball and Phillip Weathersby of the Mississippi Department of Environmental Quality (MDEQ) to conduct an investigation at the Gulf States Creosoting Site. The limited purpose of the investigation was to ascertain the existence of a buried pipe system and whether said system could be contributing to contamination found in oxbow lakes adjacent to the site.

Recently, the Consteelco Company, which operates on the southern portion of the Gulf States Creosoting site, discovered apparent creosote contamination on the northwestern portion of their property. The area was investigated by EarthCon Consultants and copies of their report have been forwarded to both EPA and MDEQ. Per the EarthCon report, various creosote-related compounds were found on the northwest corner of the Consteelco property. The report also mentions several broken pieces of large diameter concrete pipe found near the contaminated area, postulated to be part of a site storm drain system.

The owner of property immediately across the levee from Consteelco had brought to the attention of Richard Ball of MDEQ the presence of a manhole cover immediately west of the contaminated area at Consteelco. In an earlier reconnaissance, the cover was lifted revealing a brick valve vault with a valve handwheel visible above the water in the vault. The valve appeared to be approximately 6-8 feet below ground surface.

Also of note, creosote odors have consistently been observed in several areas in and near the oxbow lakes (Creosote Slough) west of the Gulf States Creosoting site. The areas of these chronic odors as well as other features mentioned herein are shown in the attached Figure 1, Pipe Traces.

In the earlier reconnaissance, a wooden structure was discovered on the eastern bank of a drainage ditch that runs north-south along the western edge of the Consteelco property. The structure was approximately 20ft north of the Consteelco property and is on a virtual line extending from a storm drain on the Consteelco property through the broken pipe rubble. The actual path of any storm drains in this area remains unknown.

Work in this investigation was begun by excavating in and around the wood structure at the drainage ditch. This structure was originally thought to be a storm drainage outfall, but upon excavation a flat steel cover was found inside, indicating that the structure was a protective structure for the cover. Figure 2, Cross Section of Tile Pipe, shows these structures as well as subsequently revealed features.

The cover was pried up, revealing what appeared to be a cleanout for an east-west running pipe of approximately 8-10 inches diameter. Dry, gray, medium sand approximately half-filled the pipe at the cleanout. No odors were observed when opening the cover and the soil material in the pipe invert had no odor.

The adjacent ditch invert was probed with a tile probe to locate the point where the pipe crossed the ditch. This area was hand-excavated revealing a glazed clay tile pipe with cemented bell-jointed ends of similar diameter to the pipe at the cleanout. A hole was broken into the top of the pipe at this point for access. There was no soil material in the pipe at this point and again no odors were observed.

A steel fish tape was fed into the pipe for approximately 40 feet in the westerly direction. Utiliquest had been retained for pipe locating work on the site and their representative attached a transmitter to the fish tape and marked the location of the fish tape on the ground surface for the 40 feet that the fish tape extended.

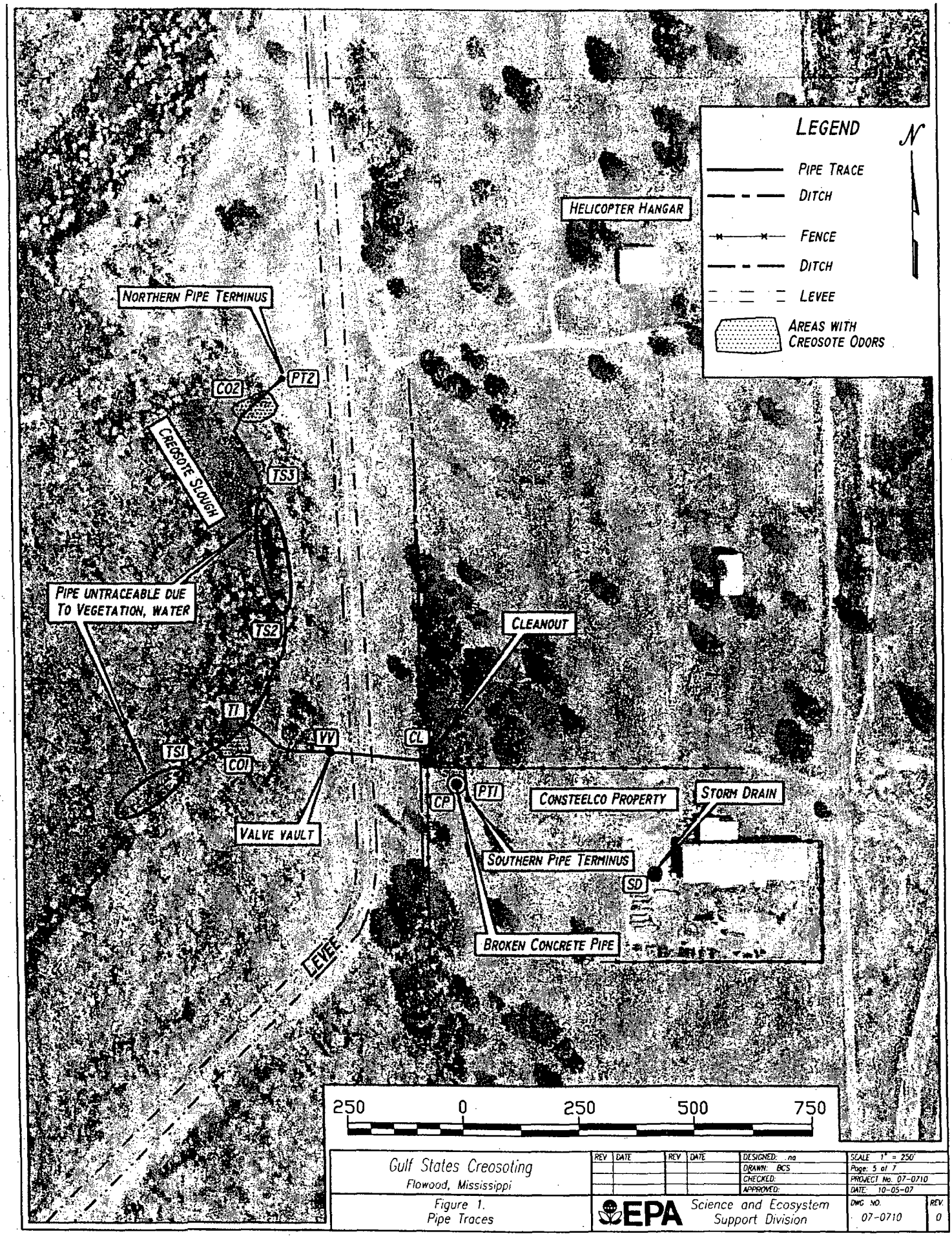
The fish tape was removed and the Utiliquest representative then used inductive-coupled tracing equipment (Pipehorn® brand) to trace the pipe. Inductive-coupled tracing uses a transmitter placed on the ground surface which couples a signal to any nearby underground structures. A handheld receiver is used to detect and trace the signals following the pipes and the ground is marked at the location of pipe trace signals. While clay tile pipe would normally not be expected to conduct a tracing signal, the trace was easily carried to a termination point (labeled PT1 on Figure 1) on the Consteelco property and to the valve vault on the west side of the levee. Of note, the inductive trace directly overlaid the fish tape trace.

The trace was carried west from the valve vault and led to and past an area of creosote odors in creosote slough (labeled CO1 on Figure 1). While the trace appeared to lead further to the west, the trace could not be carried further due to standing water and

The pipe in the bottom of the ditch invert, the cleanout, and the wood structure were destroyed by the excavation. In the event of future work, it should be possible to pick up the trace of the remaining pipe using Pipehorn® or equivalent inductive tracing equipment.

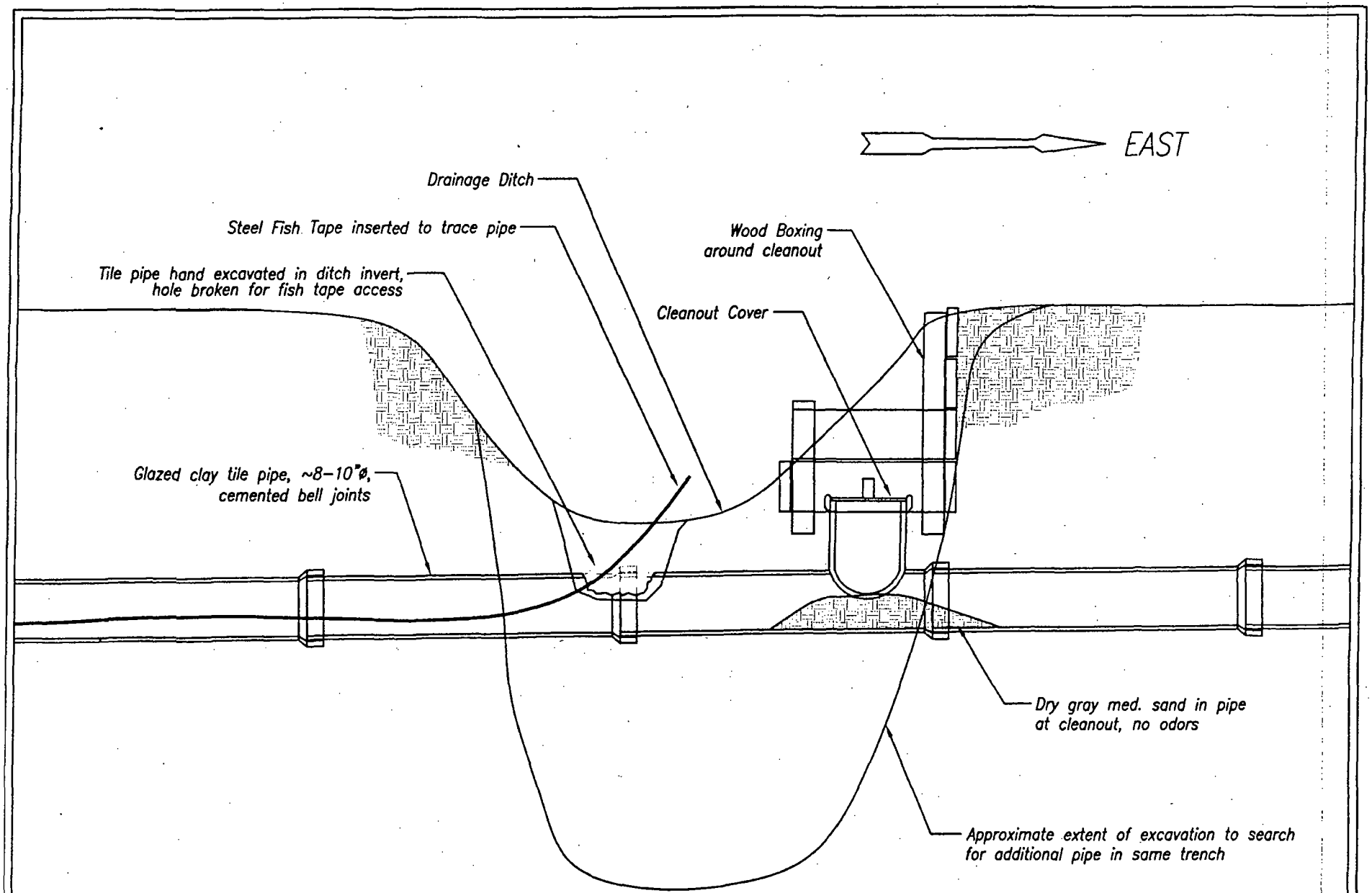
If you have any questions about this document, please contact me at (706) 355-8619 or at email striggow.brian@epamail.epa.gov

Attachment



Gulf States Creosoting Flowood, Mississippi	REV	DATE	REV	DATE	DESIGNED: .na DRAWN: BCS CHECKED: APPROVED:
Figure 1. Pipe Traces	EPA Science and Ecosystem Support Division				DWG NO. 07-0710 REV. 0

SCALE 1" = 250'
Page: 5 of 7
PROJECT No. 07-0710
DATE: 10-05-07



Gulf States Creosoting Flowood, Mississippi	REV.	DATE	REV.	DATE	DESIGNED: na DRAWN: BCS CHECKED: APPROVED:	SCALE: NTS Page: 6 of 7 PROJECT No 07-0710 DATE: 10-05-07
Figure 2 Cross Section of Tile Pipe	EPA Science and Ecosystem Support Division					DWG. NO. 07-0710 REV. 0

Table 1. Coordinates of Site Features

		WGS84	
Map Label	Description	Longitude	Latitude
V V	Valve Vault	-90.14538	32.31057
CO2	Creosote odors, northern	-90.14576	32.31263
CO1	Creosote odors, southern	-90.14608	32.31063
SD	Storm Drain Grating, Consteelco	-90.14315	32.30981
CP	Broken Concrete Pipe at surface	-90.14452	32.31039
CL	Clay Tile Cleanout	-90.14472	32.31050
PT1	Traced Pipe Terminus, southern	-90.14443	32.31028
PT2	Traced Pipe Terminus, northern	-90.14562	32.31277
T1	Tee west of valve vault	-90.14595	32.31076
TS1	Southernmost stop point of southern pipe trace	-90.14637	32.31052
TS2	Northern stop point of southern pipe trace	-90.14566	32.31128
TS3	Southern stop point of northern pipe trace	-90.14582	32.31223

End of Report

Reference 19
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

DEC 12 2007

Mr. Jerry Banks
Mississippi Department of Environmental Quality
P. O. Box 10385
Jackson, MS 39289-0385

Subject: Gulf States Creosoting Company
Flowood, Mississippi

Dear Mr. Banks:

The U.S. Environmental Protection Agency's Emergency Response and Removal Branch (ERRB) conducted a Removal Site Evaluation (RSE) at the above referenced site for potential removal action eligibility under the National Contingency Plan (NCP).

Based on the information collected during the RSE, the On Scene Coordinator (OSC) recommends this site be given a no further action for removal eligibility under EPA's Superfund Removal Program. (See enclosed RSE memo)

This determination does not preclude any other investigation or response action by other parties which may still be appropriate for this 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 Jose Negron, OSC at (404) 562-8754, or Jim McGuire, Chief of Removal Operations Section, at (404) 562-8911.

Sincerely,

A. Shane Hitchcock, Chief
Emergency Response & Removal Branch

Enclosure

cc: Dawn Taylor
Tony Moore
Jim McGuire
Jose Negron
Kerri Sanders

United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Friday, October 26, 2007
From: Jose Negron, OSC

To: Ralph Howard, EPA Remedial

Subject: Removal Site Evaluation
Gulf States Creosoting
State Highway 468, Flowood, MS

POLREP No.:	1	**Site #:**	A4RF
Reporting Period:		**D.O. #:**	
Start Date:	9/20/2007	**Response Authority:**	CERCLA
Mob Date:		**Response Type:**	Time-Critical
Completion Date:	10/26/2007	**NPL Status:**	Non NPL
CERCLIS ID #:	MSN000407423	**Incident Category:**	Removal Assessment
RCRIS ID #:		**Contract #**	

Site Description
The former 141-acre Gulf States Creosoting Company is located at 1625 Flowood Drive (Mississippi Hwy 468), Flowood, Rankin County, Mississippi. (The geographic coordinates of the facility are 32'18'43.8" north latitude and 90'58'38.3" west longitude. The facility which operated as a wood treating facility until the mid 1950's is bound by railroad tracks to the north and east, an adjacent business to the south, and marshland/tributary of the Pearl River to the west. The facility is bound by natural barriers and is not fenced. The facility lies within an area comprised of mixed industrial, commercial, and residential uses.

Current Activities
On September 2007 Brian Striggow from EPA's Science and Ecosytem Support Division along with OSC's Alyssa Hughes and Jose Negron and Richard Ball from the Mississippi Department of Environmental Quality met at the Site to conduct an investigation to ascertain the existence of a buried pipe system that could be contributing to the discharge of creosote sludge onto the oxbow lakes adjacent to the site of the former wood treating facility.

Although an underground pipe network was identified and traced from the site to the marsh there is no evidence of the pipe being a conduit for creosote from the former treatment area onto the marsh. The investigation did not reveal any trace of creosote inside the pipe.

Based on available information it is EPA's determination that there is no clear evidence that establishes that the former wood treating area is the source of creosote at the oxbow. Furthermore ERRB has not identified a migration path that links the suspected source (the former treatment wood treating area) with the presence of creosote at the oxbow.

Planned Removal Actions
Based on availalable information the OSC finds that a time critical removal action at the Gulf States is is not warranted at this time.

Next Steps
ERRB will coordinate with the Site Assesment Branch.

Key Issues
NONE

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
Intramural Costs				
Total Site Costs	$0.00	$0.00	$0.00	0.00%

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

www.epaosc.net/GulfStatesCreosotingFlowoodMS

RSE Coord.

12/11/07

City of Flowood
- blended system

Reference 20
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

- City of Jackson
66,000 connections
→ surface water intake
- backup wells for emergency only

Gulf States

Radial Well Search

Results Report

Date of Report: 5/29/2008

0 to 1/4 Mile Buffer

Public Water Supply Wells

PWS Code	PWS System Name	OLWR#	USGS ID#	County#	Aquifer Code	Well Status	Elevation	Screentop	Screenbase	Service Connections	System Type
610075-01	CITY OF FLOWOOD-N. WELL	0		121		Inactive (I)	0	0	0	1500	C

Number of Public Water Supply Wells within 0 to 1/4 mile buffer: 1

1/4 to 1/2 Mile Buffer

Public Water Supply Wells

PWS Code	PWS System Name	OLWR#	USGS ID#	County#	Aquifer Code	Well Status	Elevation	Screentop	Screenbase	Service Connections	System Type
610075-02	CITY OF FLOWOOD-N. WELL	0		121		Inactive (I)	0	0	0	1500	C

Number of Public Water Supply Wells within 1/4 to 1/2 mile buffer: 1

Source Water Protection Areas

PWS System ID	PWS System Name
610075	CITY OF FLOWOOD-N. WELL

Number of Source Water Protection Areas within 1/4 to 1/2 mile buffer: 1

1/2 to 1 Mile Buffer

Source Water Protection Areas

PWS System ID	PWS System Name
610075	CITY OF FLOWOOD-N. WELL

Number of Source Water Protection Areas within 1/2 to 1 mile buffer: 1

1 to 2 Mile Buffer

Public Water Supply Wells

PWS Code	PWS System Name	OLWR#	USGS ID#	County#	Aquifer Code	Well Status	Elevation	Screentop	Screenbase	Service Connections	System Type
610034-01	BIERDEMAN RENTALS	0	K130	121	CCKF	No Data (N3)	275	275	295	110	C
610075-05	CITY OF FLOWOOD-N. WELL	3815	K175	121	SPRT	Active	265	482	562	1500	C
250034-03	UNIVERSITY OF MS MEDICAL CNTR	12890	H194	49	SPRT	Active	335	680	760	10	P
250008-01	CITY OF JACKSON	0		49		Surface Water Well	0	0	0	66619	C

Number of Public Water Supply Wells within 1 to 2 mile buffer: 4

Source Water Protection Areas

PWS System ID	PWS System Name
610075	CITY OF FLOWOOD-N. WELL
610017	CITY OF PEARL
250034	UNIVERSITY OF MS MEDICAL CNTR

Number of Source Water Protection Areas within 1 to 2 mile buffer: 3

2 to 3 Mile Buffer

Public Water Supply Wells

PWS Code	PWS System Name	OLWR#	USGS ID#	County#	Aquifer Code	Well Status	Elevation	Screentop	Screenbase	Service Connections	System Type
610094-01	GULFLINE INDUSTRIAL PARK	11319	K076	121	SPRT	No Data (N3)	275	706	771	4	P
610078-01	CAPITAL 66	0		121		Closed	0	0	0	5	N
610075-07	CITY OF FLOWOOD-N. WELL	14933	F070	121	SPRT	Active	275	750	830	1500	C
610017-03	CITY OF PEARL	1300	K120	121	SPRT	Active	315	811	860	7351	C
610017-02	CITY OF PEARL	1302	K119	121	SPRT	Active	320	850	910	7351	C
610037-01	CLEVELAND'S TRAILER PARK	0	K093	121	CCKF	Active	267	655	695	135	C
610017-05	CITY OF PEARL	1295	K174	121	SPRT	Active	270	550	610	7351	C
250034-02	UNIVERSITY OF MS MEDICAL CNTR	3368	H63	49	SPRT	Active	326	694	754	10	P
250034-01	UNIVERSITY OF MS MEDICAL CNTR	3369	H064	49	SPRT	Active	332	716	776	10	P

Number of Public Water Supply Wells within 2 to 3 mile buffer: 9

Source Water Protection Areas

PWS System ID	PWS System Name
610075	CITY OF FLOWOOD-N. WELL
610037	CLEVELAND'S TRAILER PARK
610023	CITY OF RICHLAND
610017	CITY OF PEARL
250034	UNIVERSITY OF MS MEDICAL CNTR

Number of Source Water Protection Areas within 2 to3 mile buffer: 5

3 to 4 Mile Buffer

private well

Public Water Supply Wells

PWS Code	PWS System Name	OLWR#	USGS ID#	County#	Aquifer Code	Well Status	Elevation	Screentop	Screenbase	Service Connections	System Type
610037-04	CLEVELAND'S TRAILER PARK	0	K188	121	CCKF	Active	265	520	555	135	C
610037-03	CLEVELAND'S TRAILER PARK	0	?	121	CCKF	Active	260	560	580	135	C
610037-02	CLEVELAND'S TRAILER PARK	0	K142	121	CCKF	Active	260	560	600	135	C
610023-03	CITY OF RICHLAND	14116	K169	121	SPRT	Active	265	749	829	2157	C
610017-04	CITY OF PEARL	1303	K095	121	SPRT	Active	315	1093	1143	7351	C
250031-01	PRIMOS NORTHGATE RESTAURANT	0		49		Closed	0	0	0	1	N
250028-03	JACKSON MUNICIPAL AIRPORT	0	K199	121	CCKF	Active	310	453	533	1	P
250028-02	JACKSON MUNICIPAL AIRPORT	0	K28	121	CCKF	Active	320	568	618	1	P
250028-01	JACKSON MUNICIPAL AIRPORT	0	F26	121	CCKF	Active	320	554	614	1	P

Number of Public Water Supply Wells within 3 to 4 mile buffer: 9

Source Water Protection Areas

PWS System ID	PWS System Name
610037	CLEVELAND'S TRAILER PARK
610023	CITY OF RICHLAND
610017	CITY OF PEARL
250028	JACKSON MUNICIPAL AIRPORT

Number of Source Water Protection Areas within 3 to 4 mile buffer: 4

fire well

U.S. EPA REGION IV

SDMS

Unscannable Material Target Sheet

DocID: 1042417 Site ID: MSN000407423

Site Name: Gulf States Creosoting Company

Nature of Material:

Map:	☑	Computer Disks:	☐
Photos:	☐	CD-ROM:	☐
Blueprints:	☐	Oversized Report:	☐
Slides:	☐	Log Book:	☐

Other (describe): Radius Map

Amount of material:

* Please contact the appropriate Records Center to view the material *

Acronyms

Office of Land & Water Codes

Use Code	Description
AB	ABONDONED
CH	CHICKEN HOUSE
CO	COMMERCIAL
CP	CATHODIC PROTECTION
DO	DOMESTIC (HOME) WELL
DU	DUPLICATE
DW	DEWATERING
DY	DESTROYED
EC	EROSION CONTROL
EX	EXEMPT
FA	*FLOW AUGMENTATION*
FC	FISH CULTURE
FL	FLOOD PROTECTION
FP	*FIRE PROTECTION*
GW	GRAVEL WASH
IN	INDUSTRIAL
IP	IMPOUNDMENT
IR	IRRIGATION
IT	INSTITUTIONAL
LS	LIVESTOCK
MU	MUNICIPAL
ND	NEVER DRILLED
NI	NO INFORMATION
NR	*NOR RENEWED*
OB	OBSERVATION WELL
OI	OIL WELL
OT	*OTHER*
PW	PRIVATE WATER SYSTEM
RE	RECREATIONAL
RM	REMEDIATION WELL
RW	RELIEF WELL
SB	STANDBY
SC	SEDIMENT CONTROL
TH	TEST HOLE
TR	WELL HAS TRANSDUCER
UN	UNUSED
WA	RURAL WATER ASSOCIATION
XX	UNKNOWN
XX1	TEMPORARY YMD1
XX2	TEMPORARY YMD2
XX3	TEMPORARY YMD3
XX4	TEMPORARY YMD4

Public Water Supply Codes

System Type	Description
P	Non-Transient Non-Community
C	Community
N	Transient Non-Community Public Water Systems

USGS WATSTORE Codes

Primary Use Code	Description
A	Air conditioning
B	Bottling
C	Commerical
D	Dewater
E	*Power generation*
G	Fire protection
H	Domestic
I	*Irrigation*
J	Industrial (cooling)
K	Mining
M	Medicinal
N	Industrial
P	Public supply
Q	Aquaculture (in remarks)
R	Recreation
S	Stock supply
T	Institutional
U	Unused
Y	Desalination
Z	Other (explain)

County Codes

County # / FIPS Code	County Name	County # / FIPS Code	County Name
1	Adams	83	Leflore
3	Alcorn	85	Lincoln
5	Amite	87	Lowndes
7	Attala	89	Madison
9	Benton	91	Marion
11	Bolivar	93	Marshall
13	Calhoun	95	Monroe
15	Carroll	97	Montgomery
17	Chickasaw	99	Neshoba
19	Choctaw	101	Newton
21	Claiborne	103	Noxubee
23	Clarke	105	Oktibbeha
25	Clay	107	Panola
27	*Coahoma*	109	*Pearl River*
29	Copiah	111	Perry
31	Covington	113	Pike
33	Desoto	115	Pontotoc
35	Forrest	117	Prentiss
37	Franklin	119	Quitman
39	George	121	Rankin
41	Greene	123	Scott
43	Grenada	125	Sharkey
45	Hancock	127	Simpson
47	Harrison	129	Smith
49	Hinds	131	Stone
51	Holmes	133	Sunflower
53	*Humphreys*	135	Tallahatchie
55	Issaquena	137	Tate
57	Itawamba	139	Tippah
59	Jackson	141	Tishomingo
61	Jasper	143	Tunica
63	Jefferson	145	Union
65	Jefferson Davis	147	Walthall
67	Jones	149	Warren
69	Kemper	151	Washington
71	Lafayette	153	Wayne
73	Lamar	155	Webster
75	Lauderdale	157	Wilkinson
77	Lawrence	159	Winston
79	Leake	161	Yalobusha
81	Lee	163	Yazoo

Aquifer Codes

Aquifer Code	Aquifer Name
ALVM	Alluvial aquifer
CCKF	Cockfield aquifer
COFF	Coffee Sand aquifer
COKR	Coker aquifer
CRNL	Citronelle aquifer
CTHL	Catahoula aquifer
ETMS	Eutaw-McShan aquifer
FRHL	Forest Hill aquifer
GORD	Gordo aquifer
GRMF	Graham Ferry aquifer
HBRG	Hattiesburg aquifer
MSSV	Massive Sand aquifer (lower COKR)
MUWX	Meridian-Upper Wilcox aquifer
MOCN	Miocene aquifer system (includes CTHL, GRMF, HBRG, or PCGL)
MRVA	Mississippi River Alluvial aquifer
OLGC	Oligocene aquifer (FRHL not included)
PLZC	*Paleozoic aquifer*
PCGL	Pascagoula aquifer
RPLY	Ripley aquifer
SPRT	*Sparta aquifer system*
TRCS	Terrace deposits (undifferentiated)
WLCXL	Lower Wilcox aquifer
WLCSM	*Middle Wilcox aquifer*
WNTL	Winona-Tallahatta aquifer

Disclaimer

This report produced by the Mississippi Department of Environmental Quality (MDEQ), Groundwater Assessment and Remediation Division. The sources for the data shown are from the Mississippi Automated Resource Information System (MARIS), United States Geological Survey (USGS), and MDEQ. The Mississippi Department of Environmental Quality makes no warranties, expressed or implied, as to the accuracy, completeness, currentness, reliability, or suitability for any particular purpose, of the data contained in this report. In some cases data will be duplicated as the different agencies track and name their sites differently.

DCN: RFW-GSC-0002

IF YOU KNOW	MULTIPLY BY	TO FIND
LENGTH		
inches	2.540	centimeters
feet	30.480	centimeters
yards	0.914	meters
miles	1.609	kilometers

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CONTENTS

PAGE	REFERENCE	DATE

6/3/02

1730 EST EPA Michael Arnett, Brian Striggow, ~~Don~~ Chris Decker, & Shanieka Pennamon, WESTON-START arrive @ the former Gulf States Creosoting Company property. The property is now comprised of a horse farm & Con Steel Company, Inc.

- Arnett says the creosoting activities occurred in the southeastern portion of the property.
- The owner of the horse farm, Jim Webb, said the horse farm portion of the property underwent a Phase I Site Assessment by Trust Mark Bank.
- The horse farm has been on the property ≈ 7 yrs.
- Webb said the Phase I did not reveal anything in the soil or water.
- The plant itself comprised ≈ 8 acres (of which is now Con Steel Company, Inc.). The horse farm owners own the property north of Con Steel Co. Inc. & south of Con Steel Co. Inc.

6/3/02

- The property is > 100 acres in size.
- There are gas wells on-site which are 1100 to 1200' deep. There is a fenced (chain-link) surrounding an observation well for Coke Pipeline (they used to be the owners of the pipeline.
- The old railroad spurs that ran along the horse farm were used by rail cars which were loaded with cross ties.
- All railroad bed ties are now gone.
- The horse farm property houses two helicopters for Channel 8 News.
- The levee that runs along the eastern edge of the property is an easement.
- The property (horse farm & Steel Co.) is zoned I2 - heavy use industrial.
- The Metal barn located on the horse farm portion of the property is used a tractor barn. it used to be an old storage building during Gulf States Creosoting Operations.
- The Gulf States Creosoting Operation closed in 1953 or 1954 (according to)

6/3/02

Webb.
- Creosoting bldg & sloush operations were housed in the area where the current Con Steel Co. Inc. is located.
- The old foundation for the former Gulf States Creosoting building was recently removed. The old foundation was north of the new bldg. & flag pole.
- Con Steel Company is located @ 1625 Flowood Dr.
- Love Petroleum owned the Creosote Slough. Love Petroleum was bought out by a company out of Midland, TX.
- Webb stated people fish in the Pearl River.
- Currently, the majority of the property is covered in green grass.

1900 EPA & START off-site.

- Note: People in the area obtain their water from the City of Flowood.

6/4/02

0830 EPA Miko Arnett, Brian Striggow, Chris Decker : START Shaniela Tennison arrive on-site @ Gulf States Steel Creosoting : Meet w/ state representatives Philip Weathersby : Richard Bald, MDEQ.

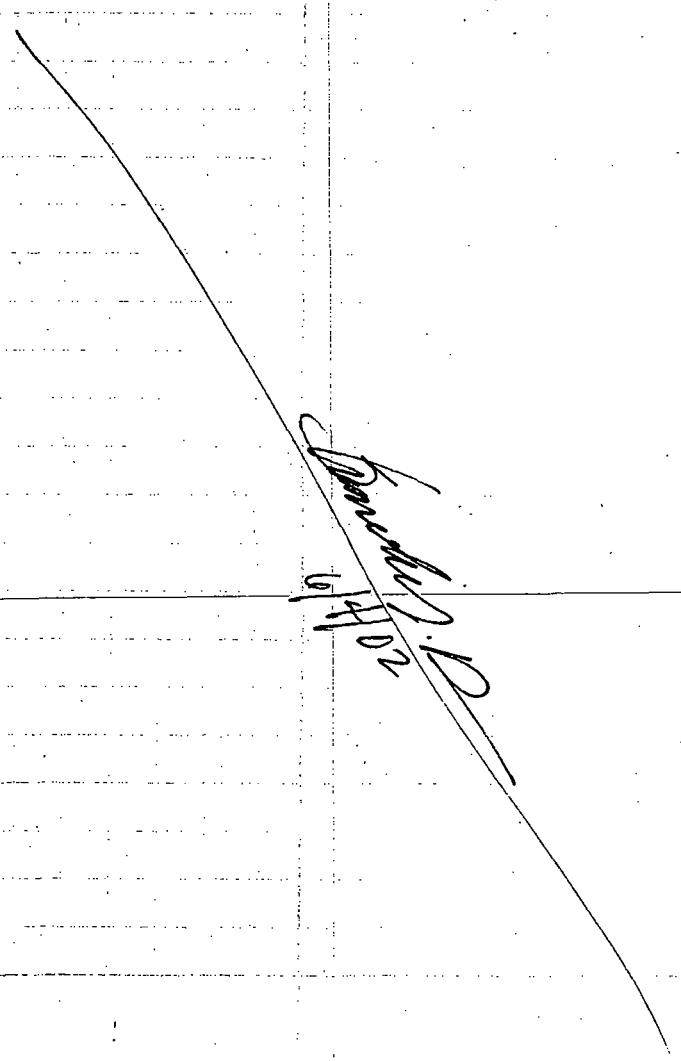
- MDEQ personnel state wells on the property are used for gas storage. The City of Jackson's surface water intake is just upstream of the former site on the west side of the river (Pearl).
- Do recon : go down to Creosote Slough. Can smell creosote. Channel which is an entry (maybe) to Creosote Slough Lake. Slough Lake flows w/ Pearl River. May have groundwater to surface water pathway.
- Box turtle on-site.

Note: Richard Bald States people fish on the other side (west) side of the levee.

- Possible eagle nested. (Weathersby)
- Commercial fishing on river (catfish) possibly. (Weathersby).

6/4/02

- fish in northern portion of Creosote Slough Lake.
- Cut-through Creosote lake.



Date	Photo#	Description	Photo	Wit.	Dir
6/4/02	27	Slough Lake	SP	BS	S
"	26	Slough Lake	SP	MA	SW
"	25	N. Portion of Slough Lake	SP	BS	N
	24	Overview of Property	SP	MA	NE
	23	" " "	SP	MA	SE
	22	" " "	SP	MA	NW
	21	" " "	SP	MA	S
	20	Drainage Ditch	SP	MA	S
	19	Gas well	SP	MA	S
	18	Back of ConSteel Co.	SP	MA	SE
	17	Overview of horse farm	SP	MA	NW
	16	Overview of ConSteel Co.	SP	MA	SW
	15	" " "	SP	MA	SW
	14	ConSteel Co. barren soil	SP	—	NW
6/4/02	13	Upper Channels of Pearl River	SP	—	

6/4/02

Note: In drainage ditch that runs along the western portion of the property contains "chunks" of material that has petroleum odor.
- WLBT Channel 3 helicopter stored on horsefarm property.
- Several barren areas on ConSteel Co. portion of property.

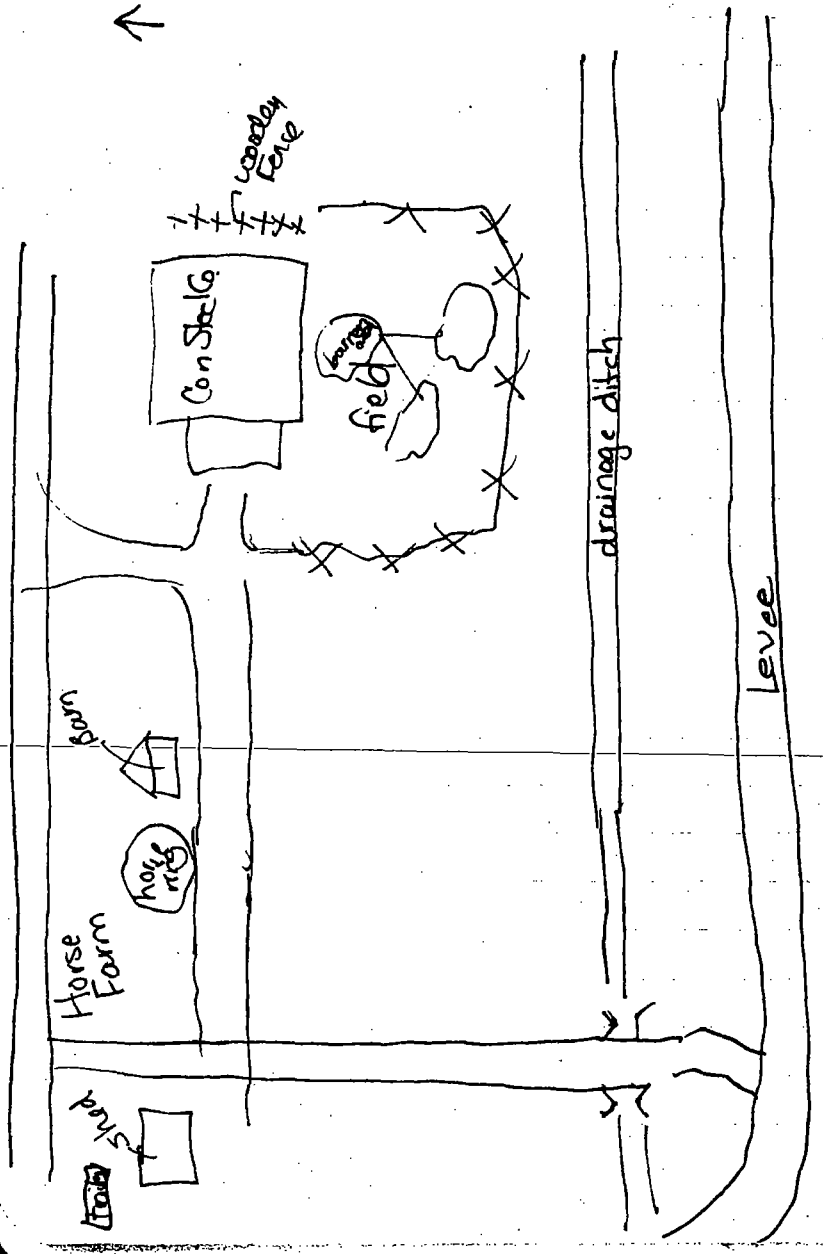
1135 EPA, State, & START personnel off-site to go to background. The background will be Jackson Prep School located on Hwy 25.

1200 Leave Prep School & break for lunch.

1245 Leave lunch area & head to Sanford Products for recon.

6/4/02

6/4/02



6/4/02

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9/16/03

Late Note:

- Pennamon remembers during site reconnaissance that no private wells were noticed.

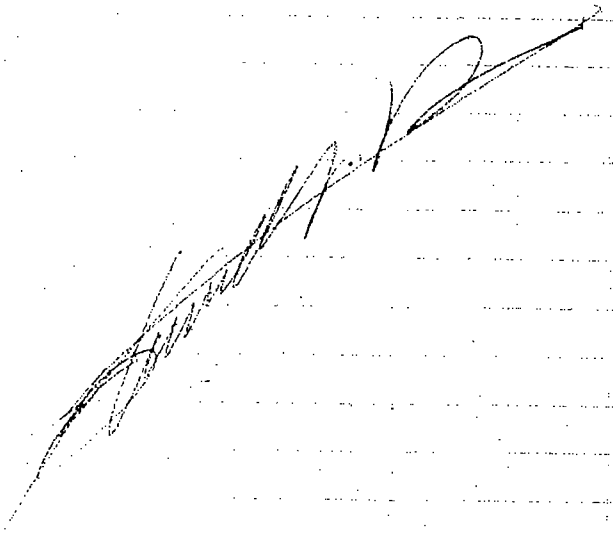
- On ~~8/~~ 9/12/03, Pennamon spoke w/ Brian Striggow, EPA SESD who confirmed that the marsh area adjacent to (west of) the Gulf States Creosoting property flows into the Pearl River.

- There were no residential structures within 200' of the facility.

- On ~~August~~ April 1, 2003, STARTS Joe Baer & Shaneka Pennamon met w/ EPA's Michael Arnett, Brian Striggow, & Brian Farrier. During the meeting, sample strategy was discussed & it was decided in order to determine if any contamination was flowing into the Pearl River between the

9/16/03

background sample & the furthest proposed downstream sample, a control sample needs to be collected from Prairie Branch. Any influence from contaminants in Prairie Branch may show up in the interval between the background sample & the furthest downstream sample (GS-07-SD). The added sample (to be collected from Prairie Branch) is GS-08-SD.



Reference 22
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

U.S. Census Bureau
State & County QuickFacts

Rankin County, Mississippi

People QuickFacts	Rankin County	Mississippi
Population, 2006 estimate	135,830	2,910,540
Population, percent change, April 1, 2000 to July 1, 2006	17.8%	2.3%
Population, 2000	115,327	2,844,658
Persons under 5 years old, percent, 2006	6.9%	7.2%
Persons under 18 years old, percent, 2006	24.4%	26.1%
Persons 65 years old and over, percent, 2006	10.5%	12.4%
Female persons, percent, 2006	50.9%	51.6%
White persons, percent, 2006 (a)	79.4%	60.9%
Black persons, percent, 2006 (a)	18.9%	37.1%
American Indian and Alaska Native persons, percent, 2006 (a)	0.2%	0.5%
Asian persons, percent, 2006 (a)	0.8%	0.8%
Native Hawaiian and Other Pacific Islander, percent, 2006 (a)	Z	Z
Persons reporting two or more races, percent, 2006	0.6%	0.7%
Persons of Hispanic or Latino origin, percent, 2006 (b)	1.8%	1.8%
White persons not Hispanic, percent, 2006	77.8%	59.3%
Living in same house in 1995 and 2000, pct 5 yrs old & over	51.0%	58.5%
Foreign born persons, percent, 2000	1.6%	1.4%
Language other than English spoken at home, pct age 5+, 2000	3.6%	3.6%
High school graduates, percent of persons age 25+, 2000	81.8%	72.9%
Bachelor's degree or higher, pct of persons age 25+, 2000	23.8%	16.9%
Persons with a disability, age 5+, 2000	18,789	607,570
Mean travel time to work (minutes), workers age 16+, 2000	25.5	24.6
Housing units, 2006	53,180	1,241,489
Homeownership rate, 2000	77.1%	72.3%
Housing units in multi-unit structures, percent, 2000	12.5%	13.3%
Median value of owner-occupied housing units, 2000	$98,600	$71,400
Households, 2000	42,089	1,046,434
Persons per household, 2000	2.62	2.63
Median household income, 2004	$47,580	$34,278
Per capita money income, 1999	$20,412	$15,853
Persons below poverty, percent, 2004	10.6%	19.3%

Business QuickFacts	Rankin County	Mississippi
Private nonfarm establishments, 2005	3,092	60,542[1]
Private nonfarm employment, 2005	48,386	926,952[1]
Private nonfarm employment, percent change 2000-2005	21.5%	-3.1%[1]
Nonemployer establishments, 2005	9,532	163,761
Total number of firms, 2002	10,238	187,602
Black-owned firms, percent, 2002	S	13.3%

American Indian and Alaska Native owned firms, percent, 2002	F	0.4%
Asian-owned firms, percent, 2002	F	1.6%
Native Hawaiian and Other Pacific Islander owned firms, percent, 2002	F	0.1%
Hispanic-owned firms, percent, 2002	F	0.7%
Women-owned firms, percent, 2002	23.1%	25.1%
Manufacturers shipments, 2002 ($1000)	1,401,783	38,276,054
Wholesale trade sales, 2002 ($1000)	1,303,711	19,215,751
Retail sales, 2002 ($1000)	1,392,855	25,017,531
Retail sales per capita, 2002	$11,448	$8,724
Accommodation and foodservices sales, 2002 ($1000)	135,948	5,486,105
Building permits, 2006	1,562	16,618
Federal spending, 2004 ($1000)	531,893	22,337,697[1]

Geography QuickFacts	**Rankin County**	**Mississippi**
Land area, 2000 (square miles)	774.52	46,906.96
Persons per square mile, 2000	148.8	60.6
FIPS Code	121	28
Metropolitan or Micropolitan Statistical Area	Jackson, MS Metro Area	

1: Includes data not distributed by county.

(a) Includes persons reporting only one race.
(b) Hispanics may be of any race, so also are included in applicable race categories.

D: Suppressed to avoid disclosure of confidential information
F: Fewer than 100 firms
FN: Footnote on this item for this area in place of data
NA: Not available
S: Suppressed; does not meet publication standards
X: Not applicable
Z: Value greater than zero but less than half unit of measure shown

Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, Census of Population and Housing, Small Area Income and Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits, Consolidated Federal Funds Report
Last Revised: Wednesday, 02-Jan-2008 15:10:38 EST

Reference 23
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

ENDANGERED SPECIES OF MISSISSIPPI

MISSISSIPPI NATURAL HERITAGE PROGRAM

- 2002 -

SPECIES NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS
BIVALVIA				
ACTINONAIAS LIGAMENTINA	MUCKET	G5	S1	
CYCLONAIAS TUBERCULATA	PURPLE WARTYBACK	G5	S1	
ELLIPTIO ARCTATA	DELICATE SPIKE	G3G4	S1	
ELLIPTIO DILATATA	SPIKE	G5	S1	
EPIOBLASMA BREVIDENS	CUMBERLANDIAN COMBSHELL	G1	S1	(LE,XN)
EPIOBLASMA PENITA	SOUTHERN COMBSHELL	G1	S1	LE
EPIOBLASMA TRIQUETRA	SNUFFBOX	G3	S1	
LAMPSILIS PEROVALIS	ORANGE-NACRE MUCKET	G2	S1	LT
LEXINGTONIA DOLABELLOIDES	SLABSIDE PEARLYMUSSEL	G2	S1	C
MEDIONIDUS ACUTISSIMUS	ALABAMA MOCCASINSHELL	G1	S1	LT
PLETHOBASUS CYPHYUS	SHEEPNOSE	G3	S1	
PLEUROBEMA CURTUM	BLACK CLUBSHELL	G1	SH	LE
PLEUROBEMA DECISUM	SOUTHERN CLUBSHELL	G1G2	S1S2	LE
PLEUROBEMA MARSHALLI	FLAT PIGTOE	GH	SH	LE
PLEUROBEMA PEROVATUM	OVATE CLUBSHELL	G1	S1	LE
PLEUROBEMA RUBRUM	PYRAMID PIGTOE	G2	S1	
PLEUROBEMA TAITIANUM	HEAVY PIGTOE	G1	SH	LE
POTAMILUS CAPAX	FAT POCKETBOOK	G1	S1	LE
POTAMILUS INFLATUS	INFLATED HEELSPLITTER	G1	SH	LT
PTYCHOBRANCHUS FASCIOLARIS	KIDNEYSHELL	G4G5	S1	
QUADRULA CYLINDRICA CYLINDRICA	RABBITSFOOT	G3T3	S1	
QUADRULA METANEVRA	MONKEYFACE	G4	SH	
QUADRULA STAPES	STIRRUPSHELL	GH	SH	LE
MALACOSTRACA				
FALLICAMBARUS GORDONI	CAMP SHELBY BURROWING CRAWFISH	G1	S1	C
INSECTA				
NICROPHORUS AMERICANUS	AMERICAN BURYING BEETLE	G2G3	SX	LE
OSTEICHTHYES				
ACIPENSER OXYRINCHUS DESOTOI	GULF STURGEON	G3T2	S1	LT
CRYSTALLARIA ASPRELLA	CRYSTAL DARTER	G3	S1	
ETHEOSTOMA BLENNIOIDES	GREENSIDE DARTER	G5	SH	
ETHEOSTOMA RUBRUM	BAYOU DARTER	G1	S1	LT
NOTROPIS BOOPS	BIGEYE SHINER	G5	S1	
NOTROPIS CHALYBAEUS	IRONCOLOR SHINER	G4	S2	
NOTURUS EXILIS	SLENDER MADTOM	G5	S1	
NOTURUS MUNITUS	FRECKLEBELLY MADTOM	G3	S2	
NOTURUS STIGMOSUS	NORTHERN MADTOM	G3	S1	
PERCINA AURORA	PEARL DARTER	G1	S1	C
PERCINA PHOXOCEPHALA	SLENDERHEAD DARTER	G5	S1	
PHENACOBIUS MIRABILIS	SUCKERMOUTH MINNOW	G5	S1	
PHOXINUS ERYTHROGASTER	SOUTHERN REDBELLY DACE	G5	S2	
SCAPHIRHYNCHUS ALBUS	PALLID STURGEON	G1	S1	LE
SCAPHIRHYNCHUS SUTTKUSI	ALABAMA STURGEON	G1	S1	LE

* Note: Listed plants are only protected federally, no state protection is provided.

Cite the list as:
Mississippi Natural Heritage Program. 2002. Endangered Species of Mississippi. *Museum of Natural Science, Mississippi Dept. of Wildlife, Fisheries, and Parks, Jackson, MS. 2 pp.

SPECIES NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS
AMPHIBIA				
AMPHIUMA PHOLETER	ONE-TOED AMPHIUMA	G3	S1	
ANEIDES AENEUS	GREEN SALAMANDER	G3G4	S1	
EURYCEA LUCIFUGA	CAVE SALAMANDER	G5	S1	
GYRINOPHILUS PORPHYRITICUS	SPRING SALAMANDER	G5	S1	
RANA SEVOSA	DARK GOPHER FROG	G1	S1	PE
REPTILIA				
CARETTA CARETTA	LOGGERHEAD; CABEZON	G3	S1B,SZN	LT
CHELONIA MYDAS	GREEN TURTLE	G3	SZN	(LE,LT)
DERMOCHELYS CORIACEA	LEATHERBACK; TINGLAR	G2	SZN	LE
DRYMARCHON CORAIS COUPERI	EASTERN INDIGO SNAKE	G4T3	S1	LT
ERETMOCHELYS IMBRICATA	HAWKSBILL; CAREY	G3	SZN	LE
FARANCIA ERYTROGRAMMA	RAINBOW SNAKE	G5	S2	
GOPHERUS POLYPHEMUS	GOPHER TORTOISE	G3	S2	(PS:LT)
GRAPTEMYS FLAVIMACULATA	YELLOW-BLOTCHED MAP TURTLE	G2	S2	LT
GRAPTEMYS NIGRINODA	BLACK-KNOBBED MAP TURTLE	G3	S2	
GRAPTEMYS OCULIFERA	RINGED MAP TURTLE	G2	S2	LT
HETERODON SIMUS	SOUTHERN HOGNOSE SNAKE	G2	SH	
LEPIDOCHELYS KEMPII	KEMP'S OR ATLANTIC RIDLEY	G1	S1N	LE
PITUOPHIS MELANOLEUCUS LODINGI	BLACK PINE SNAKE	G4T3	S2	C
PSEUDEMYS POP 1	MISSISSIPPI REDBELLY TURTLE	G?	S1	
AVES				
CAMPEPHILUS PRINCIPALIS	IVORY-BILLED WOODPECKER	GH	SX	LE
CHARADRIUS ALEXANDRINUS TENUIROSTRIS	SOUTHEASTERN SNOWY PLOVER	G4T3Q	S2B,SZN	
CHARADRIUS MELODUS	PIPING PLOVER	G3	SZN	(LE,LT)
FALCO PEREGRINUS	PEREGRINE FALCON	G4	SZN	(PS:LE)
GRUS CANADENSIS PULLA	MISSISSIPPI SANDHILL CRANE	G5T1	S1	LE
HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	G4	S1B,S2N	(PS:LT,PDL)
MYCTERIA AMERICANA	WOOD STORK	G4	SZN	(PS:LE)
PELECANUS OCCIDENTALIS	BROWN PELICAN	G4	S1N	(PS:LE)
PICOIDES BOREALIS	RED-COCKADED WOODPECKER	G3	S1	LE
STERNA ANTILLARUM ATHALASSOS	INTERIOR LEAST TERN	G4T2Q	S3?B	(PS:LE)
THRYOMANES BEWICKII	BEWICK'S WREN	G5	S2S3B,SZN	
VERMIVORA BACHMANII	BACHMAN'S WARBLER	GH	SXB	LE
MAMMALIA				
MYOTIS GRISESCENS	GRAY MYOTIS	G3	SAN	LE
MYOTIS SODALIS	INDIANA OR SOCIAL MYOTIS	G2	SAN	LE
PUMA CONCOLOR CORYI	FLORIDA PANTHER	G5T1	SH	LE
TRICHECHUS MANATUS	MANATEE	G2	SZ	LE
URSUS AMERICANUS	BLACK BEAR	G5	S1	(PS)
URSUS AMERICANUS LUTEOLUS	LOUISIANA BLACK BEAR	G5T2	S1	LT
ISOETOPSIDA				
* ISOETES LOUISIANENSIS	LOUISIANA QUILLWORT	G3	S2	LE
DICOTYLEDONEAE				
* APIOS PRICEANA	PRICE'S POTATO BEAN	G2	S1	LT
* LINDERA MELISSIFOLIA	PONDBERRY	G2	S2	LE
* SCHWALBEA AMERICANA	CHAFFSEED	G2	SH	LE

* Note: Listed plants are only protected federally, no state protection is provided.

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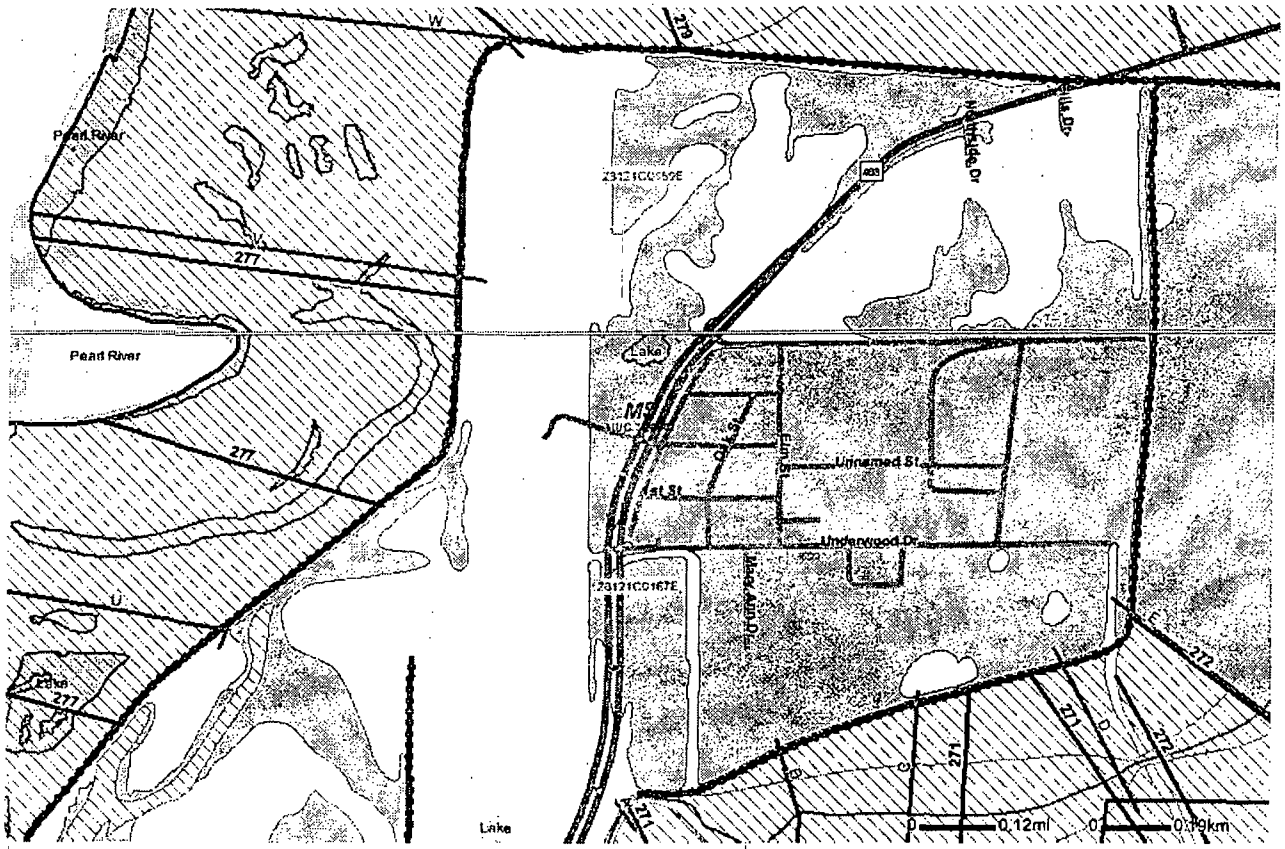


Legend

Cities
- Other Places
- Small Towns
- Small Cities
- State Largest Cities
- Major Cities

Completed LOMAs

Watershed (HUC)

LOMR's

DFIRM Panels

Bench Marks

Base Flood Elevation
- BFE with NGVD29 datum
- BFE with NAVD88 datum
- BFE with other datum

Cross Section Lines
- Cross Section with NGVD29 datum (cont)
- Cross Section with NAVD88 datum
- Cross Section with other datum

General Structures
- Culverts
- Foot Bridges
- Dams
- Levees
- Wing Walls

Flood Hazard Zones
- Zone A
- Zone AE
- Zone AH
- Zone AO
- Zone AR
- Zone A99
- Zone V
- Zone VE
- Zone D (cont)
- 0.2% Annual Chance Flood Hazard Zone

Floodways

Streams

Political Jurisdictions

Streets
- Major Highways
- Highways
- Major Roads
- Streets

States

Lakes, Major Rivers

Land Areas
- US
- Other Countries

Mapping Information Platform

Gulf States Creosote

This Map Is For Advisory Purposes Only

N W E S

Tuesday, 3 June 2008 09:39

FEMA

Reference 24
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

Reference 25
Gulf States Creosoting Company
Flowood, Rankin Co., Mississippi
MSN000407423

Project Note

Date: June 5, 2008	Gulf State Creosoting Company Flowood, Rankin County, Mississippi TDD Number: TNA-05-003-0045

Organization:
T N & Associates, Inc.,
Reg. 4 EPA START Contract
Name: Nairimer Berríos-Cartagena
Signature: Skowalski FOR

Subject: Gulf State Creosoting HRS (Hazard Ranking System) Wetland Frontage Determination

The enclosed information contains:

1. Wetland maps and descriptions (attached) for the 15 mile radius surrounding the subject site generated June 5, 2008 from the US Fish and Wildlife National Wetlands Survey Mapper website http://wetlandsfws.er.usgs.gov/.

Utilizing the US Fish and Wildlife National Wetlands Survey Mapping website, I was able to determine the location. The identification of the HRS target wetlands which are contiguous to the subject site can not be done due to the lack of data for the area on Geocortex Internet Mapping.

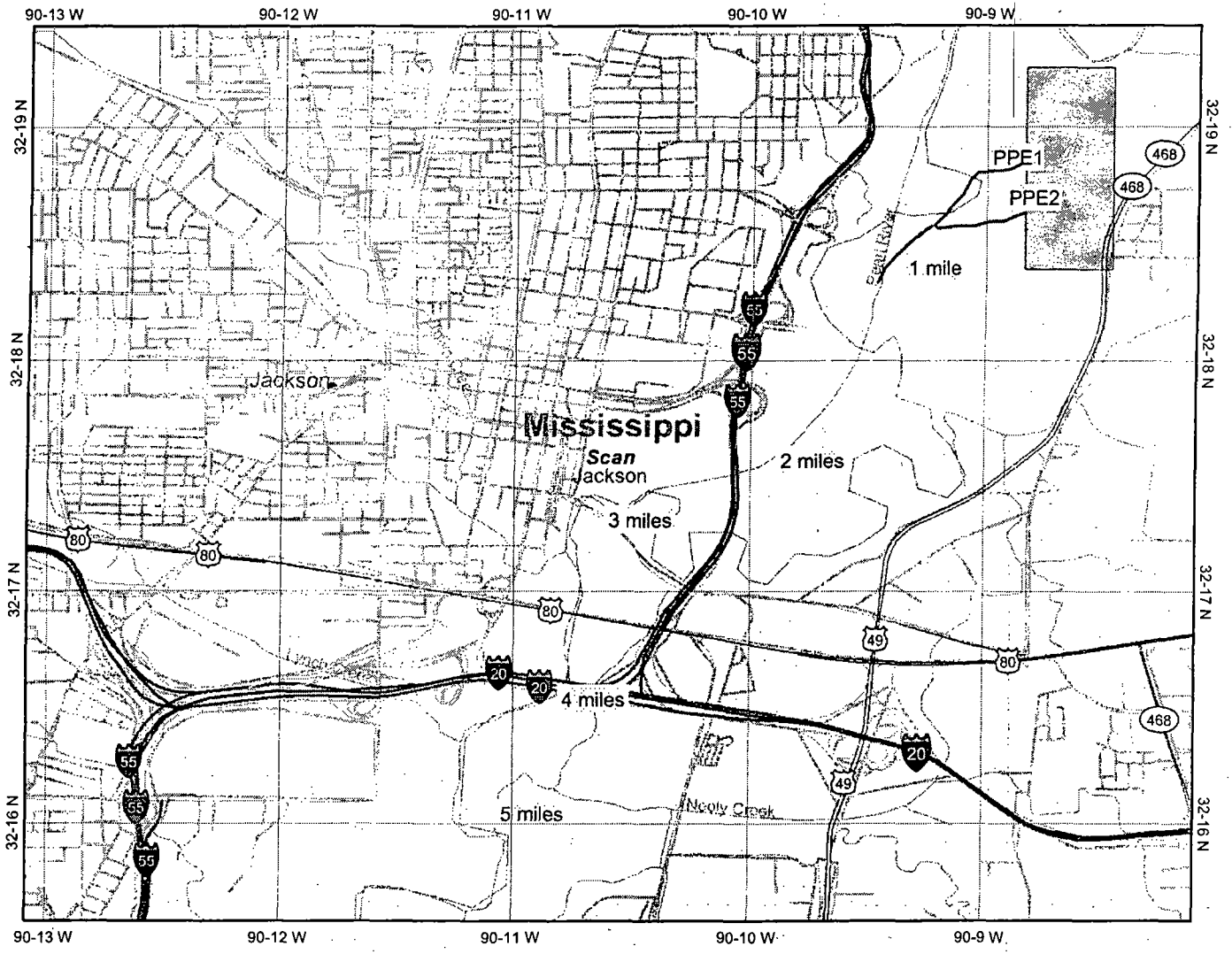
Gulf State Creosoting site has two Pollution Points of Entry (PPE) located at the western portion and both connect to the Pearl River downstream approximately one mile from the site. The 15 miles ends in the Pearl River.

I was not able to extrapolate the information from the USFWS maps onto a 1/50,000 scale topographic map of the Gulf State Creosoting nor measure the wetlands frontage.

RESPONSE REQUIRED
(x) None ( ) Phone call ( ) Memo ( ) Letter ( ) Report

cc: (x) File ( ) Project Manager ( ) Principal Investigator ( ) Other (specify)

Gulg St. Creosote #1

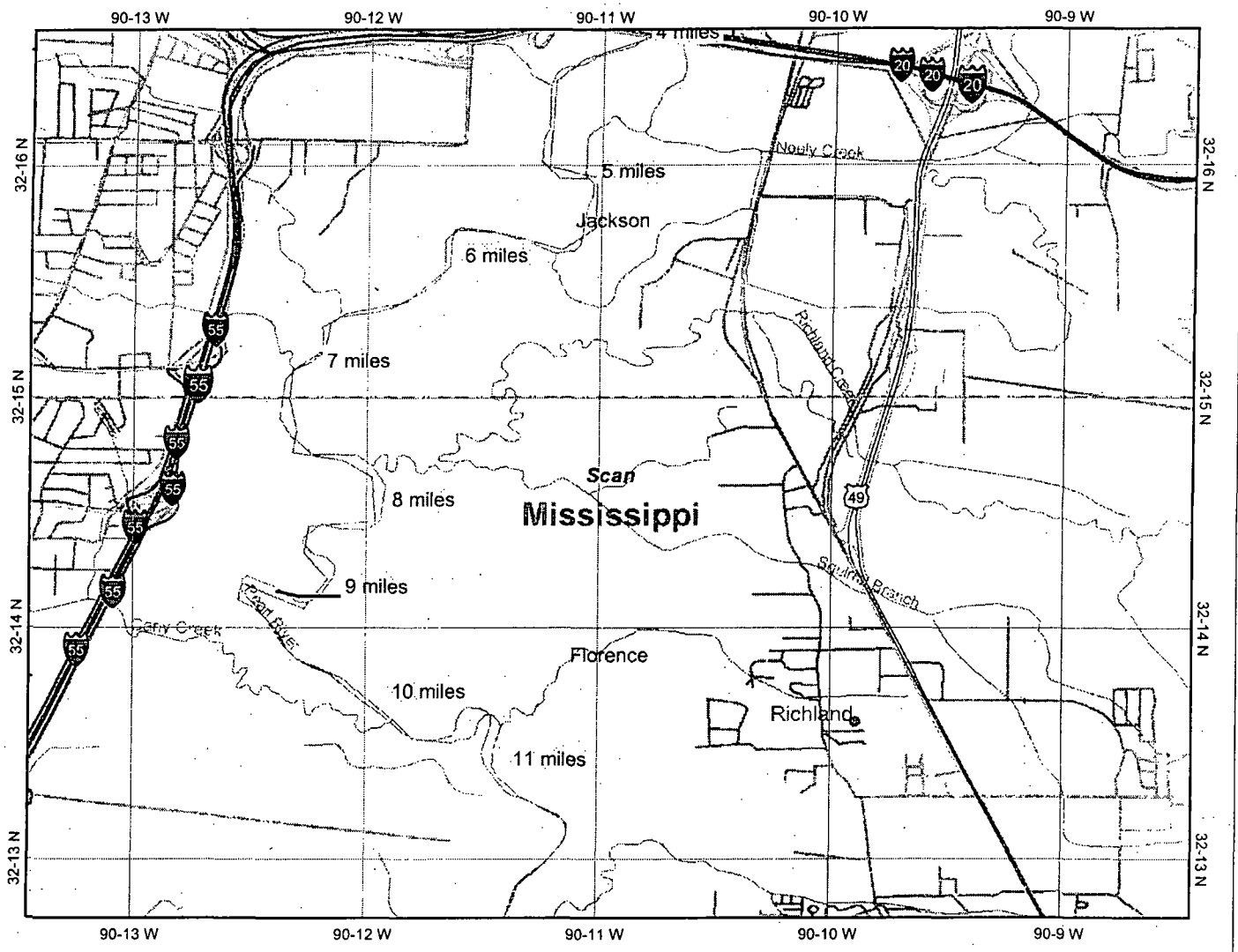


Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- States 100K
- South America
- North America

Scale: 1:50,000

Gulg St. Creosote #2



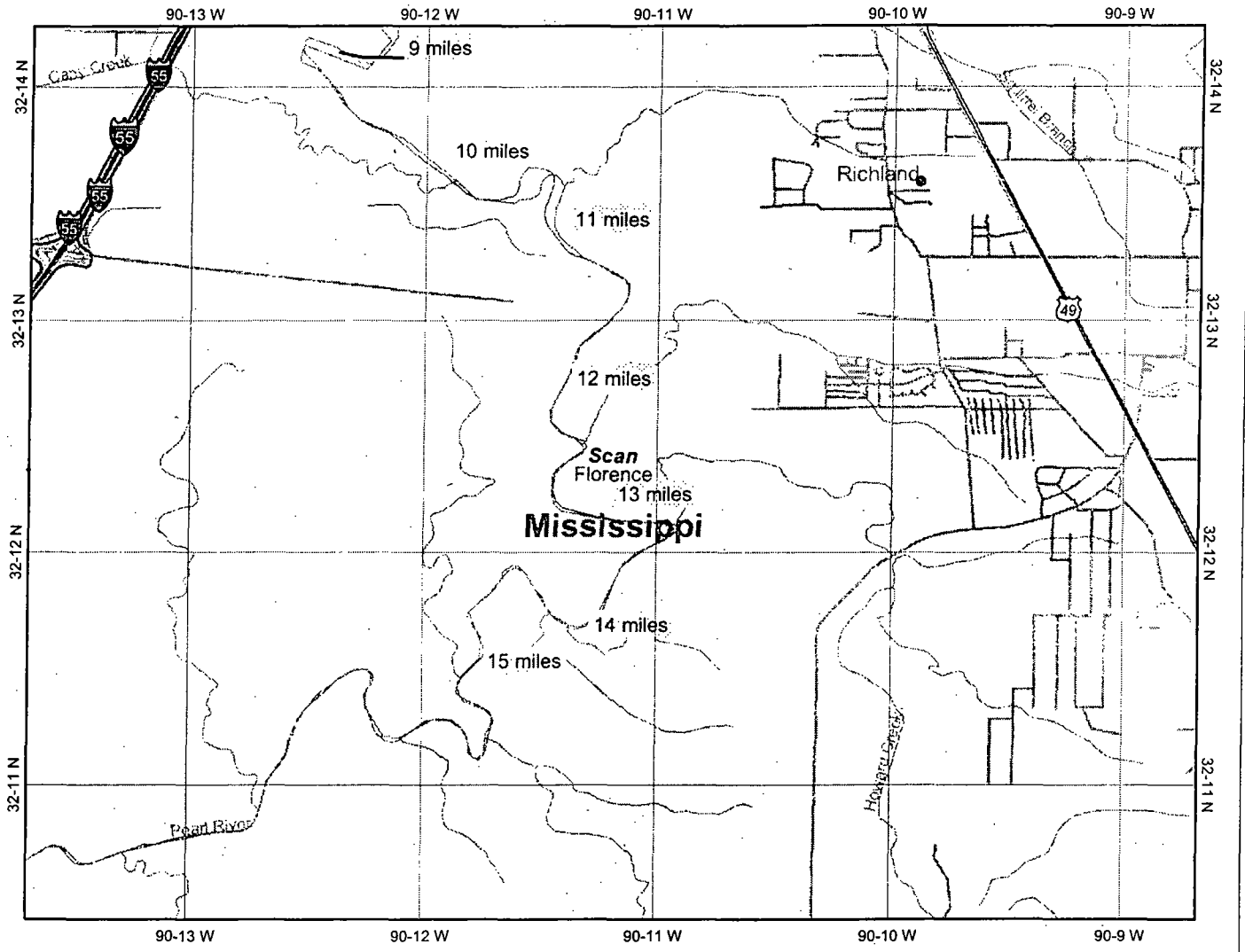
Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- States 100K
- South America
- North America

Scale: 1:50,000

Map center: 32° 14' 40" N, 90° 10' 57" W

Gulf St. Creosote #3



Map center: 32° 12' 21" N, 90° 11' 11" W

Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- States 100K
- South America
- North America

Scale: 1:50,000