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ENVIRONMENTAL

Mr. Carlos Merizalde
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Subject:
Revised Coke Manufacturing Plant RFI Report
Revised Land Disposal Areas RFI Report
Sloss Industries Corporation - Birmingham, Alabama
EPA I.D. Number ALD 000 828 848

Tampa, FL,
4 December 2000

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Dear Mr. Merizalde:

On behalf of Sloss Industries Corporation, ARCADIS Geraghty & Miller is submitting two copies of the above-referenced documents. Each document contains three volumes. These documents have been revised to include responses to EPA comments received on March 8, 1999 for the Coke Manufacturing Plant and Land Disposal Areas RFIs. Additionally, responses to EPA comments dated July 21, 2000 for the Land Disposal Areas Draft RFI Report and October 6, 2000 for the Coke Manufacturing Plant Draft RFI Report, which are attached to this letter, have been incorporated into these documents. If you should have any questions, please feel free to contact Mike Griffin, Sloss Industries, or myself at your convenience.

Sincerely,

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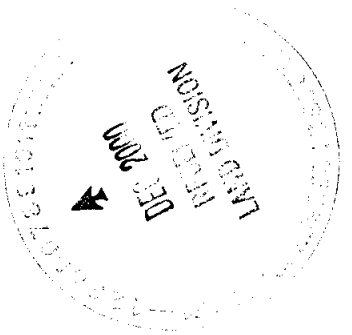

RCRA Facility Investigation
Coke Manufacturing Plant
Volume I of III

Report
(November 1996 - Revised November 2000)

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Report
(November 1996 - Revised November 2000)

ARCADIS GERAGHTY & MILLER

27 November 2000

PREPARED FOR

Sloss Industries, Inc.
Birmingham, Alabama

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GLOSSARY OF ABBREVIATIONS

AIHC	American Industrial Health Council
amsl	Above Mean Sea Level
AP	Averaging Period
ASTM	American Society for Testing Materials
ATSDR	Agency for Toxic Substance and Disease Registry
BSC	Benzene Sulfonyl Chloride
BTF	Biological Treatment Facility
BW	Body Weight
CDC	Center for Disease Control
cm/sec	Centimeters per Second
cm^2	Square Centimeters
COC	Constituent of Potential Concern
CSF	Cancer Slope Factor
DOT	Department of Transportation
EF	Exposure Frequency
ELCR	Excess Lifetime Cancer Risk
EP	Exposure Period
EPC	Exposure Point Concentration
ERA	Ecological Risk Assessment
FID	Flame Ionization Detector
FSP	Field Sampling Plan
ft	Feet
ft bls	Feet Below Land Surface
ft/ft	Feet per Foot
ft/yr	Feet per Year
FWI	Facility-Wide Investigation
gpm	Gallons Per Minute

HEAST	Health Effects Assessment Summary Tables
HHC	Hillsborough Holding Corporation
HI	Hazard Index
HQ	Hazard Quotient
HSDB	Hazardous Substances Databank
HSWA	Hazardous and Solid Waste Amendment
IDW	Investigation Derived Waste
IQ	Intelligence Quotient
IRIS	Integrated Risk Information System
JWC	Jim Walters Corporation
kg	Kilograms
L/day	Liters per Day
lb/ft^3	Pounds per Cubic Foot
LOAEL	Lowest Observed Adverse Effect Level
MCL	Maximum Contaminant Level
mg	Milligrams
$mg/cm^2/day$	Milligrams per Square Centimeter per Day
mg/day	Milligrams per Day
mg/kg	Milligrams per Kilogram
mg/kg/day	Milligrams per Kilograms per Day
mg/kg-day	Milligrams per Kilograms-Day
mg/L	Milligrams per Liter
mg/m^3	Milligrams per Cubic Meter
ML	Milliliter
msl	Mean Sea Level
NCEA	National Center for Environmental Assessment
NOAEL	No Observed Adverse Effect Level
NTP	National Toxicology Program
OVM	Organic Vapor Monitor

PAH	Polycyclic Aromatic Hydrocarbon
PDF	Probability Density Function
PID	Photo Ionization Detector
PP	Priority Pollutant
ppm	Parts per Million
PRE	Preliminary Risk Evaluation
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAGS	Risk Assessment Guidance for Superfund
RBC	Risk-Based Concentration
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RfC	Reference Concentration for Inhalation Exposure
RfD	Reference Dose
RfD_o	Reference Dose for Oral Exposure
RFI	RCRA Facility Investigation
RGOs	Remedial Goal Options
RME	Reasonable Maximum Exposure
SD	Standard Deviation
Sloss	Sloss Industries Corporation
SQL	Sample Quantitation Limit
SSA	Skin Surface Area
SSSIC	Sloss Sheffield Steel and Iron Company
SVOC	Semivolatile Organic Compound
SWMU	Solid Waste Management Unit
TCP	1,2,3-Trichloropropane
TEF	Toxicity Equivalency Factor
TPH	Total Petroleum Hydrocarbons
TSA	Toluene Sulfonic Acid

UCL	Upper Confidence Level
USEPA	United States Environmental Protection Agency
µg/day	Micrograms per Day
µg/dL	Micrograms per Deciliter
µg/kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
$\mu g/m^3$	Micrograms per Cubic Meter
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
VSI	Visual Site Inspection

1. INTRODUCTION

Sloss Industry Corporation (Sloss) located in Jefferson County, Alabama, is evaluating past waste management practices in accordance with the regulations set forth by the Hazardous and Solid Waste Amendments (HSWA) of the Resource Conservation and Recovery Act (RCRA) (Figure 1-1). In August 1990, Geraghty & Miller, Inc. was contracted by Sloss to prepare and implement a RCRA Facility Investigation (RFI) Work Plan for 39 solid waste management units (SWMUs) identified at the Sloss Facility during the RCRA Facility Assessment (RFA) (Figure 1-2). A RFI Work Plan was prepared and approved by the United States Environmental Protection Agency (USEPA) in May 1995. The Work Plan describes the investigations that will be conducted to characterize the nature, extent, and rate of contaminant migration from the SWMUs identified at the Facility.

In the RFI Work Plan, the SWMUs were separated into four separate areas: Coke Manufacturing Plant, Land Disposal Areas, Biological Treatment Facility (BTF) and Sewers, and Chemical Manufacturing Plant (Table 1-1 and Figure 1-2). These areas were created to group similar industrial activities together and allow for a systematic implementation of the investigation activities at each area. Initially, a Facility-Wide investigation (FWI) was completed in June through August 1995 to develop a conceptual hydrogeologic and hydrologic model of the Sloss Facility. The conceptual model details information on groundwater and surface water flow for use in assessing possible contaminant transport for future SWMU investigations. The RFI Facility-Wide Report was submitted to the USEPA in February 1996. The Coke Manufacturing Plant investigation was conducted in June 1996 and RFIs for the remaining SWMU areas will be implemented in 1997 (Land Disposal Areas), 1998 (BTF and Sewers), and 1999 (Chemical Manufacturing Plant). This RFI Coke Manufacturing Plant Report summarizes the results of the Coke Manufacturing Plant investigation.

1.1 SITE BACKGROUND

The Sloss Facility began operation in 1919 as Sloss Sheffield Steel and Iron Company (SSSIC) producing foundry and furnace coke and coke by-products. The Coke Manufacturing Plant consisted of five coke batteries that contained 240 coke ovens. Coke batteries 1 and 2, consisting of 120 coke ovens, were taken out of service in 1979. The coke product, produced through a process of carbonization, is sold primarily to the steel industry as furnace coke. The Coke Manufacturing Plant is currently operating and is located at the southwest part of the Sloss Facility (Figure 1-2).

In 1939, SSSIC merged with United States Pipe and Foundry Company and in 1948 the Facility constructed a Chemical Manufacturing Plant that produced Toluene Sulfonic Acid (TSA) 94. Sloss later expanded operations by manufacturing sulfones through a sulfonization process of sulfuric acid and benzenesulfonyl chloride (BSC). The Chemical Manufacturing Plant is located at the southeast part of the Sloss Facility and is currently operating (Figure 1-2).

A Mineral Wool Plant was constructed northeast of the Chemical Manufacturing Plant in 1950 and is currently operating (Figure 1-2). The plant manufactures mineral fibers, which are used for ceiling tiles and insulating products.

In 1958, an iron blast furnace began operation at the Facility and produced pig iron from iron ore. The blast furnace ceased operation in 1979 and was removed in 1984.

Jim Walter Corporation (JWC) bought this Facility in 1960 and constructed a BTF located in the northern part of the Sloss Facility in 1973 (Figure 1-2). The BTF was designed to treat wastewater generated at the Facility. The wastewater that is generated enters a BTF Sewer System and is directed to the northeast part of the Facility where the BTF is currently operating. In 1988,

the JWC sold controlling interest to Hillsborough Holding Corporation (HHC), and Sloss Industries Corporation became a wholly owned subsidiary of HHC.

1.2 OBJECTIVES

The objectives of the Coke Manufacturing Plant RFI are to: (1) confirm the presence or absence of contamination at the site; (2) determine the extent and degree of contamination at the site; (3) identify and characterize the sources of contamination for the site; (4) assess the potential for contaminant migration to surrounding environments; (5) identify public health and environmental risks of any contaminants; and (6) define the scope of future investigations and/or actions at the site.

To meet the RFI objectives, each of the identified Coke Manufacturing Plant SWMUs were evaluated to assess whether releases to the environment have occurred. Sump integrity inspections were conducted to evaluate the potential for releases. The presence or absence of contamination was investigated at each Coke Manufacturing Plant SWMU by collecting samples of potentially affected media (subsurface and surficial soil). A risk assessment was prepared to identify public health and environmental risks of any contaminants. Additionally, data collected during the Coke Manufacturing Plant RFI was also used to revise the conceptual site model developed during the Facility-Wide investigation.

1.3 SCOPE

The coking operations at the Sloss Facility consist of five distinct areas for purposes of this investigation. These areas have been designated based upon an examination of the activities that occur and the proximity of identified SWMUs. The Spill Area Around Diesel Tank, SWMU 6, although not directly related to the coking process has been included within this group due to its proximity to the Coke Manufacturing Plant. The Coke Manufacturing Plant RFI used sump

inspections, soil borings and soil sampling, surficial soil sampling to characterize each SWMU. Quench water was sampled to evaluate the chemical characteristics of the quench water.

Area 1 - Quench Tower A and B and Sumps, Pump Basins and Settling Basins (SWMU 1A, 2A, 3A, 1B and 2B): The RFI investigation for the Quench Towers A and B consisted of sump inspections, surficial soil sampling, soil borings and soil sampling, and quench water sampling. The sump inspections were performed to evaluate the physical integrity of the sumps. Surficial soil sampling was conducted to evaluate the potential of contaminant dispersion from steam emission that occurs during the quenching process. The quench water sampling was conducted to evaluate the chemical characteristics of the quench water to aid in the evaluation of soil samples collected outside of the pump basin. Subsurface soil sampling was conducted to confirm the presence or absence of soil contamination at the quench towers.

Area 2 - Coal Tar Storage Area Drain System (SWMU 5): Soil sampling was conducted to confirm the presence or absence of soil contamination around the drain system.

Area 3 - Coal Tar Collection Sump in #1 Pump House (SWMU 7), Flushing Liquor Decanter and Sump (SWMUs 8 and 9): Sump inspections were conducted at SWMUs 7 and 9 and the concrete base of SWMU 8 was inspected to evaluate the integrity of these structures. Soil sampling was conducted at these SWMUs to confirm the presence or absence of soil contamination.

Area 4 - Coal Tar Decanters (SWMU 10, 11, 12): Surficial soil sampling was conducted at these SWMUs to determine if any releases had occurred and confirm the presence or absence of surficial soil contamination.

Area 5 - Spill Area Around Diesel Tank (SWMU 6): Confirmatory soil sampling was conducted at this SWMU to assess if the soil removal action removed all of the contamination at the location.

Risk Assessment: Using data generated from the RFI, a health and environmental assessment was prepared to evaluate the risks associated with the Coke Manufacturing Plant SWMUs.

2. STUDY AREA

2.1 TOPOGRAPHY

Sloss is located in the Birmingham Valley District of the Alabama Valley and Ridge Physiographic section. The Birmingham Valley trends northeast-southwest and is characterized as essentially flat, low lying, and is bound to the southeast by Red Mountain and to the northwest by Sand Mountain (Figure 2-1).

Land surface elevations on the Sloss Facility range between 540 and 560 feet above mean sea level (amsl) except at the northwest portion of the Facility where Sand Mountain is exposed. Approximately 180 feet of relief is present from Sand Mountain to the Sloss Facility. Drainage from Sand Mountain trends southeast directing surface water toward the Sloss Facility (Figure 1-1).

2.2 SURFACE WATER

The Sloss Facility lies in the Black Warrior River Basin. Two tributaries of the Locust Fork of the Black Warrior River occur in the vicinity of the Sloss Facility, Five Mile Creek located along the northern boundary of the Facility and Village Creek located approximately 1.5 miles south of the Facility. In the vicinity of the Sloss Facility, Five Mile Creek flows to the west and Village Creek flows to the southwest.

Surface water at the Sloss Facility is limited to a drainage ditch located along the eastern property boundary of the Sloss Facility. This drainage ditch is located north of the Coke Manufacturing Plant and extends from near piezometer P-7 located adjacent to the LaFarge Quarry northward to Five Mile Creek where it discharges (Figure 2-2). There are no surface water bodies in the Coke Manufacturing Plant. Drainage ditches, which collect storm water runoff, are located along the northwestern boundary of the Coke Manufacturing Plant west of the railroad tracks and adjacent to 35th Avenue, which is located along the southeastern boundary of the Coke Manufacturing Plant.

2.3 GEOLOGY

2.3.1 Regional Setting

The Sloss Facility is situated within the Valley and Ridge Province at the southern end of the Appalachian Mountains (Figure 2-1). The Valley and Ridge province in the Birmingham area is underlain by more than 10,000 feet of sedimentary rock that range in age from Cambrian to Holocene. A generalized stratigraphic section of rocks in the area is presented in Figure 2-3. The Valley and Ridge Province is a structurally complex geologic feature that developed at the end of the Paleozoic Era in response to tectonic stresses during the deformation of the Appalachian fold mountain belt. Northwest trending faults and folds and thrust faults are typical of the Appalachian fold mountain belt. Structurally the Valley and Ridge Province includes the Birmingham anticlinorium, Cahaba synclinorium, and the western edge of the Coosa synclinorium, which are generally faulted and folded (Kidd and Shannon, 1977) (Figures 2-4 and 2-5). After development of the Valley and Ridge Province, the structures were subsequently modified by erosion.

The Birmingham anticlinorium is a major thrust faulted fold that trends northeast southwest (Thomas and Bearce, 1986). The Sloss Facility is located on the Blount Mountain syncline, which is the northwest limb of the Birmingham anticlinorium (Figure 2-5).

Several structural features are present on the Birmingham anticlinorium including the Opossum Valley thrust fault, which occurs in the area of the Sloss Facility, and the Jones Valley thrust fault (Figure 2-4). The Opossum Valley thrust fault is a northeast-southwest trending fault located on the northwestern limb of the Birmingham anticlinorium. It has a displacement of 7,000 feet or more where older carbonate rocks of the Conasauga Formation, Ketona Dolomite, and Knox Group have been thrusted from the southeast over younger Paleozoic clastic rocks (Kidd and Richter, 1979). Numerous faults and fault splays are associated with the Opossum Valley fault, and

formations immediately west of the fault are typically overturned, deformed, and faulted (Kidd and Richter, 1979).

2.3.2 Site Specific Geology

The Sloss Facility is underlain by sedimentary rocks that range in age from Cambrian to Pennsylvanian as presented in Figure 2-6, a geologic map of the site. South of Summit Street, the Opossum Valley fault trace is located at the northwest perimeter of the Sloss Facility property. North of Summit Street in the BTF area, the Opossum Valley fault trace bisects the property in the area of the Polishing Pond (Figure 2-6). The hanging wall of the fault is located in the Sloss Facility plant area and the footwall of the fault is located on and adjacent to Sand Mountain (Figure 2-6).

Northwest of the Opossum Valley fault trace, on the footwall of the fault, the Sloss Facility is underlain by strata ranging from Silurian to Pennsylvanian in age (Figure 2-6). The rocks exposed on Sand Mountain are inclined and dip to the southeast from 28° to 77°. Southeast of the Opossum Valley fault trace, on the hanging wall of the fault, the Sloss Facility including the Coke Manufacturing Plant, is underlain by the Conasauga Formation of Cambrian Age as presented in Figure 2-6. The rocks in the Conasauga Formation are inclined and dip to the southeast from 26° to 35°. Geologic cross-sections of the Sloss Facility that bisect the northwest and northern boundaries of the Coke Manufacturing Plant and southern portion of the plant were constructed along lines as indicated in Figure 2-2. Cross sections are presented in Figures 2-7, 2-8, and 2-9.

The Conasauga Formation, which underlies the Coke Manufacturing Plant, varies from 1,100 to 1,900 feet in thickness. In the area of the Opossum Valley fault, the stratigraphic thickness of the Conasauga Formation is probably much thinner than 1,100 to 1,900 feet. The Conasauga Formation consists of relatively few micrite zones, with larger proportions of very fine grained sparite and argillaceous sparite, and several zones containing somewhat dolomitic edgewise

conglomerates (Brockman, 1978). The micrite tends to be light gray, the sparite being darker in color, and the argillaceous rocks being darker than the purer limestone.

Lithologic data collected during the FWI indicates that the top two feet of the Conasauga Formation at most locations is composed of highly weathered limestone. Below the upper weathered surface of the Conasauga Formation, the limestone was generally massive with very few fractures. The blocks of limestone encountered during the FWI drilling were typically, medium gray in color and hard with thin (1 to 2 foot) lenses of softer, darker gray shale and shaley limestone; however, occasionally thin (2 to 12 inch) fracture zones were encountered. The limestone in these fracture zones was usually broken up and any remaining voids were infilled with calcite crystals. Areas of fractured limestone were generally within the upper 50 feet of the Conasauga Formation and became more infrequent with greater depth. Based on lithologic and geophysics data, the Conasauga Limestone at depth appears to be hard with little secondary porosity.

The underlying rocks of the Sloss Facility have been structurally deformed in response to thrust faulting, resulting in the development of an extensive network of faults and joints. The stress associated with the folding and faulting has created major joint traces in the Conasauga Formation which trend northeast and northwest at the Sloss Facility. Two systematic sets of joints were found in quarries adjacent to the site, one set strikes approximately N45°E and dips approximately 60°NW and are approximately perpendicular to bedding and the second set strikes N30°W and has subvertical dips. Many of the joints of both sets are calcite healed, although some were observed to have reopened.

2.3.3 Bedrock Topography

The bedrock topography of the Sloss Facility generally slopes to the north towards Five Mile Creek and elevation ranges from 574.2 ft amsl at the southwestern end of the site to 507

feet amsl near Five Mile Creek. In the Coke Manufacturing area, the bedrock elevations range from 567.9 to 580.9 feet amsl and a relatively flat, slight bedrock high occurs in this area (Figure 2-10). Depth to bedrock in the Coke Manufacturing Plant ranges from 3 feet below land surface (ft bls) on the west and northwest perimeter of the plant along the railroad tracks to 25 ft bls in the coal storage area located in the southwest portion of the Coke Manufacturing Plant. Weathering of the Conasauga Formation has produced an undulating bedrock surface where several feet of relief has developed over tens of feet in some areas of the site (Figure 2-10).

2.4 SOILS

2.4.1 Facility-Wide Soils

Residual soil from weathered Conasauga Formation limestone overlies the Coke Manufacturing Plant and the majority of the Sloss Facility. According to the Soil Survey of Jefferson County, Alabama (1982), urban soils, where the original soil was altered by cutting and filling, shaping and grading, excavation, blasting, compacting, or covering with concrete or asphalt, are present in the majority of the Sloss Facility including the Coke Manufacturing Plant.

Lithologic data collected during the FWI indicates that in general, native soils at the Sloss Facility consist of cohesive, medium stiff to stiff inorganic clays of low to medium plasticity (CL) and high plasticity (CH) with color ranging from reddish brown to orangish yellow to very pale orange. General engineering properties based on analytical and visual observations of site soil properties include: high shrink-swell potential, low permeability, and low strength capabilities. Laboratory analysis of nine shelby tubes collected during the FWI identified the following ranges for geotechnical parameters which are consistent with the general engineering properties identified for site soils: coefficient of permeability 1.9×10^{-6} to 5.4×10^{-8} centimeters per second (cm/sec); west and dry porosity 0.59 to 0.84 and 0.39 to 0.55, respectively; wet and dry density 112.8 to 129.2 pounds per cubic feet (lb/ft^3) and 77.1 to 104.6 lb/ft^3, respectively; and specific gravity 2.70 to 2.81.

The low permeability of native soils will act as a barrier to mitigate the downward migration of any constituents of concern

Soil thickness at the Sloss Facility ranges between 3 and 25 feet thick. The soil is thickest in the coal storage area, located in the southwest portion of the Coke Manufacturing Plant, and thinnest, along the railroad tracks west and northwest of the Coke Manufacturing Plant. As indicated above, some areas of the Sloss Facility have been altered as a result of construction of the facility. Native soils in the Coke Manufacturing Plant have been replaced by non-native materials near the coke ovens and quench towers.

2.4.2 Background Soil

Two areas located on Sand Mountain were selected as background soil boring locations in areas that appeared, according to historical aerial photographs, to be minimally disturbed by industrial activity. One area (SB-1, SB-2 and SB-3) was located south of Summit Street adjacent to power transmission lines where the grass is periodically maintained and the second area (SB-4, SB-5, SB-6) was located adjacent to the dirt road which trucks used to transport sludge to the Biological Sludge Disposal Area (SWMU 23) (Figure 2-10).

Background soil samples SB-1, SB-2, and SB-3 collected south of Summit Street consisted of a stiff, reddish-brown to yellowish-orange, clay (CH-CL) with minor black to yellowish orange mottling. Background soil samples SB-4, SB-5, and SB-6, collected upgradient of SWMU 23, consisted of a soft to stiff, yellowish-orange, clay to sandy clay (CL) with minor red mottling and chert fragments. A light brown, silty sand was encountered in the upper 4 feet of SB-4.

Background soil samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), Priority Pollutant (PP) metals, barium, and cyanide to evaluate background soil quality at the Sloss Facility. Analytical results are presented in Table 2-1.

Trace concentrations of VOCs including methylene chloride, tetrachloroethene, toluene, 1,1,2-trichloroethene, and trichloroethene were detected in background soil borings at concentrations well below the USEPA Residential Risk Based Concentrations (RBCs) for soil ingestion. These low concentrations of VOCs may be a result of vehicular traffic, industrial emissions, and weed maintenance Tetrachloroethene, which degrades to trichloroethene, is used as a solvent and in soil sterilization, weed killers and insecticides.

Low concentrations of polycyclic aromatic hydrocarbons (PAHs) were detected in background soil borings at concentrations below USEPA RBCs for residential ingestion (Table 2-1). Additionally, bis(2-ethylhexyl)phthalate and di-n-butylphthalate were detected at concentrations below the USEPA Residential RBCs for soil ingestion.

Concentrations of arsenic, beryllium, barium, chromium, copper, lead, nickel, thallium, zinc and mercury were detected in the background soil samples. Only arsenic was detected at concentrations exceeding its USEPA Residential RBC for soil ingestion (Table 2-1). The reported concentrations however are within the observed common range for trace elements in natural soils (USEPA, 1983).

2.5 HYDROGEOLOGY

2.5.1 Regional Hydrogeology

Most of the industrial and domestic water supply in the Birmingham area is provided by surface water sources. Groundwater resources in the Birmingham Valley are used to a limited degree for industry, manufacturing and ore extraction, and some municipal supply. Hydrogeologic units in the area, which supply groundwater, include the Conasauga Formation, the Ketona Dolomite, and the Knox Group, although younger Paleozoics are reported to be capable of producing sufficient quantities of water (Moffet and Moser, 1978).

The Conasauga Formation is a source of large quantities of water for wells and springs in some areas; however, the availability of water in the formation is not uniform because zones of increased porosity and permeability are concentrated along solution channels (Hunter and Moser, 1990). Recorded water production data reports yields up to 300 gallons per minute (gpm) for industrial wells and up to 3,400 gpm for springs in the Birmingham Valley. The well and spring (Tannehill Spring) with maximum reported yields are located approximately 3 and 26 miles, respectively, southwest of Sloss. In contrast, reported yields of wells completed in the vicinity of Tannehill Spring on the southwest edge of Jefferson County vary from having significantly more water than is normally required for one household to nonproducing (Moffet and Moser, 1978).

The porosity and permeability of the Conasauga Formation generally decreases with depth and most of the groundwater is contained within the upper 300 feet of the formation (Hunter and Moser, 1990). The water table in areas underlain by the Conasauga Formation is typically 5 to 30 ft bls.

The Ketona Dolomite may be also be a productive aquifer in areas where bedrock weathering has created secondary solution features, however, water level and production data for this aquifer are lacking. The Copper Ridge member of the Knox Group is a productive aquifer with reported yields of 145 to 820 gpm in wells and up to 3,900 gpm in springs. Water levels in the Copper Ridge aquifer range from 20 to 75 ft bls.

There is no data regarding the vertical or horizontal hydraulic relationship between aquifers. Although the Conasauga Formation, Ketona Formation, and the Copper Ridge member of the Knob Group have been recognized as good aquifers, data regarding their aquifer characteristics in the area are lacking.

2.5.2 Site Specific Hydrology

The principal lithologic units underlying most of the Sloss Facility, including the Coke Manufacturing Plant, are the overburden and the Conasauga Limestone (Figure 2-6). Based upon data collected during the FWI, groundwater flow in the Conasauga Formation is controlled by the occurrence and relationships between fractures, joints, and bedding of the limestone and the shale of the Conasauga Formation. Piezometer data collected during the Facility-Wide RFI indicate three potential water bearing zones occur in the Conasauga Formation: (1) the upper bedrock surface (top two to three feet) which is composed of highly weathered broken, limestone; (2) calcite filled fracture zones within the limestone ranging from approximately 40 to 140 ft bls; and (3) shaly zones below approximately 140 ft bls.

Several other hydrogeologic units underlie a small portion of the Facility on and adjacent to Sand Mountain in the BTF area (Figure 2-6). On Sand Mountain, northwest of the BTF, water-bearing zones are present in the Tuscumbia Limestone and in sandstone lenses within the Parkwood Formation (Figure 2-3).

The highest producing water bearing zones in the Conasauga Formation were encountered in the upper, weathered bedrock between 40 and 140 ft bls. Below 140 feet bls, the Conasauga Formation appears to be composed of massive beds of low permeability limestone with occasional relatively more permeable shaly zones and very few fractures. Water bearing zones below 140 ft bls for the most part have produced piezometers with low yields and slow groundwater recovery.

Although three water bearing zones exist in the Conasauga Formation, current water level data and the absence of a confining unit between zones suggests that the three zones are hydraulically connected. Additionally, water level data indicates the upper highly weathered limestone surface appears hydraulically connected to the overlying soil in many areas. Monthly

water level data has been collected since initiation of the FWI to assess the hydraulic connection between the shallow and deep (below 140 ft bls) Conasauga Formation.

During the Coke Manufacturing Plant investigation, water levels were measured in all bedrock piezometers on June 13, 1996 (Table 2-2). Except for piezometers P-30 and P-31, depths to water measured on June 13, 1996 in piezometers screened in permeable bedrock units (less than 140 ft bls) ranged from 19.96 ft bls in P-24S to above land surface in P-5, which is a flowing piezometer (Table 2-2). Depths to water for piezometers P-30 and P-31, which were installed on Sand Mountain, were 31.36 and 93.48 ft bls, respectively, due to the abrupt change in topographic relief; however, water level elevations were comparable with other piezometers installed in the upper bedrock. Water level elevations in piezometers with depths shallower than 140 ft bls ranged from 505.93 ft amsl at P-1D to 604.52 ft amsl at P-30 (Figure 2-11). Water level elevations at piezometers screened within the deep Conasauga Formation (depths greater than 140 ft bls), excluding piezometer P-6D, ranged from 405.10 ft amsl at P-9 to 443.45 ft amsl at P-20 (Figure 2-12). The water level elevation in piezometer P-6D is similar to water level elevations in the shallower piezometers.

Deep Conasauga Formation piezometers P-6D, P-9, P-13D, P-21, and P-27 bailed dry during well development. Although piezometer P-6D bailed dry during development, the water level in this piezometer recovered shortly after the well was developed and has a water level similar to piezometers set in the upper part of the Conasauga Formation. This suggests a hydraulic connection at this location between the three lithologic units described previously. Water levels are slowly recovering in all other deep piezometers, except P-9, indicating that a hydraulic connection with the shallow aquifer may exist at the other deep piezometer locations; however, additional water level data is required to confirm this conclusion.

The water table map for June 1996 indicates that the groundwater flow direction beneath the Sloss Facility is generally to the northeast toward Five Mile Creek, a discharge area for the

upper Conasauga Formation (Figure 2-11). Because of the change in topography on Sand Mountain north of Summit Street, which is a recharge area, the groundwater flow from Sand Mountain is to the east toward the Polishing Pond.

The hydraulic conductivity in the Conasauga Formation aquifer system is variable, depending in part on the occurrence of interconnected fractures and weathered limestone zones. Values for hydraulic conductivity in the Conasauga Formation typically have an order of magnitude of 10^{-3} cm/sec, though values range from 1×10^{-2} (P-24S) to 4×10^{-8} cm/sec (P-4). Values for hydraulic conductivity in the Conasauga Formation in the area of the Coke Manufacturing Plant values range from 7×10^{-3} (P-19D) to 4×10^{-7} cm/sec (P-17) (Table 2-3).

The rate of groundwater flow in the bedrock aquifer varies locally with permeability and hydraulic gradient. In the southwestern section of the Facility in the Coke Manufacturing Plant, a relatively flat potentiometric surface exists and a hydraulic gradient of 0.010 feet per foot (ft/ft). The presence of more permeable coal material southwest of the Coke Manufacturing Plant and a relatively flat bedrock surface in this area are probably responsible for flattening of the hydraulic gradient in this area. In the central and northeastern portions of the Facility where the topography dips gently to the north, the hydraulic gradient is 0.025 ft/ft. Along the northwestern boundary of the Facility where Sand Mountain rises steeply a hydraulic gradient of 0.10 ft/ft was calculated.

Groundwater flow velocities in the shallow Conasauga Formation, calculated from slug test results, hydraulic gradients, and aquifer properties generated during the FWI, can be expected to range from 0.3 feet per year (ft/yr) to 395 ft/yr. However, the groundwater flow velocities at piezometers P-24S (1,000 ft/yr), MW-5 (1,000 ft/yr), P-26 (800 and 900 ft/yr) and P-8 (400 and 600 ft/yr) were above this range. In the vicinity of the Coke Manufacturing Facility calculated groundwater velocities ranged from 0.4 ft/yr at P-17 to 400 ft/yr at P-19D.

2.6 COKE MANUFACTURING PLANT SWMU

The Coke Manufacturing Plant is located at the southwest portion of the Sloss Facility (Figure 1-1). The plant manufactures foundry and furnace coke through the process of carbonization. Table 1-1 contains the 10 SWMUs associated with the Coke Manufacturing Plant that were identified by the USEPA during the RFA (Figure 1-2). The Spill Area Around Diesel Tank, SWMU 6, although not directly related to the coke process, has been included within this group due to its proximity to the Coke Manufacturing Plant (Figure 1-2).

2.6.1 Quench Tower and Sumps, Pump Basins, and Settling Basins (SWMUs 1, 2 and 3)

2.6.1.1 Description of History and Current Conditions

The Sloss facility operates two quench towers (Station A and Station B) that are located at the south (Station A) and north (Station B) ends of the coke oven batteries (Figure 2-13). The volatile chemicals and tars in coal are extracted at high temperatures to form coke. Coke product reaches a temperature of 2000°F during the carbonization process. Coke removed from the oven batteries is transported by rail cars to the quench towers where water is sprayed on the coke product from above the rail car. Contact cooling water generated during the quenching process drains to the quench tower sumps (SWMUs 1A and 1B). Coke particulates that become entrained in the contact cooling water and sediments that settle in the sump are periodically removed and sold along with coke breeze as product. Baffles have been installed at the top of the quench towers to minimize the release of entrained particulates and water vapor generated in the quenching process.

Contact cooling water that enters the quench tower sump drains to the quench tower pump basins (SWMUs 2A and 2B). The subsurface pump basins are constructed of concrete. Contact cooling water from SWMUs 1A and 1B enters SWMUs 2A and 2B, respectively, where it is recirculated through the quenching towers and reused as contact cooling water. As the volume of

water in SWMUs 2A and 2B decreases due to evaporation, mill water is added from the cooling spray ponds.

At quench tower Station A, the old quench tower settling basin (SWMU 3A) is currently used to provide increased contact cooling water capacity for SWMU 2A. Mill water from the cooling spray ponds is added to SWMU 3A, which drains into SWMU 2A for recirculation. The subsurface settling basin is also constructed of concrete. At quench tower Station B, mill water is added directly to the pump basin, SWMU 2B. There is no old quench tower settling basin (SWMU 3B) at the Station B quench tower.

2.6.1.2 Previous Investigations

The RFA conducted by USEPA in 1989 identified SWMU 1 as a possible contamination source to air, soil, and groundwater, and SWMUs 2 and 3 as possible contamination sources to soil and groundwater. The USEPA recommended an investigation to evaluate the integrity of SWMUs 1, 2, and 3 because pitting and cracking of the concrete structures was visible. Soil samples were also recommended to determine the nature and extent of releases from the units and from steam emission fallout (coke breeze) that occurs during the quenching process.

A visual inspection was conducted by Geraghty & Miller in September 1990 to evaluate the potential for waste releases associated with SWMUs 1, 2, and 3 and the coke quenching process. During the inspection, the cracks visible on the sides of the SWMU 1 appeared to be cohesively sealed with the particulate matter that is generated during the quenching process. The seal appears to prevent any material release to the ground or down the sides of the tower sump.

Waste releases associated with SWMUs 2 and 3 were not detected although cracks in the basin containment walls were visible.

2.6.2 Coal Tar Storage Area Drain System (SWMU 5)

2.6.2.1 Description of History and Current Conditions

This unit consists of an in-ground concrete trough that was designed to control spills from the coal tar storage tanks and collect surface-water drainage. The trough surrounded two aboveground coal tar storage tanks both of which were removed in the Fall of 1991. The trough drainage system discharged into the BTF Sewer System (SWMU 4).

In August 1994, Sloss began activities to abandon the in-ground concrete trough in place. The steel plates overlying the in-ground concrete trough were removed and visibly stained walls of the trough were sandblasted to remove the coal tar stains. Debris generated from the sandblasting were deposited in the trough. After sandblasting operations were complete, the debris was removed from the trough and properly disposed. The in-ground concrete trough was abandoned in place by backfilling the trough with clean fill dirt and was completed prior to implementation of the RFI.

2.6.2.2 Previous Investigation

During the RFA, the USEPA identified SWMU 5 as a unit with a potential for waste release although there was no evidence of spills from the storage tanks. An inspection conducted by Geraghty & Miller in September 1990, did not reveal visual evidence of discharge from the storage tanks into SWMU 5.

2.6.3 Coal Tar Collection Sump in #1 Pump House (SWMU 7) and Flushing Liquor Decanter and Sump (SWMUs 8 and 9)

2.6.3.1 Description of History and Current Conditions

The #1 coal tar pump house began operation in 1919 and ceased operation in 1991. The pump house contained pumps and valves involved with the transfer of coal tar and flushing liquor,

which were removed in 1993. The pump house floor is constructed of concrete and contains an in-ground sump. The sump received coal tar and flushing liquor drippage from the pumps and valves. The material that collected in SWMU 7 was pumped to the flushing liquor decanter (SWMU 8), which has been removed.

Flushing liquor is the contact cooling water used to cool the exhaust gases from the coke ovens. The flushing liquor contains fine coal material and organics that are emitted during coke production. The flushing liquor decanter (SWMU 8), which has been removed, collected flushing liquor and coal tar produced during coke manufacturing. The flushing liquor was pumped into the decanter along with coal tar from SWMU 7. Heavy organics and coal fines that settled out of the flushing liquor in the decanter were recycled in the coke ovens as part of the decanter tank tar sludge.

The flushing liquor decanter sump (SWMU 9) is an in-ground concrete unit located between the coal tar tank and the back of the flushing liquor decanter. The sump currently receives local surface water and previously received condensate from the flushing liquor decanter (SWMU 8). The sump discharges into the BTF Sewer System.

2.6.3.2 Previous Investigation

The USEPA identified SWMU 7, 8, and 9 as a unit with a potential for waste release in the RFA. At the time of the USEPA visual site inspection, the condition of SWMU 7 was not determined because it was covered with tar sludge. Some staining of the concrete base and surrounding soil at SWMU 8 was noted during the RFA. There was no reported evidence of waste release at SWMU 9; however, the integrity of the unit could not be determined because it contained a liquid. A visual inspection conducted by Geraghty & Miller in September 1990 did not reveal evidence of discharge from the pump house, SWMU 7, or SWMUs 8 or 9.

2.6.4 Coal Tar Decanters (SWMUs 10, 11, 12)

2.6.4.1 Description of History and Current Conditions

The coal tar decanters began operation in 1919 and are still operating with the exception of SWMU 12, which ceased operation in 1979. These units consist of steel tanks that contain coal tar and are situated on concrete pads. Solids, which settle out of the coal tar and decanter tar sludge, are removed from the steel tanks by a drag conveyor. The sludge accumulates in bags attached to a manifold on steel catch pans in a concrete diked area at a rate of approximately 5 cubic feet per 8-hour shift. The sludge is recycled by carbonizing the material in the coke ovens.

2.6.4.2 Previous Investigation

The USEPA's RFA identified SWMUs 10, 11, and 12 as units with potential of waste release. During the 1989 USEPA visual site inspection, it was reported that the steel catch pans at SWMUs 10 and 11 appeared to have been overfilled because sludge stains were present on the exterior of the catch pan and stains were evident on the concrete slab below the catch pans. During the USEPA visual site inspection, SWMU 12, which has not been used since 1979, had no steel catch pan. Additionally, no visual evidence of waste release was reported.

An inspection conducted by Geraghty & Miller in September 1990 revealed that catch pans at SWMUs 10 and 11 may have been overfilled in the past as evidenced by tar sludge stains on the concrete slab below the catch pans. Plastic bag containers had been installed on the tar sludge decanter outlet manifold to catch the sludge and avoid accumulation on the catch pan. When the plastic bags are full, a new plastic bag is installed and the tar sludge is recycled in the coke ovens. An inspection conducted by Geraghty & Miller in October 1994 revealed that the coal tar decanter at SWMU 12 had been decommissioned.

2.6.5 Spill Area Around Diesel Tank (SWMU 6)

2.6.5.1 Description of History and Current Conditions

A 10,000-gallon diesel tank is located at the south-central part of the Sloss facility west of the coke battery ovens. The unit is a steel, above ground storage tank within a concrete containment area. The tank was installed in 1984 and is currently operating to maintain bulk density control of coal. As a result of the USEPA Visual Site Inspection (VSI), contaminated soil was removed from outside the containment area where diesel spills had occurred from refilling the storage tank. In addition, the tank was positioned to contain diesel spills inside the containment area.

2.6.5.2 Previous Investigation

The USEPA identified SWMU 6 as a unit with potential for waste release and recommended that soil samples be collected to determine the nature and extent of waste release. In November and December 1989, visibly stained soil surrounding the concrete containment area of SWMU 6 was removed. The soil surrounding the concrete containment structure had total petroleum hydrocarbon (TPH) results ranging from 949.8 to 4172.0 milligrams per kilogram (mg/kg) (Figure 2-14). Background soil samples collected approximately 20 ft west of SWMU 6 had elevated TPH concentrations due to coal material and ranged from 77.2 to 97.3 mg/kg. Soils with elevated TPH concentrations were excavated to a depth where the natural red clay was present. The extent of the visibly stained soil varied from approximately two ft bls under the diesel fill area to one ft bls.

3. DESCRIPTION OF INVESTIGATIVE TASKS

3.1 SUMP INSPECTION PROCEDURE

Sump inspections were conducted in Coke Manufacturing Plant SWMUs to evaluate the integrity of the sumps and assess whether releases to the environment may have occurred. Seven sumps (SWMU 1A, 2A, 3A, 1B, 2B, 7, and 9) in the Coke Manufacturing Plant were inspected to determine if cracks were present in the walls or base of each sump. Additionally, the concrete foundation for SWMU 8 was visually inspected for cracks that may have been potential pathways for contaminant migration before SWMU 8 was removed.

During the course of the Coke Manufacturing Plant Investigation, it was discovered that the location of SWMU 12, Coal Tar Decanter for No. 1 and No. 2 Coke Batteries, provided in the RFI Work Plan was incorrect. Aerial photographs and historical Coke Manufacturing Plant drawings were examined and plant personnel were interviewed to determine the correct location for SWMU 12. Based on a review of this information, the correct location for SWMU 12 was identified approximately 80 feet northeast of the SWMU 12 location presented in the RFI Work Plan (Figure 2-13). The SWMU 12 coal tar decanter, which had not been used since 1979, was retrofitted in 1993 after the RFA was completed. Since SWMU 12 does not have a foundation, a foundation inspection was not conducted as proposed in the RFI Work Plan.

Visual sump inspections were performed according to the protocol detailed in the USEPA document "Determining the Integrity of Concrete Sumps - Technical Guidance Document" (USEPA/530-R-93-005) published in 1991. Prior to a visual inspection, each sump was drained and cleaned by Sloss personnel. All material removed from a sump was disposed of in an appropriate manner by Sloss. In the case of the sumps associated with Quench Towers A and B, accumulated coke fines were removed by Sloss personnel after the water in the sumps was pumped out. After all material contained in each sump was removed, the walls and the base were sand blasted and/or pressure cleaned with water to expose the concrete surface.

Initially, a review of existing data for each sump was conducted. Aspects of design, construction, operation and maintenance were evaluated by examining available as-built drawings and interviewing plant personnel. After a sump was drained and cleaned, a visual sump inspection was performed on each sump as described in the USEPA technical guidance document. The visual sump inspection included the following steps:

1) The inside surface and exposed external surface were inspected for signs of deterioration, which is defined as any harmful change in the concrete's normal mechanical, physical, and chemical properties caused by separation of its components.

2) The inside surface and exposed external surfaces were inspected for cracks. If possible, the concrete was inspected for cracks immediately after the removal of liquid from a sump because cracks tend to be more visible when swollen by moisture. Cracks were measured, classified and located on the sump surface drawing. The cracks were classified by direction, width and type. Crack directions were identified as longitudinal, transverse, vertical, diagonal, or random; crack widths were identified as fine (less than 1 mm), medium (between 1 and 2 mm) and wide (over 2 mm); and crack types could be identified as pattern cracking, checking, hairline cracking, and D-cracking.

3) The inside surface and exposed external surfaces were inspected for evidence of chemical attack

4) All pipe penetrations into and out the sumps were closely inspected for deterioration, cracking, and/or chemical attack since these areas are especially vulnerable to leaking.

5) Any observed previously repaired areas were checked for integrity and bonding with the concrete surface.

6) Joints, adjacent concrete, and joint filler were examined to determine their condition.

During inspection of each sump, a sump surface drawing (Figure 3-1) was completed and a photographic log was made of all significant features. If found, deteriorated surfaces, cracks, evidence of chemical attack, and condition of repairs and joints were classified, measured, and located on a sump surface drawing. Terminology used on the sump surface drawing is from the USEPA technical guidance document. The completed sump surface drawings and photographic logs are included in Appendix A.

3.2 SOIL SAMPLING

Soil borings were installed at SWMUs 1A, 2A, 3A, 1B, 5, 7, 8, and 9 within the Coke Manufacturing Plant and at the Spill Area Around the Diesel Tank (SWMU 6) (Figure 2-13). Additionally, instead of installing soil borings at SWMU 2B, a soil sample was collected from a trench because of the presence of railroad ballast to 2.5 ft bls and very shallow bedrock (2.5 to 3 ft bls). The soil boring locations were selected based on the rationale presented in the RFI Work Plan which indicated that soil samples would be collected near identified cracks in concrete structures or as close to identified cracks as possible. Sample collection and laboratory analyses were conducted in accordance with the procedures and methods described in the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP). The drilling and sampling equipment was decontaminated in accordance with the site QAPP. Copies of the soil sampling logs are included in Appendix B. A sample designation explanation is provided in Volume III, Analytical Data, of the RFI Coke Manufacturing Plant Report.

A total of 18 soil borings were drilled in the overburden to collect soil samples for lithologic description and chemical analysis (Table 3-1). Soil borings were drilled to the water table and/or bedrock surface depending on site conditions. The soil borings ranged from 4 to 18 ft deep and were installed using a truck mounted hollow stem auger drill rig. At SWMU 2B, the trench was

installed by a backhoe (Table 3.1). Detailed soil boring and lithologic logs were prepared for each borehole and the trench sample using the Unified Soil Classification System (USCS). Copies of the soil boring and lithologic logs are presented in Appendix B.

Formation samples were collected from each borehole at 2-foot intervals using split spoon samplers in accordance with American Society for Testing and Materials (ASTM) Method D-1586. The standard split spoon used was two inches in diameter and two feet in length, providing a discrete sample of a two-foot interval. The split spoon was attached to the end of the drilling rod and driven into the soil the length of the sampler. After reaching the desired depth, the split spoon was withdrawn from the borehole, detached from the drilling rod, and opened. The upper portion of the split spoon was discarded. The samples were field screened immediately upon opening to determine the concentration of volatile organic vapors, using an organic vapor monitor (OVM) equipped with a photo ionization detector (PID).

Because the total depth of the soil boring at each location was unknown at the outset and the soil intervals selected for laboratory analysis could not be determined until after the soil boring was completed, the following soil sampling procedure was used. To prevent volatilization, soil from each split spoon interval was collected for VOC analysis by transferring the soil directly from the split spoon to the appropriate sample container immediately after opening the split spoon. The VOC samples were then placed in a cooler with ice. The remaining soil from each split spoon interval was then wrapped in aluminum foil and placed in a cooler to be composited for semivolatile and metals analysis if the sample was selected for laboratory analysis. Upon completion of the soil boring, soil samples were selected for laboratory analysis based on the sampling strategy detailed in the RFI Work Plan.

In the RFI Work Plan, the following sampling strategy was proposed for selecting soil samples for laboratory analysis. If the base of the sump was underlain by more than six feet of soil, three soil samples would be selected for laboratory analysis in each soil boring. Soil samples were

to be collected from the base of the sump to two feet below the base of the structure, from one foot above the water table to one foot below, and half way between the upper and lower samples. If the base of the structure was underlain by less than six feet of soil, only two samples would be collected from that location. If groundwater was not encountered in the surficial material, the lower sample would be collected immediately above the bedrock. During the Coke Manufacturing Plant investigation, the RFI Work Plan soil sampling strategy was modified based on site conditions encountered at each SWMU. The intervals sampled for laboratory analysis at each soil boring location and the rationale used to select the sample intervals are discussed below in SWMU specific sections.

After the soil sample intervals were selected for laboratory analysis, the soil samples stored in aluminum foil were composited for non-volatile analysis. A soil sample from an interval selected was placed in a stainless steel bowl, then thoroughly mixed using a stainless steel spoon. The soil was scraped from the sides and rolled to the middle of the bowl and initially mixed. The sample was then quartered and moved to the edges of the bowl. Each quarter was then mixed individually. The quarters were then recombined into the center of the bowl and the entire sample was mixed one final time. The sample was then spooned into wide-mouth glass jars with Teflon™ lined caps.

Some of the soil samples had a high clay content. In clayey soils, mixing the samples according to the standard procedures was not possible. In these cases, the sample was placed in the bowl and finely subdivided with a stainless-steel spoon. Representative portions of the subdivided sample were then distributed to appropriate sample containers.

Duplicate soil samples for semivolatile and metals analysis were collected by transferring soil from the stainless steel bowl into the appropriate containers in equal portions until the containers were full. In clayey soils, each duplicate container was filled with equally representative soil portions. Equipment blank and field blank samples were collected according to the frequency and procedures specified in the site QAPP.

Soil samples were preserved with ice and shipped *via* overnight carrier service to Center for Applied Engineering, Inc. in St. Petersburg, Florida for USEPA Method 8260, USEPA Method 8270, the thirteen PP Metals, barium, and cyanide analysis. Analytical reports for the soil samples are presented in Volume III, Analytical Data, of the RFI Coke Manufacturing Plant Report. After completion of the sampling and analysis program, the field and analytical data were reviewed and validated according to the procedures outlined in the site QAPP. The checklists completed during the data validation are included in Volume III, Analytical Data, of the RFI Coke Manufacturing Plant Report.

Drill cuttings for each soil boring location were containerized in Department of Transportation (DOT)-approved 55-gallon drums, labeled, and stored in a central staging area. The VOC samples and aluminum foil wrapped intervals not selected for analysis were discarded into DOT approved 55-gallon drums used to containerize cuttings from each location. Each borehole was abandoned by filling the borehole with a 3% bentonite mixture neat cement grout.

3.2.1 Quench Tower A and Sumps, Pump Basin, and Settling Basin (SWMU 1A, 2A, and 3A)

Soil samples were collected from two soil boring locations at each SWMU (1A, 2A, and 3A) associated with Quench Tower A (Table 3-1, Figure 3-2). Soil borings were placed as close as possible to cracks or seeps from existing cracks observed during the visual sump inspections.

At SWMU 1A, soil boring 960610-CO-01A-SL0004 was located approximately 10 feet west of SWMU 1A as close as possible to a seep from an existing crack observed in the northeast corner of the sump floor during the sump inspection (Figure 3-1). Soil boring 960611-CO-01A-SL0005 was located approximately 10 ft south of the southeast corner of SWMU 1A where a large crack was observed during the sump inspection.

At SWMU 1A, the water table was encountered at approximately 3 feet below land surface (ft bls) at soil boring locations 960610-CO-01A-SL0004 and 960611-CO-01A-SL0005. Soil boring 960610-CO-01A-SL0004 was advanced to 12 ft bls or the top of bedrock to determine if the water table was perched. This soil boring confirmed that the water table was not perched since saturated soil samples were collected from 3 to 12 ft bls. The soil sampling rationale proposed in the RFI Work Plan was modified because of the high water table (3 ft bls) and depth of the base of the sump (>10 ft bls). Since unsaturated soil was not available below the sump, soil samples from 2 to 4 ft bls (from one foot above the water table to one foot below) were submitted from soil borings 960610-CO-01A-SL0004 and 960611-CO-01A-SL0005 for laboratory analysis to evaluate the soil in the area of the sump.

At SWMU 2A, a seep from an existing crack, which extends along the entire length of the south and east walls of the sump, was observed during the sump inspection. To evaluate site soil in the area of this crack, two soil borings were installed adjacent to SWMU 2A. Soil boring 960610-CO-02A-SL0001 was located five feet east of the SWMU 2A sump, approximately in the center, and soil boring 960610-CO-02A-SL0002 was located five feet south of the southeast corner. Similar to SWMU 1A, the water table was encountered at approximately 3 ft bls at soil boring locations 960610-CO-02A-SL0001 and 960610-CO-02A-SL0002. Soil boring 960610-CO-02A-SL0001 was advanced to 18 ft bls to determine if the water table encountered at approximately 3 ft bls was perched. The soil boring confirmed the water table was not perched since soils collected were saturated from approximately 3 ft bls to the top of bedrock at 18 ft bls.

The soil sampling rationale proposed in the RFI Work Plan was modified because of the high water table (3 ft bls) and depth of the base of the sump (12 ft bls). Although the RFI Work Plan did not propose collecting soil samples below the water table or adjacent to site sumps (the plan proposed collecting soil samples below the base of a sump), soil samples from 2 to 4 ft bls (from one foot above the water table to one foot below) were submitted for laboratory analysis from soil borings 960610-CO-02A-SL0001 and 960610-CO-02A-SL0002 to evaluate the soil in the area

of the sump. Furthermore, although the RFI Work Plan did not propose collecting soil samples below the water table, the 16 to 18 ft bls sample from soil boring 960610-CO-02A-SL0001 was submitted for laboratory analysis to provide analytical data for the material below the sumps associated with Quench Tower A above the bedrock.

At SWMU 3A, two soil borings were installed by the sump to evaluate the adjacent soil. Soil boring 960611-CO-03A-SL0001 was installed approximately 10 ft north of the northwest corner of SWMU 3A near seeps from existing cracks observed during the sump inspection. Soil boring 960611-CO-SL0002 was installed approximately 5 ft west of SWMU 3A near a crack that extended the full depth of the sump. The water table was encountered at 7 and 9 ft bls at locations 960611-CO-03A-SL0001 and 9660611-CO-SL0002, respectively. The lower apparent depth to the water table in these soil borings compared to the water table at SWMU 1A and 2A is a result of the locations being at a higher elevation (Table 3-1).

The soil sampling rationale proposed in the RFI Work Plan was modified because of the high water table (7 to 9 ft bls) and depth of the base of the sump (12.5 ft bls). Although the RFI Work Plan did not propose collecting soil samples below the water table or adjacent to site sumps, soil samples from one foot above the water table to one foot below were submitted for laboratory analysis from soil borings 960611-CO-03A-SL0001 and 9660611-CO-SL0002 to evaluate the soil in the area of the sump (Table 3-1). Soil samples for laboratory analysis were not collected below the water table at SWMU 3A.

3.2.2 Quench Tower B and Sumps, Pump Basin, and Settling Basin (SWMU 1B and 2B)

At Quench Tower B, two soil borings were installed at SWMU 1B, which includes the quench tower and sump (Table 3-1, Figure 3-3). Soil borings were placed as close as possible to cracks observed during the sump inspections. Soil boring 960613-CO-01B-SL0004 was located east of Quench Tower B in the approximate center of the structure and soil boring 960614-CO-

01B-SL0005 was located east of SWMU 1B along the middle of the sump (Figure 3-2). The water table was not encountered above bedrock at either soil boring advanced at SWMU 1B.

Soil samples from soil boring 960613-CO-01B-SL0004 were submitted to the laboratory from the base of Quench Tower B (4 to 6 ft bls), halfway between the base of Quench Tower B and the top of bedrock (8 to 10 ft bls), and just above the bedrock (12 to 14 ft bls) (Table 3-1). The 10 to 12 ft bls interval at location 960613-CO-01B-SL0004 was submitted to the laboratory but was not analyzed because the work plan required only three laboratory samples per soil boring.

At the SWMU 1B sump, soil samples from soil boring 960614-CO-01B-SL0005 were submitted to the laboratory from just above the bedrock (9 to 11 ft bls), which coincided with the base of SWMU 1B sump, and from the approximate middle of SWMU 1B sump (6 to 8 ft bls) (Table 3-1). Because of the depth of the sump (10.5 ft) and the thickness of soil beneath the sump, only one sample could be collected below the base of the SWMU 1B sump. However, a soil sample was also collected adjacent to the wall of the sump to provide additional data on site soil conditions.

Although two soil borings were proposed in the RFI Work Plan for SWMU 2B (the pump basin), soil borings could not be installed east or south of the SWMU 2B sump because of access problems. Additionally, soil borings could not be installed west of the SWMU 2B sump because of the presence of railroad ballast to 2.5 ft bls and a very shallow weathered bedrock surface (2.5 to 3 ft bls) which prohibited soil samples from being collected with a split spoon sampler. Because using soil borings to sample the soil west of SWMU 2B was not appropriate, soil sample 960619-CO-02B-SL0001, which was located between two sets of railroad tracks, was collected from a trench. Installation of the trench was performed using a backhoe, with a decontaminated bucket, to remove the railroad ballast. After the top of the native soil and rock was exposed, the backhoe bucket excavation was terminated and further exposure of the native material was performed with a decontaminated shovel. Sufficient native clay was present in weathered voids from 2.5 to 3 ft bls

beneath the 2.5 ft of railroad ballast to collect a soil sample for laboratory analysis (Table 3-1). The soil sample of the native clay material was collected with a stainless steel spoon for laboratory analysis.

3.2.3 Coal Storage Area Drain System (SWMU 5)

Soil borings were installed at four locations at SWMU 5 as proposed in the RFI Work Plan (Table 3-1, Figure 3-4). The trough associated with SWMU 5 was 4.25 ft deep and has been abandoned in place. Soil borings were located outside of the SWMU 5 trough at the northwest corner and on the east, west, and south sides. A soil boring was also located north of the SWMU 5 trough, as proposed in the RFI Work Plan; however, the soil boring was abandoned during installation after it was discovered the soil boring was inside a sump. This soil boring was relocated to the northwest corner of SWMU 5.

Soil boring 960611-CO-05-SL0001 was installed at the southern edge of the abandoned trough surrounding SWMU 5 (Figure 3-4). A perched water table was present at soil boring 960611-CO-05-SL0001 at approximately 2.0 ft bls and a soil sample was submitted for laboratory analysis from 1 to 3 ft bls (from one foot above the water table to one foot below). The perched water table continued to approximately 9 ft bls where soil samples were no longer saturated. Soil samples became saturated again just above the bedrock surface which was encountered at approximately 12.5 ft bls. Laboratory soil samples were not collected immediately below the SWMU 5 trough in soil boring 960611-CO-05-SL0001 because the soil was saturated; however, soil samples were collected in the unsaturated sediments below the trough from 9 to 11 ft bls, at the top of unsaturated sediments, and 11 to 13 ft bls, just above the bedrock surface, for laboratory analysis (Table 3-1).

Soil boring 960612-CO-05-SL0002 was installed east of the SWMU 5 trough approximately 10 ft south of the concrete slab formerly used to house pumps for SWMU 5 (Figure

3-4). A perched water table was also present at soil boring 960612-CO-05-SL0002 at approximately 2.0 ft bls and a laboratory soil sample was submitted from 1 to 3 ft bls (from one foot above the water table to one foot below) (Table 3-1). The perched water table continued to approximately 7 ft bls where soil samples were no longer saturated. Soil samples became saturated again just above the bedrock (<0.25 ft above the bedrock) which was encountered at approximately 15.5 ft bls. Laboratory soil samples were not collected immediately below the SWMU 5 trough in soil boring 960612-CO-05-SL0002 because the soil was saturated; however, soil samples were collected in the unsaturated sediments below the trough from 11 to 13 ft bls, at the top of unsaturated sediments, and 15 to 17 ft bls, just above the bedrock, for laboratory analysis.

Soil boring 960613-CO-05-SL0003 was located 5 feet north of SWMU 5 at the junction of the SWMU 5 trough with the trough that extends to SWMU 9 at No. 1 Pumphouse (Figure 3-4). Split spoon refusal was encountered at 7 ft bls and review of historical site drawings indicated location 960613-CO-05-SL0003 was installed within a former trough associated with tanks used in the tar distillation processes at SWMU 5. Soil samples collected from soil boring 960613-CO-05-SL0003 were not submitted for laboratory analysis because the soils samples were fill material, which was placed in the trough when it was abandoned, and not soil outside of the trough.

Soil boring 960613-CO-05-SL0004 was installed approximately 10 ft north of the northwest corner of the SWMU 5 trough at the junction with the trough that extends to SWMU 9 at No. 1 Pumphouse (Figure 3-4). The water table was present at location 960613-CO-05-SL0004 at approximately 2.0 ft bls and a laboratory soil sample was submitted from 1 to 3 ft bls (from one foot above the water table to one foot below) (Table 3-1). Saturated soils continued to the top of bedrock which was encountered at 11 ft bls. In order to have consistent sample intervals with other soil boring locations at SWMU 5, soil samples were submitted for laboratory analysis from 7 to 9 ft bls, midway between the bottom of the trough (4 ft bls) and the top of bedrock, and from 9 to 11 ft bls just above the bedrock (Table 3-1).

Soil boring 960613-CO-05-SL0005 was installed west of the SWMU 5 trough approximately 20 ft west of the former north tar storage tank (Figure 3-4). A perched water table was present at soil boring 960613-CO-05-SL0005 at approximately 2.0 ft bls and a soil sample was submitted to the laboratory from across the perched water table (1 to 3 ft bls). The perched water table continued to approximately 5 ft bls where soil samples were no longer saturated. The top of bedrock interface was encountered at soil boring 960613-CO-05-SL0005 at approximately 9 ft bls. A soil sample was submitted from 5 to 7 ft bls, from below the base of the trough and at the top of the unsaturated sediments, for laboratory analysis. A discreet soil sample was not collected from 7 to 9 ft bls but soil from this interval was used for SVOC and MS/MSD samples.

3.2.4 Coal Tar Collection Sump in No. 1 Pump House (SWMU 7) and Flushing Liquor Decanter and Sump (SWMUs 8 and 9)

Soil borings were installed at two locations at SWMU 7, one location at SWMU 8, and one location at SWMU 9 (Table 3-1, Figure 3-5). Soil borings were placed as close as possible to the SWMUs, but limited access with a truck mounted drill rig prevented locations from being directly adjacent to SWMUs 7, 8, and 9.

At SWMU 7, soil boring 960615-CO-07-SL0001 was located approximately 20 ft southwest of the southwest corner of the No. 1 Pump House sump (SWMU 7) and soil boring 960617-CO-07-SL0002 was located approximately 20 ft northeast of the No. 1 Pump House sump (SWMU 7) (Figure 3-5). The base of SWMU 7 is approximately 4 ft bls. The depth to bedrock was encountered at 8 and 9 ft bls at soil borings 960615-CO-07-SL0001 and 960617-CO-07-SL0002, respectively. The water table was not encountered in the soil overburden at these soil boring locations. Because the base of the SWMU 7 sump was underlain by less than six feet of soil, only two soil samples were collected from the SWMU 7 soil boring. In soil boring 960615-CO-07-SL0001, soil samples were collected for laboratory analysis from the base of the sump (4 to 6 ft bls) and just above the soil rock interface (6 to 8 ft bls) (Table 3-1). In soil boring 960617-CO-

07-SL0002, soil samples were collected for laboratory analysis from the base of the sump (4 to 6 ft bls) and just above the soil rock interface (6 to 8 ft bls).

At SWMU 8, soil boring 960617-CO-08-SL0001 was located approximately 10 ft southwest of SWMU 8 foundation (Figure 3-5). SWMU 8 was removed and only the foundation for the Flushing Liquor Decanter remains. The depth to bedrock was approximately 4 ft bls in soil boring 960617-CO-08-SL0001. Saturated soil was not encountered above the bedrock. Since the 0 to 2 ft bls sample was primarily fill material and the bedrock shallow, only the 2 to 4 ft sample was submitted for laboratory analysis.

At SWMU 9, soil boring 960614-CO-09-SL0001 was located approximately 45 ft northwest of the main sump. The depth to bedrock was approximately 7 ft bls in soil boring 960614-CO-09-SL0001. Saturated soil was not encountered above the bedrock. Soil samples were submitted for laboratory analysis from the base of the sump (2 to 4 ft bls), midway between the base of the sump and the soil rock interface (4 to 6 ft bls), and just above the soil rock interface (6 to 8 ft bls) (Table 3-1).

3.2.5 Coal Tar Decanters (SWMU 12)

Soil samples were not collected using a truck mounted drill rig at SWMU 12 because of access restrictions (Figure 3-6). Instead of installing soil borings, surficial soil samples were collected using a hand auger. The surficial soil sampling methods are discussed in Section 3.3, Surficial Soil Sampling.

3.2.6 Spill Area Around Diesel Tank (SWMU 6)

Soil samples were collected from one location at SWMU 6 (Table 3-1, Figure 3-6). The location was placed in the area excavated during the 1989 soil removal action (Figure 2-14). Soil

boring 960615-CO-06-SL0001 was located approximately 10 ft north of the northwest corner of the containment wall surrounding the diesel tank (Figure 3-7). The depth to bedrock was approximately 13.75 ft bls in 960615-CO-06-SL0001. Saturated soils were not encountered above the bedrock. As per the RFI Work Plan, soil samples were collected from soil boring 960615-CO-06-SL0001 for laboratory analysis from 0 to 1 ft bls and 1 to 2 ft bls. Soil samples were also collected for laboratory analysis from halfway between the 1 to 2 ft sample and the top of bedrock or from 6 to 8 ft bls (Table 3-1). Additionally, another soil sample was collected for laboratory analysis just above the bedrock from 12 to 14 ft bls.

3.3 SURFICIAL SOIL SAMPLING

Surficial soil samples were collected at SWMUs 1A, 1B, 10, 11, and 12 within the Coke Manufacturing Plant. Sample collection and laboratory analyses were conducted in accordance with the procedures and methods described in the site FSP and QAPP. Copies of the soil sample logs are included in Appendix B. A sample designation explanation is provided in Volume III of the RFI Coke Manufacturing Plant Report.

A total of 12 surficial soil samples were collected for lithologic description and chemical analysis (Table 3-2). Detailed soil sample logs were prepared for each surficial soil sample using the USCS. Copies of the soil sample logs are presented in Appendix B. The surficial soil samples were field screened to determine the concentration of volatile organic vapors, using an OVM equipped with a PID. The drilling, hand auger, and sampling equipment were decontaminated in accordance with the site QAPP.

At SWMUs 1A and 1B, surficial soil samples of coke breeze were collected from the top inch of soil with a stainless steel spoon. Surficial soil samples of native soil at SWMU 12 were collected with a stainless steel hand auger.

At SWMUs 10 and 11, surficial soil samples of native soil could not be collected with a hand auger because fill material beneath the asphalt road at these locations was compacted. The soil samples were collected using a truck mounted hollow stem auger drill rig. The shallow soil borings were installed during shift changes for Sloss employees so Coke Manufacturing Plant activities were not disrupted. Formation samples were collected from each borehole at 2-foot intervals using split spoon samplers in accordance with ASTM Method D-1586. The standard split spoon used was two inches in diameter and two feet in length, providing a discrete sample of the two-foot interval. The split spoon was attached to the end of the drilling rod and driven into the soil the length of the sampler. After reaching the desired depth, the split spoon was withdrawn from the borehole, detached from the drilling rod, and opened. The upper portion of the split spoon was discarded. Drill cuttings generated at SWMUs 10 and 11 soil sample locations were containerized in DOT-approved 55 gallon drums, labeled, and stored in a central staging area. Each borehole was abandoned by filling the bore hole with a 3% bentonite mixture neat cement grout.

To prevent volatilization, soil from each sample interval was collected for VOC analysis by transferring the soil directly from the sampling instrument to the appropriate sample container immediately after the split spoon was opened. The VOC samples were then placed in a cooler with ice. The remaining soil was composited for semi-volatile and metals analysis. Sample compositing followed procedures discussed in Section 3.2. After the compositing was complete, the sample was then spooned into wide-mouth glass jars with Teflon™ lined caps.

Some of the soil samples had high clay content. In clayey soils, mixing the samples according to the standard procedures was not possible. In these cases, the sample was placed in the bowl and finely subdivided with a stainless-steel spoon. Representative portions of the subdivided sample were then distributed to appropriate sample containers.

Duplicate soil samples for semivolatile and metals analysis were collected by transferring soil from the stainless steel bowl into the appropriate containers in equal portions until the containers

were full. In clayey soils, each duplicate container was filled with equally representative soil portions. Equipment blanks and field blanks were collected according to the frequency and procedures specified in the site QAPP.

Soil samples were preserved with ice and shipped *via* overnight carrier service to Center for Applied Engineering, Inc. in St. Petersburg, Florida for USEPA Method 8260, USEPA Method 8270, the thirteen PP metals, barium, and cyanide analysis. Analytical reports for the soil samples are presented in Volume III, Analytical Data, of the RFI Coke Manufacturing Plant Report. After completion of the sampling and analysis program, the field and analytical data were reviewed and validated according to the procedures outlined in the site QAPP. The checklists completed during the data validation are included in Volume III, Analytical Data, of the RFI Coke Manufacturing Plant Report.

The intervals sampled at each location and the methodology used to select the sample intervals is discussed below in SWMU specific sections.

3.3.1 Quench Tower A (SWMU 1A)

Surficial soil samples were collected from three locations at SWMU 1A associated with Quench Tower A (Table 3-2, Figure 3-2). Locations were placed along the eastern side of Quench Tower A. Surficial soil sample 960608-CO-01A-SL0001 was collected approximately 5 ft east of the southeast corner of Quench Tower A. Surficial soil sample 960608-CO-01A-SL0002 was collected approximately 5 ft east of the center of Quench Tower A. Surficial soil sample 960608-CO-01A-SL0003 was collected approximately 5 ft east of the northeast corner of Quench Tower A. All surficial soil samples at Quench Tower A (SWMU 1A) were scrape samples of coke breeze collected from the upper one inch of soil with a stainless steel spoon.

3.3.2 Quench Tower B (SWMU 1B)

Surficial soil samples were collected from three locations at SWMU 1B associated with Quench Tower B (Table 3-2, Figure 3-3). Locations were placed along the eastern side of Quench Tower B. Surficial soil sample 960608-CO-01B-SL0001 was collected approximately 5 ft east of the southeast corner of Quench Tower B. Surficial soil sample 960608-CO-01B-SL0002 was collected approximately 5 ft east of the center of Quench Tower B. Surficial soil sample 960608-CO-01B-SL0003 was collected approximately 5 ft east of the northeast corner of Quench Tower B. All surficial soil samples at Quench Tower B (SWMU 1B) were scrape samples of coke breeze collected from the upper one inch of soil with a stainless steel spoon.

3.3.3 Coal Tar Decanters (SWMUs 10, 11, and 12)

Surficial soil samples were collected from two locations at SWMUs 10, 11, and 12 (Table 3-2, Figures 3-6 and 3-8). Locations were placed close as possible to each SWMU. A truck mounted drill rig was used to collect soil samples at SWMUs 10 and 11 because the fill material beneath the asphalt road adjacent to the containment structures was compacted and a hand auger could not auger through the fill material. A stainless steel hand auger was used to collect soil samples at SWMU 12 because overhead piping prevented drill rig access.

At SWMU 10, surficial soil samples 960618-CO-10-SL0001 and 960618-CO-10-SL0002 were located approximately 10 ft northwest of the corners (southwest and northwest corners, respectively) of the containment structure at SWMU 10 (Figure 3-8). Soil sample locations had to be installed in the center of the asphalt road adjacent to SWMU 10 due to the presence of a water line just west of the SWMU 10 containment structure. In both soil borings, surficial soil samples were collected below the compacted fill material from 2 to 4 ft bls for laboratory analysis (Table 3-2).

At SWMU 11, surficial soil samples 960614-CO-11-SL0001 and 960614-CO-11-SL0002 were collected northwest of the corners (southwest and northwest corners, respectively) of the SWMU 11 containment structure (Figure 3-8). In both soil borings, surficial soil samples were collected below the compacted fill material from 2 to 4 ft bls for laboratory analysis (Table 3-2).

At SWMU 12, surficial soil sample locations 960607-CO-12-SL0001 and 960607-CO-12-SL0002 were placed in the approximate location of SWMU 12 (Figure 3-6). As discussed previously, SWMU 12 had been removed and other Coke Manufacturing Plant equipment had been installed in its place. The locations for the surficial soil samples were determined from aerial photographs and plant drawings and were placed as close as possible to the former coal tar decanter location. The top of bedrock was encountered at location 960607-CO-12-SL0002 at approximately 2 ft bls. Surficial soil samples from both locations at SWMU 12 were collected from 0.5 to 1.5 ft bls (Table 3-2).

3.4 QUENCH WATER SAMPLING

A total of two quench water samples (960607-CO-02A-PW0001 and 960605-CO-02B-PW0001) were collected from the clear well sump at SWMUs 2A and 2B. Collection and laboratory analysis of quench water samples were performed in accordance with procedures and methods described in the FSP and QAPP. All quench water samples were collected with a Teflon™ bailer and poured directly into sample containers. Quench water sampling equipment was decontaminated in accordance with the QAPP.

During collection of quench water samples, field measurements of pH, specific conductance, and temperature were performed and recorded on water sampling logs (Table 3-3). A small aliquot of water was collected using a Teflon™ bailer and analyzed for the field parameters according to procedures described in the QAPP. Quench water sampling logs are presented in Appendix B. A sample designation explanation is provided in Volume III of the RFI Coke Manufacturing Plant Report.

All samples were preserved with ice and shipped *via* overnight delivery service to Center for Applied Engineering, Inc. Quench water samples were analyzed for USEPA Method 8260, USEPA Method 8270, the thirteen PP metals, barium, and cyanide. Analytical reports for the quench water samples are presented in Volume III, Analytical Data, of the RFI Coke Manufacturing Plant Report. After completion of the sampling and analysis program, the field and analytical data were reviewed and validated according to procedures outlines in the site QAPP. The checklist completed during the data validation is included in Volume III, Analytical Data, of the RFI Coke Manufacturing Plant Report.

3.5 SITE SURVEY

Abrams Aerial Survey Corporation prepared a site topographic map for the Sloss Industries Corporation Facility during preparation of the RFI Work Plan. During the Facility-Wide investigation, information was obtained from Abrams Aerial Survey Corporation on the survey control used during preparation of the base map so that the site surveys for all RFIs could be tied to the existing site map. This site map was used as the base map for the Coke Manufacturing Plant investigation. All surveying completed for the Coke Manufacturing Plant investigation was conducted by a State-certified land surveyor.

In June 1996, soil boring and surficial soil sample locations were surveyed vertically to mean sea level and tied horizontally to the site base map. Coke Manufacturing Plant survey data is presented in Appendix C and surficial elevations for the soil borings and surficial soil samples are presented on Tables 3-1 and 3-2.

4. COKE MANUFACTURING PLANT INVESTIGATION DATA EVALUATION

During the Coke Manufacturing Plant Investigation, several investigative approaches were utilized in evaluating whether a release had occurred in the past. Physical integrity inspections were conducted at sumps located at SWMUs 1A, 2A, 3A, 1B, 2B, 5, 7, and 9 and the concrete foundation at SWMU 8 to evaluate the potential for releases. The chemical properties of surficial and/or subsurface soils associated with the Coke Manufacturing Plant SWMUs and the Spill Area Around Diesel Tank (SWMU 6) were also investigated to confirm the presence or absence of contamination at these SWMUs. Additionally, the chemical properties of quench water at SWMUs 2A and 2B were also investigated to aid in the evaluation of soil samples collected outside of the these pump basins. Surficial and subsurface soils and quench water samples were analyzed for VOCs (USEPA Method 8260), SVOCs (USEPA Method 8270), the thirteen PP metals, barium and cyanide.

Soil concentrations were evaluated based upon a comparison to USEPA Region III Risk-Based Concentrations (RBCs) for Soil Ingestion in a residential setting as presented in the Region III USEPA Risk-Based Concentration Table dated April 2000 (Table 4-1). The residential RBCs for soil ingestion were used as a screening tool to identify if a potential risk exists. A risk assessment was then conducted to evaluate actual risk that may exist. RBCs are chemical concentrations corresponding to fixed levels of risk (i.e., hazard quotient of 1, or a lifetime cancer risk of 10^{-6}, whichever occurs at a lower concentration). The RBCs were developed by taking toxicity constants (reference doses and carcinogenic potency slopes) and combining these constants with "standard" exposure scenarios. Residential RBCs for soil ingestion were not available for several compounds detected including acenaphthylene, benzo(g,h,i)perylene, and phenanthrene (Table 4-1).

Based upon a review of data collected at Coke Manufacturing Plant SWMUs and the Spill Area Around the Diesel Tank (SWMU 6), concentrations of metals detected were below residential

RBCs except for arsenic, antimony, copper, and lead. Because concentrations of arsenic are naturally high in site soils, site background soil results for arsenic were used during the data evaluation (Tables 2-1 and 4-1).

4.1 QUENCH TOWER A AND SUMP, PUMP BASIN, AND SETTLING BASIN (SWMUS 1A, 2A, AND 3A)

The physical integrity of Quench Tower A and the sumps at SWMUs 1A, 2A, and 3A were evaluated and subsurface and surficial soil were submitted for laboratory analysis during the RFI (Figure 3-2).

4.1.1 Physical Evaluation

4.1.1.1 Quench Tower A and Sump (SWMU 1A)

Plant drawings indicated the base of Quench Tower A is 64 feet in length by 25 feet in width. No cracks or defects in the concrete structure were observed during the physical evaluation of Quench Tower A. Large cracks were observed at the joints between the sump and exterior structure of Quench Tower A within the outfall troughs. The sump surface drawing and photographic log documenting the sump inspection for Quench Tower A are included in Appendix A.1.

Plant drawings indicate the sump associated with Quench Tower A (SWMU 1A) is 64 feet in length and 15.5 feet wide. The SWMU 1A sump is 10 feet deep; however, the west wall of the sump extends five feet higher than the east, north, and south walls and acts as a retaining wall for the fill material located to the west. The sump has a maximum water depth of 10 feet. The sump surface drawing and photographic log documenting the sump inspection for the SWMU 1A sump are included in Appendix A.1.

The concrete surface at SWMU 1A showed no deterioration from chemical corrosion. Multiple medium to large cracks were present on the north, south, and east interior walls of the sump and one medium crack was present on the floor of the sump on the northeast corner. Water seeps, with temperatures in excess of ambient air, were discharging from these cracks. Although water was seeping from the cracks, the cracks did not appear to continue more than two inches into the structure when probed with a thin wire. All four corner wall joints remained damp during the inspection, although measurable flow from the corner joints was not observed.

4.1.1.2 Quench Tower A Pump Basin (SWMU 2A)

Plant drawings indicate that the SWMU 2A sump is 17.75 feet in length, 18 feet wide, and has a depth of 12 feet. A sump surface drawing and photographic log documenting the SWMU 2A sump inspection are included in Appendix A.2. The concrete surface at SWMU 2A showed no deterioration from chemical corrosion.

Multiple medium sized horizontal and vertical cracks were present on all four walls and the base of SWMU 2A; these cracks did not appear to extend more than 2 inches into the structure when probed with a thin wire. Water was observed seeping from the crack running the full length of the south and west walls and from a crack just above the outfall pipe to the quench water pumps on the north wall.

A total of three chipped areas of concrete, less that 0.25 ft deep, were present on the north and south walls of SWMU 2A. Bricks were missing from the east and west wall above the maximum water level in SWMU 2A and patching material was present over some of the crevices formed by missing bricks.

4.1.1.3 Old Quench Tower A Settling Basin (SWMU 3A)

Plant drawings indicate that the SWMU 3A sump is 54 feet in length, 19 feet wide, and has a depth of 12.5 feet. The west wall of the sump extends five feet higher than the east, north, and south walls and acts as a retaining wall for the fill material located to the west. The sump surface drawing and photographic log documenting the sump inspection for SWMU 3A are included in Appendix A.3. The south wall could not be examined during the inspection because quench water was leaking from SWMUs 1A and 2A through a concrete plug installed at the former outfall to the pump basin (SWMU 2A).

One area of corrosion (0.25 ft × 0.25 ft) with an associated water seep was observed near the northeast corner of the north wall approximately ten feet below the top of the sump. Multiple horizontal and vertical, medium to large sized cracks were present on the north, east, and west walls of SWMU 3A, and multiple medium cracks were present on the base of SWMU 3A. Multiple water seeps were present from horizontal and vertical cracks present on the north, east, and west walls. One large vertical crack appeared to continue through the structure based on observations at the top of the sump; however, the cracks on the four walls and the base of SWMU 3A did not appear to extend more than 2 inches into the structure when probed with a thin wire.

Two chipped areas of concrete, less than 0.25 ft deep, were present on the east wall of SWMU 3A. One joint on the west wall, that formerly contained wooden baffles, remained damp during the inspection, although measurable flow from the joint was not observed.

4.1.2 Surficial Soil Sampling

Three surficial soil samples were collected from the area east of Quench Tower A and analyzed for VOCs, SVOCs, PP metals, barium and cyanide (Figure 3-2).

4.1.2.1 Soil Description

Surficial soil samples collected from the area east of Quench Tower A consisted of loose, very fine to medium grained, black, coke breeze (Appendix B). The surficial soil samples were moist and no odor was present.

4.1.2.2 Chemical Characteristics

4.1.2.2.1 Volatile Organic Compounds

Methylene chloride and tetrachloroethene were detected in surficial soil samples collected on the east side of Quench Tower A (SWMU 1A); however, concentrations detected were below residential RBCs (Table 4-2).

4.1.2.2.2 Semivolatile Organic Compounds

Five PAHs were detected in surficial soil samples collected from the area east of Quench Tower A; however concentrations were below residential RBCs (Table 4-2).

4.1.2.2.3 Metals and Cyanide

Six of the 13 PP metals were detected in surficial soils samples collected in the area east of Quench Tower A (Table 4-2). Cyanide was not detected in the surficial soil samples. Although the arsenic concentrations were above the residential RBC in all surficial soil samples, the concentrations of arsenic detected were within site background concentrations (Table 4-1).

4.1.3 Subsurface Soil Sampling

Two soil borings were installed at each SWMU (1A, 2A, and 3A). Subsurface soil samples from these soil borings were analyzed for VOCs, SVOCs, PP metals, barium, and cyanide.

4.1.3.1 Soil Description

Subsurface soil at SWMUs 1A, 2A, and 3A consisted of 2 to 6 feet of stiff to loose, black, coke breeze overlying a plastic, moderate reddish brown to moderate brown, clay (CL-CH) with minor reddish brown mottling (Appendix B). Soil samples were saturated at approximately 3 ft bls at SWMUs 1A and 2A and 7 to 9 ft bls at SWMU 3A.

4.1.3.2 Chemical Characteristics

4.1.3.2.1 Volatile Organic Compounds

Acetone and methylene chloride were detected in subsurface soil samples collected at SWMUs 1A, 2A, and 3A; however concentrations detected were below residential RBCs. (Table 4-3).

4.1.3.2.2 Semivolatile Organic Compounds

SVOCs were not detected in soil samples composed of clay collected across the water table (6 to 8 ft bls and 8-10 ft bls) at SWMU 3A and beneath the SWMU 2A sump from 16 to 18 ft bls (Table 4-3 and Figure 3-2). At SWMUs 1A and 2A, six PAHs were detected in subsurface soil samples, which were predominantly composed of coke breeze, collected across the water table from 2 to 4 ft bls. Additionally, four phenolic compounds were detected at SWMU 2A. One SVOC, benzo(a)anthracene, was above its residential RBC. The PAHs detected in

subsurface samples are characteristic of coal and coke breeze. Clay soil underlying the site appears to be acting as a barrier mitigating the downward migration of PAHs.

4.1.3.2.3 Metals and Cyanide

Ten PP metals and cyanide were detected in subsurface soil samples collected at SWMUs 1A, 2A, and 3A (Table 4-3). Although arsenic was detected above the residential ingestion RBC in all subsurface soil samples collected from SWMUs 1A, 2A, and 3A, concentrations of arsenic exceeded the background soil range in only two soil samples 960610-CO-02A-SL0002 (2-4) and 960611-CO-03A-SL9002 (duplicate of 960611-CO-03A-SL0002 (8-10)). Based on background soil sampling results, soils in the vicinity of the Sloss facility contain elevated concentrations of arsenic.

4.1.4 Quench Water

A quench water sample was collected from the pump basin associated with Quench Tower A (SWMU 2A) (Figure 3-2). The quench water was light gray and slightly turbid and had a temperature of 54.7 degrees centigrade. Field measurements for the quench water sample are summarized in Table 3-3.

4.1.4.1 Chemical Characteristics

4.1.4.1.1 Volatile Organic Compounds

1,2,3-Trichloropropane (TCP), was detected in the quench water sample collected from SWMU 2A at a concentration of 1.3 micrograms per liter (µg/L).

4.1.4.1.2 Semivolatile Organic Compounds

No SVOCs were detected in the quench water sample collected from SWMU 2A (Table 4-4).

4.1.4.1.3 Metals and Cyanide

One metal, barium, was detected in the quench water sample collected from SWMU 2A (Table 4-4).

4.1.5 Conclusion

Concentrations of VOCs and SVOCs detected in surficial soil samples and VOCs detected in subsurface soil samples were below residential RBCs. Concentrations of benzo(a)anthracene (1,400 to 6,700 µg/kg) exceeded the residential RBC in three subsurface soil samples. Although concentrations of arsenic (9 to 96 mg/kg) exceeded residential RBCs in surficial and subsurface soil samples, the concentrations detected were for the most part within site background soil ranges. The quench water did not appear to affect the surrounding soil since TCP was not detected in the subsurface soil samples collected west of SWMU 2A.

Since concentrations of benzo(a)anthracene exceeded the residential RBC in subsurface soil samples and concentrations of arsenic detected in surficial and subsurface soil exceeded both the residential RBC and site background soil concentrations, a risk evaluation is appropriate for the Quench Tower A SWMUs.

4.2 QUENCH TOWER B AND SUMP AND PUMP BASIN (SWMUS 1B AND 2B)

The physical integrity of Quench Tower B and the sumps at SWMUs 1B and 2B were investigated and surficial and subsurface soil samples were submitted for laboratory analysis during the RFI (Figure 3-3).

4.2.1.1 Physical Evaluation

4.2.1.1.1 Quench Tower B and Sump (SWMU 1B)

Plant drawings indicated the base of Quench Tower B was 64 feet in length by 25 feet in width. Surface drawings and photographic logs documenting the inspection of Quench Tower B sumps are included in Appendix A.4. Medium cracks were observed in the concrete structure during the physical evaluation of Quench Tower B. Large cracks were observed at the two corners of the concrete weir that discharges Quench Tower B water to its associated sump (SWMU 1B).

Plant drawings indicate the sump associated with Quench Tower B (SWMU 1B) is 54 feet in length, 19 feet wide, and has a depth of 10.5 feet. The sump surface drawing and photographic log documenting the sump inspection for SWMU 1B are included in Appendix A.4. The concrete surface at SWMU 1B showed no deterioration from chemical corrosion. Fine to medium cracks were observed on all four walls and the base of SWMU 1B. The majority of the cracks on the walls were vertical. No water seeps were observed at any of the cracks present in SWMU 1B. Cracks did not appear to continue more that two inches into the structure when probed with a thin wire.

The northwest corner joint appeared to have been repaired with sealant previously, no wetness was observed around the joint (Appendix A.4). Two joints were observed on the north and south walls that remained damp during the inspection however no measurable flow was observed. One area where rebar appeared to have rusted out and concrete spalling had occurred

was observed near the base of the sump near the northwest corner of the north wall of SWMU 1B.

4.2.1.2 Quench Tower B Pump Basin (SWMU 2B)

Plant drawings indicate that the SWMU 2B sump is 22.6 feet in length, 19 feet wide, and has a depth of 10.5 feet. The sump surface drawing and photographic log documenting the sump inspection for SWMU 2B are included in Appendix A.5. Minor areas (0.01 to 0.03 ft maximum length) of corroded (soft) concrete were present on the walls of SWMU 2B.

Multiple fine sized cracks were present on all four walls of SWMU 2B. In most cases, cracks on the walls were near vertical and ran almost the full length of the wall (Appendix A.5). The base of SWMU 2B had numerous medium cracks that appeared to run the full length or width of the base. These cracks did not appear to extend more than 2 inches into the structure when probed with a thin wire. One chipped area of concrete, 0.5 ft maximum length and less that 0.25 ft deep, was present within the outfall from SWMU 1B but did not appear to continue through the structure.

4.2.2 Surficial Soil Sampling

Three surficial soil samples were collected east of Quench Tower B and analyzed for VOCs, SVOCs, PP metals, barium and cyanide (Figure 3-3).

4.2.2.1 Soil Description

Surficial soil (0-0.1 ft bls) east of Quench Tower B consisted of loose, very fine to medium grained, black, coke breeze (Appendix B). The surficial soil samples were moist and no odor was present.

4.2.2.2 Chemical Characteristics

4.2.2.2.1 Volatile Organic Compounds

One VOC, m- and p-xylenes, was detected in two of the surficial soil (0-0.1 ft bls) samples collected east of Quench Tower B; however, the residential RBC for m-xylene was not exceeded (Table 4-5).

4.2.2.2.2 Semivolatile Organic Compounds

Nine PAHs were detected in surficial soil samples collected east of Quench Tower B. Concentrations of benzo(a)anthracene and benzo(a)pyrene detected in soil sample 960608-CO-01B-SL0001(0-0.1) were above residential RBCs (Table 4-5 and Figure 3-3).

4.2.2.2.3 Metals and Cyanide

Six of the 13 PP metals and cyanide were detected in surficial soil samples collected at Quench Tower B (Table 4-5). Although arsenic was detected above the residential RBC in all surficial soil samples, the concentrations of arsenic detected in these samples was within the site background soil range (Table 4-1).

4.2.2.3 Subsurface Soil Sampling

Two soil borings were installed at Quench Tower B and sump (SWMU 1B) and a trench was installed at SWMU 2B (Figure 3-3). Subsurface soil samples were analyzed for VOCs, SVOCs, PP metals, barium, and cyanide.

4.2.2.3.1 Soil Description

Subsurface soil east of SWMU 1B was not saturated and consisted of 2 to 4 feet of stiff to loose, very fine grained, black, coke breeze and/or slag overlying a stiff to plastic, moderate reddish brown to moderate brown, clay (CL-CH) with some brown to black mottling (Appendix B). The top of bedrock was encountered from 11.5 to 13 ft bls at SWMU 1B. Subsurface soil collected from the trench on the west side of SWMU 2B, which was placed between railroad tracks, consisted of 2.5 feet of railroad ballast overlying weathered limestone with stiff, brown clay present in weathered voids. An oil like substance was observed on soil collected from the trench.

4.2.2.4 Chemical Characteristics

4.2.2.4.1 Volatile Organic Compounds

Acetone was detected in one subsurface soil sample 960613-CO-01B-SL0004 (12-14) collected at SWMU 1B and methylene chloride and 2-hexanone were detected in subsurface soil sample 960619-CO-02B-SL0001 (2.5 to 3) collected at SWMU 2B (Table 4-6). Acetone and methylene chloride concentrations detected were below residential RBCs.

4.2.2.4.2 Semivolatile Organic Compounds

At Quench Tower B, SVOCs were not detected in soil boring 960613-CO-01B-SL0004 installed east of the quench tower (Table 4-6 and Figure 3-3). In soil boring 960614-CO-01B-SL0005 located east of the SWMU 1B sump, fifteen PAHs and dibenzofuran, were detected in the subsurface soil sample collected from the 6 to 8 ft bls interval and its duplicate; however, PAHs were not detected in the 9 to 11 ft bls depth interval (Table 4-6). Concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene detected in the 6 to 8 ft bls interval were above residential RBCs.

At SWMU 1B, the one soil sample (6 to 8 ft bls), which contained PAHs, was collected two feet below coke breeze/slag material and approximately 30 feet east of the SWMU 1B sump. PAHs were not found below this sample (9 to 11 ft bls) nor in soil samples collected east of Quench Tower B; therefore, the clay soil underlying the site east of Quench Tower B appears to be acting as a barrier mitigating the downward migration of PAHs.

At SWMU 2B, 10 PAHs were detected in the soil sample collected west of the sump (Table 4-6). Concentrations of benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene detected at SWMU 2B exceeded residential RBCs.

4.2.2.4.3 Metals and Cyanide

Ten of the 13 PP metals and cyanide were detected in subsurface soil samples collected at SWMUs 1B and 2B (Table 4-6). Although the arsenic concentrations were above the residential RBC in all subsurface soil samples collected at SWMUs 1B and 2B, the arsenic concentrations were within the site background range. Based on background soil sampling results, soils in the vicinity of the Sloss facility contain elevated concentrations of arsenic. The concentrations of lead and copper detected in soil sample 960613-CO-01B-SL0004 (8-10) were above residential RBCs and site background soil ranges.

4.2.3 Quench Water

A quench water sample was collected from the pump basin associated with Quench Tower B (SWMU 2B) (Figure 3-3). The quench water collected from the pump basin associated with Quench Tower B (SWMU 2B) was light gray and slightly turbid and had a temperature of 59.8 degrees centigrade. Field measurements of the quench water sample are summarized in Table 3-3.

4.2.3.1 Chemical Characteristics

4.2.3.1.1 Volatile Organic Compounds

TCP, m- and p-xylenes, and o-xylene were detected in the quench water from SWMU 2B (Table 4-4).

4.2.3.1.2 Semivolatile Organic Compounds

No SVOCs were detected in quench water samples collected from SWMU 2B (Table 4-4).

4.2.3.1.3 Metals

One PP metal, barium, was detected in quench water samples collected from SWMU 2B (Table 4-4).

4.2.4 Conclusion

Concentrations of VOCs detected in surficial and subsurface soil samples collected at SWMUs 1B and 2B were below residential RBCs. In one surficial soil sample collected at SWMU 1B, concentrations of benzo(a)anthracene (1,200 µg/kg) and benzo(a)pyrene (550 µg/kg) were above residential RBCs. At the SWMU 1B sump, concentrations of benzo(a)anthracene (2,500 to 16,000 µg/kg), benzo(a)pyrene (14,000 µg/kg), benzo(b)fluoranthene (2,000 to 17,000 µg/kg), and indeno(1,2,3-cd)pyrene (980 µg/kg) detected in the 6 to 8 ft bls interval were above residential RBCs. At SWMU 2B, the concentrations of benzo(a)anthracene (1,800 µg/kg), benzo(a)pyrene (1,600 µg/kg), and benzo(b)fluoranthene (2,400 µg/kg) detected exceeded residential RBCs. Although concentrations of arsenic (4.2 to 11 mg/kg) exceeded the residential RBC in surficial and subsurface soil samples, the concentrations detected were within site background soil ranges. Concentrations of lead (1,200 mg/kg) and copper (32,000 mg/kg)

detected in one subsurface soil sample collected at SWMU 1B exceeded residential RBCs and site background concentrations.

The quench water did not appear to affect the surrounding soil since TCP, m- and p-xylenes, and o-xylene were not detected in the subsurface soil samples collected west of SWMU 2B.

Since concentrations of PAHs detected in surficial and subsurface soil and copper and lead detected in subsurface soil exceeded residential RBCs, a risk evaluation is appropriate for this SWMU.

4.3 COAL STORAGE AREA DRAIN SYSTEM (SWMU 5)

Soil borings were installed at SWMU 5 and subsurface soil samples were submitted for laboratory analysis during the RFI.

4.3.1 Physical Evaluation

As part of ongoing operational improvements, the coal tar tanks and trough, SWMU 5, were abandoned in place by Sloss Industries personnel prior to implementation of the Coke Manufacturing Plant RFI and an inspection of the trough surrounding SWMU 5 could not be performed (Figure 3-4). Plant drawings indicate the trough was 4 ft wide and 4.25 ft deep. The total footage of the trough system, which was located between the two tar tanks and surrounded the tanks, was 460 ft.

Abandonment of the trough consisted of the following steps. The steel plates overlying the in-ground concrete trough were removed and the concrete trough was exposed and sandblasted to remove coal tar stains. Debris generated from the sandblasting was deposited in the trough. After sandblasting operations were completed, the debris was removed from the trough and disposed of

properly. After sandblasting, the in-ground concrete trough was abandoned in place by backfilling the trough with clean fill dirt. A photographic log of the cleaning and abandonment of the trough at SWMU 5 are included in Appendix A.6.

4.3.2 Subsurface Soil Sampling

Four soil borings were installed at SWMU 5 and subsurface soil samples were submitted for laboratory analysis of VOCs SVOCs, PP metals, barium, and cyanide (Figure 3-4).

4.3.2.1 Soil Description

Subsurface soil at SWMU 5 consisted of approximately 0.5 ft of stiff, reddish brown, clay (CL) overlying approximately one ft of coke. Clay was not present above the coke at location 960612-CO-05-SL0002. Stiff, gray to brown to reddish brown clay (CL) was present below the coke to the top of bedrock encountered from 9 to 15.5 ft bls. Some stiff, dark gray silty sand (SM), however, was observed at location 960611-CO-05-SL0001 from 3 to 5 ft bls.

A perched water table and associated saturated soil was present from 2 to approximately 9 ft bls at SWMU 5. Below the perched water table, soil samples were not saturated. Saturated soil samples were again encountered just above the soil rock interface. A tar like substance, a sheen on formation water, and chemical odor were observed from 9 to 13 ft bls, below the perched water table, at location 960612-CO-05-SL0002 and from 3 to 9 ft bls, within the perched water table, at location 960613-CO-05-SL0005. A chemical odor was also detected within the perched water table from 7 to 9 ft bls at location 960611-CO-05-SL0001 and 1 to 7 ft bls at location 960613-CO-05-SL0004.

4.3.2.2 Chemical Characteristics

4.3.2.2.1 Volatile Organic Compounds

Benzene, ethylbenzene, toluene, m- and p-xylenes, and o-xylene (BTEX) compounds were detected in SWMU 5 soil borings installed west (960613-CO-05-SL0005) and northwest (960613-CO-05-SL0004) of the trough in the soil samples collected across the top of the perched water table (1 to 3 ft bls) and in unsaturated soil immediately below the perched water table (Table 4-7 and Figure 3-4). Additionally, BTEX compounds were detected in soil boring 960612-CO-05-SL0002 installed east of SWMU 5 in the sample collected immediately below the perched water table. Concentrations of BTEX compounds decreased with depth and were not detected above the bedrock in the east and northwest soil borings. Trichloroethene was detected in one sample collected below the perched water table in the northwest soil boring.

Concentrations of acetone, methylene chloride, and 1,1,2,2-tetrachloroethane were detected in soil samples collected from soil boring 960611-CO-05-SL0001 located south of the trench and from the east, west and northwest soil borings. VOCs detected in subsurface samples at SWMU 5 were below residential RBCs.

4.3.2.2.2 Semivolatile Organic Compounds

Seventeen PAHs and dibenzofuran were detected in subsurface soil samples collected at SWMU 5 (Table 4-7). PAHs were detected in the south soil boring 960611-CO-05-SL0001 in the sample collected across the top of the perched water table (1 to 3 ft bls) and at the top of the bedrock (11 to 13 ft bls). PAHs and dibenzofuran were detected in the east soil boring 960612-CO-05-SL0002 in the three intervals sampled (across and below the perched water table and at the top of bedrock). PAHs were detected in the northwest soil boring 960613-CO-05-SL0004 in the sample collected immediately below the perched water table (7 to 9 ft bls). PAHs and dibenzofuran were detected in the west soil boring 960613-CO-05-SL0005 in the samples

collected across the perched water table (1 to 3 ft bls) and immediately below the perched water table (5 to 7 ft bls). Concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene exceeded residential RBCs (Table 4-7).

4.3.2.2.3 Metals and Cyanide

Eleven of the 13 PP metals and cyanide were detected in subsurface soil samples collected at SWMU 5 (Table 4-7). Although arsenic was detected above the residential RBC in all subsurface soil samples collected from SWMU 5, the concentrations detected were within the site background soil range except for one soil sample 960913-CO-05-SL9005 (duplicate of 960913-CO-05-SL0005 (5-7)). Based on background soil sampling results, soils in the vicinity of the Sloss facility contain elevated concentrations of arsenic.

4.3.3 Conclusion

Concentrations of VOCs detected in subsurface soil samples collected at SWMU 5 were below residential RBCs. Concentrations of benzo(a)anthracene (1,500 to 7,100 µg/kg), benzo(a)pyrene (1,200 to 7,800 µg/kg), benzo(b)fluoranthene (1,200 to 6,800 µg/kg), dibenzo(a,h)anthracene (430 µg/kg), and indeno(1,2,3-cd)pyrene (1,700 to 7,900 µg/kg) exceeded residential RBCs. Although concentrations of arsenic (3.0 to 22 mg/kg) exceeded the residential RBC in subsurface soil samples, the concentrations detected were for the most part within site background soil ranges.

Since concentrations of PAHs detected in subsurface soil exceeded residential RBCs and arsenic concentrations exceeded the residential RBC and site background soil concentrations, a risk evaluation is appropriate for this SWMU.

4.4 COAL TAR COLLECTION SUMP IN PUMP HOUSE (SWMU 7) AND FLUSHING LIQUOR DECANTER AND SUMP (SWMUS 8 AND 9)

The physical integrity of the sumps SWMUs 7, 8, and 9 were investigated and four soil borings were installed during the RFI.

4.4.1 Physical Evaluation

4.4.1.1 Coal Tar Collection Sump in No. 1 Pump House (SWMU 7)

Plant drawings indicate SWMU 7 is a total of 45 feet in length, 3 feet wide, and has a depth of 4 feet. The SWMU 7 sump does not extend across the entire length of the No. 1 Pump House and has a northern portion (10 feet in length) and a southern portion (35 ft in length) (Figure 3-5). A sump surface drawing and photographic log of SWMU 7 documenting the sump inspection are included in Appendix A.7.

Cracks were not observed in the concrete surface at SWMU 7. Two areas of pitting, with a maximum width of 0.5 ft, were present on the west wall of the northern portion of SWMU 7 and the eastern wall of the southern portion of SWMU 7. No corrosion was observed around pitted areas and the depth of pitted areas was less than 0.25 ft. Water was observed seeping from the pitted area in the southern portion of SWMU 7. Joints in the southwest and southeast corner of the southern portion remained damp near the base of the sump during the inspection; however, measurable flow from corner joints was not observed. Five pipes, three of which were capped, were observed entering or exiting SWMU 7 during the inspection. Water with a slight sheen was observed seeping from the uncapped pipe on the west wall of the north portion of SWMU 7.

4.4.1.2 Flushing Liquor Decanter (SWMU 8)

Plant drawings indicate SWMU 8 is 40 feet in length, 8 feet wide, and has a height of 4 feet. A surface drawing and photographic log documenting the sump inspection for SWMU 8 are included in Appendix A.8. Fine to medium vertical cracks were observed on the east, west, and south walls of the SWMU 8 foundation and medium to large cracks oriented east-west were observed on the top of the structure. Additionally, a medium to large horizontal crack occurs approximately 1-foot below the top of SWMU 8 on all sides at the location of a horizontal joint that connects the top and sides of the structure. The cracks did not appear to extend more than 1/8-inch into the structure when probed with a thin wire except for a large crack on the top of the structure located approximately 7 feet north of the southern end. This large crack extends through the top of the structure, through the east and west sides of the structure to the horizontal joint approximately 1-foot from the top, and through the horizontal joint. The large crack was formed when the top of the foundation was displaced four inches to the west when struck by equipment used to clean the SWMU 9 sump during the summer of 1996. The crack occurred after the flushing liquor decanter had been removed. Concrete on the top of the structure has a pitted surface.

4.4.1.3 Flushing Liquor Decanter Sump (SWMU 9)

Plant drawings indicate SWMU 9 is 96 feet in length, 7 feet wide, and has a depth of 4 feet. A sump surface drawing and photographic log documenting the sump inspection of SWMU 9 are included in Appendix A.9. Medium to large, horizontal and vertical cracks, some seeping water, were observed in the west wall of SWMU 9. Cracks were not observed on the north, south, and east walls of SWMU 9. On the base of SWMU 9, four medium cracks, three of which extended the width of the sump, were observed. Tar seeps were observed from three of the four existing cracks on the base and at two locations at the contact between the east wall and the base of SWMU 9.

Joints in the southwest and southeast corner of the SWMU 9 remained damp near the base of the sump during the inspection; however, measurable flow from corner joints was not observed. Nineteen uncapped pipes were observed entering or exiting SWMU 9 during the inspection. Water with a slight sheen was observed seeping from and/or around the uncapped pipes exiting the south wall of SWMU 9.

4.4.2 Subsurface Soil Sampling

Four soil borings were installed at SWMUs 7, 8, and 9 and subsurface soil samples were submitted for laboratory analysis of VOCs, SVOCs, PP metals, barium, and cyanide (Figure 3-5).

4.4.2.1 Soil Description

At SWMU 7, subsurface soil consisted of 2 to 3 feet of fill material overlying stiff to plastic, reddish brown to olive gray clay (CL) with some iron concretions and coarse, rounded sand (Appendix B). Saturated soil was not observed above the bedrock which was encountered from 8 to 9 ft bls at SWMU 7. A tar like substance and a strong chemical odor was observed from 2 to 6 ft bls at soil boring location 960615-CO-07-SL0001.

At SWMU 8, subsurface soil consisted of 1.0 ft of asphalt and fill material overlying 2 ft of stiff, black clay with coarse rounded sand (Appendix B). The clay had some tar like substance in the pore spaces and a chemical odor. Saturated soil was not observed above the bedrock which was encountered at 4 ft bls.

At SWMU 9, subsurface soil consisted of 1.5 ft of asphalt and fill material overlying 6.5 ft of stiff to plastic, brown, gray, and reddish brown clay with coarse rounded sand (Appendix B). The clay had some tar like substance in the pore spaces and a chemical odor. Perched water was present from 2 to 4 ft bls at SWMU 9. Besides the soil in the perched water table, saturated soil was not observed above the bedrock which was encountered at 7.5 ft bls.

4.4.2.2 Chemical Characteristics

4.4.2.2.1 Volatile Organic Compounds

BTEX was detected in the soil samples collected below the sump (4 to 6 ft bls) and above the top of bedrock (6 to 8 ft bls) in soil boring 960615-CO-07-SL0001 located south of the SWMU 7 sump (Table 4-8 and Figure 3-5). Acetone, 1,1,2,2-tetrachloroethane and styrene were also detected in the south soil boring soil samples. 1,1,2,2-Tetrachloroethane, methylene chloride, and ethyl methacrylate were detected in samples collected from soil boring 960617-CO-07-SL0002 installed north of SWMU 7.

At SWMU 8, BTEX compounds and 1,1,2,2-tetrachloroethane were detected in the shallow soil boring 960617-CO-08-SL0001 installed south of the foundation (Table 4-8). Benzene, o-xylene, and acetone were detected in the sample collected below the sump (4 to 6 ft bls) in soil boring 960614-CO-09-SL0001 installed west of SWMU 9; however, VOCs were not detected above the bedrock (6 to 8 ft bls). Concentrations of VOCs detected at SWMUs 7, 8, and 9 were below residential RBCs.

4.4.2.2.2 Semivolatile Organic Compounds

At SWMU 7, SVOCs were not detected in soil boring 960617-CO-07-SL0002 installed north of SWMU 7 (Table 4-8 and Figure 3-5). Eleven PAHs, 2,4-dimethylphenol, phenol, and dibenzofuran were detected in soil boring 960615-CO-07-SL0001 installed south of the SWMU 7 sump in samples collected below the sump (4 to 6 ft bls) and above the top of bedrock (6 to 8 ft bls). Concentrations of PAHs decreased with depth. At SWMU 8, concentrations of three PAHs and four phenolic compounds were detected above the bedrock (2 to 4 ft bls) (Table 4-8). At SWMU 9, concentrations of three PAHs were detected in soil boring 960614-CO-09-SL0001

in the sample collected below the sump (4 to 6 ft bls); however, PAHs were not detected above the bedrock (6 to 8 ft bls).

Concentrations of benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene detected at SWMU 7 in the south soil boring in the sample collected below the sump exceeded residential RBCs. Concentrations of SVOCs detected at SWMUs 8 and 9 did not exceed residential RBCs.

4.4.2.2.3 Metals and Cyanide

Ten of the 13 PP metals and cyanide were detected in subsurface soil samples collected at SWMUs 7, 8, and 9 (Table 4-8). Although concentrations of arsenic detected at SWMUs 7, 8, and 9 exceeded the residential, concentrations were within the site background concentration range except for sample 960617-CO-07-SL0002 (4-6) (Table 4-8). Based on background soil sampling results, soils in the vicinity of the Sloss facility contain elevated concentrations of arsenic.

4.4.3 Conclusion

Concentrations of VOCs detected in subsurface soil samples collected at SWMUs 7, 8, and 9 were below residential RBCs. Concentrations of benzo(a)anthracene (29,000 µg/kg), benzo(a)pyrene (24,000 µg/kg), and benzo(b)fluoranthene (23,000 µg/kg) detected at SWMU 7 in the south soil boring in the sample collected below the sump exceeded residential RBCs. Concentrations of SVOCs detected at SWMUs 8 and 9 did not exceed residential RBCs. Although concentrations of arsenic (5.3 to 36 mg/kg) exceeded the residential RBC in subsurface soil samples, the concentrations detected, except for one sample, were within site background soil ranges.

Since concentrations of PAHs detected in subsurface soil exceeded residential RBCs at SWMU 7 and detected concentrations of arsenic exceeded site background soil concentrations and the residential RBC, a risk evaluation is appropriate for these SWMUs.

4.5 COAL TAR DECANTERS (SWMUS 10, 11, AND 12)

Two surficial soil samples were collected from SWMUs 10, 11, and 12 and submitted for laboratory analysis during the RFI.

4.5.1 Coal Tar Decanter for No. 3 and No. 4 Coke Batteries (SWMU 10)

Two surficial soil samples were collected at SWMU 10 and samples were submitted for laboratory analysis of VOCs, SVOCs, PP metals, barium and cyanide (Figure 3-8).

4.5.1.1 Soil Description

Surficial soil at SWMU 10 consisted of 2 feet of fill material overlying stiff to plastic, brown to gray clay (CL-CH) with some olive gray mottling and organic matter (Appendix B). Saturated soil was not observed in soil samples collected at SWMU 10. An oil like substance was present at location 960618-CO-10-SL0001 from 2 to 6 ft bls.

4.5.1.2 Chemical Characteristics

4.5.1.2.1 Volatile Organic Compounds

BETX and methylene chloride were detected in surficial soil samples collected from SWMU 10; however, concentrations detected were below residential RBCs (Table 4-9 and Figure 3-8).

4.5.1.2.2 Semivolatile Organic Compounds

Fifteen PAHs and dibenzofuran, were detected in surficial soil sample 960618-CO-10-SL0001 (2-4) installed southwest of SWMU 10 where the oil like substance was encountered (Table 4-9 and Figure 3-8). Two PAHs were detected in the surficial soil sample collected northwest of SWMU 10. Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene exceeded residential RBCs in the southwest surficial soil sample.

4.5.1.2.3 Metals

Nine of the 13 Priority Pollutant metals were detected in the surficial soil samples collected from SWMU (Table 4-9). Cyanide was not detected at SWMU 10. Although arsenic was detected above the residential RBC in all surficial soils collected at SWMU 10, arsenic concentrations were within the site background range. Based on background soil sampling results, soils in the vicinity of the Sloss facility contain elevated concentrations of arsenic.

4.5.2 Coal Tar Decanter for No. 5 Coke Battery (SWMU 11)

Two surficial soil samples were collect at SWMU 11 for laboratory analysis of VOCs, SVOCs, PP metals, barium and cyanide (Figure 3-8).

4.5.2.1 Soil Description

Surficial soil at SWMU 11 consisted of approximately 4 feet of fill material overlying plastic, gray clay (CH) (Appendix B). Saturated soil was observed in soil samples collected at SWMU 10 below 3.0 ft bls. An oil/tar like substance and a chemical odor was present from 4 to 6 ft bls at location 960614-CO-11-SL0001 and 2 to 6 ft bls at location 960614-SO-11-SL0002.

4.5.2.2 Chemical Characteristics

4.5.2.2.1 Volatile Organic Compounds

Benzene, toluene, and o-xylene were detected in the surficial soil samples collected from SWMU 11; however, concentrations detected were below residential RBCs (Table 4-9).

4.5.2.2.2 Semivolatile Organic Compounds

Fifteen PAHs and dibenzofuran were detected in surficial soil samples collected at SWMU 11 (Table 4-9). Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene exceeded residential RBCs in surficial soil sample 960614-CO-11-SL0002 (2-4) located northwest of SWMU 11 (Figure 3-8).

4.5.2.2.3 Metals and Cyanide

Nine of the thirteen Priority Pollutant metals were detected in the surficial soil samples collected from SWMU 11 (Table 4-9). Cyanide was not detected at SWMU 11. Although arsenic was detected above residential RBCs in both surficial soil samples collected at SWMU 11, concentrations detected were within the site background soil range. Based on background soil sampling results, soils in the vicinity of the Sloss facility contain elevated concentrations of arsenic.

4.5.3 Coal Tar Decanter for No. 1 and No. 2 Coke Batteries (SWMU 12)

Two surficial soil samples were collected at SWMU 12 for laboratory analysis of VOCs, SVOCs, PP metals, barium and cyanide (Figure 3-6).

4.5.3.1 Soil Description

Surficial soil at SWMU 12 consisted of stiff to plastic, brown clay (CL-CH) with light brown mottling and no odor. Saturated soil was not observed in soil samples collected at SWMU 12.

4.5.3.2 Chemical Characteristics

4.5.3.2.1 Volatile Organic Compounds

Acetone, benzene, and ethylbenzene were detected in surficial soil samples collected from SWMU 12; however, concentrations detected were below residential RBCs (Table 4-9 and Figure 3-6).

4.5.3.2.2 Semivolatile Organic Compounds

Seventeen PAHs, dibenzofuran, and 1,2,4-trichlorobenzene were detected in soil samples collected from SWMU 12 (Table 4-9 and Figure 3-6). Concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene detected in the soil samples collected at SWMU 12 were above residential RBCs.

4.5.3.2.3 Metals and Cyanide

Nine of the 13 Priority Pollutant metals and cyanide were detected in soil samples collected from SWMU 12 (Table 4-9). Arsenic exceeded the residential RBC and site background soil concentrations in all soil samples collected from SWMU 12.

4.5.4 Conclusion

Concentrations of VOCs detected in subsurface soil samples collected at SWMUs 10, 11, and 12 were below residential RBCs. At SWMU 10, benzo(a)anthracene (3,000 µg/kg), benzo(a)pyrene (2,700 µg/kg), benzo(b)fluoranthene (3,400 µg/kg), dibenzo(a,h)anthracene (400 µg/kg), and indeno(1,2,3-cd)pyrene (2,400 µg/kg) exceeded residential RBCs in the southwest surficial soil sample. At SWMU 11, benzo(a)anthracene (130,000 µg/kg), benzo(a)pyrene (86,000 µg/kg), benzo(b)fluoranthene (120,000 µg/kg), benzo(k)fluoranthene (21,000 µg/kg), chrysene (97,000 µg/kg), and indeno(1,2,3-cd)pyrene (58,000 µg/kg) exceeded residential RBCs in the northwest surficial soil sample. At SWMU 12, benzo(a)anthracene (2,000 to 4,900 µg/kg) benzo(a)pyrene (3,400 to 7,800 µg/kg), dibenzo(a,h)anthracene (1,100 to 2,000 µg/kg), benzo(b)fluoranthene (2,900 to 7,800 µg/kg), and indeno(1,2,3-cd)pyrene (2,300 to 5,500 µg/kg) exceeded residential RBCs. Although concentrations of arsenic (6.5 to 200 mg/kg) exceeded residential RBCs in subsurface soil samples at SWMUs 10 and 11, the concentrations detected were within site background soil ranges. Concentrations of arsenic detected at SWMU 12 were above residential RBCs and site background concentration ranges.

Since concentrations of PAHs detected in subsurface soil exceeded residential RBCs at SWMUs 10, 11, and 12 and detected concentrations of arsenic exceeded site background soil concentrations and residential RBCs at SWMU 12, a risk evaluation is appropriate for these SWMUs.

4.6 SPILL AREA AROUND DIESEL TANK (SWMU 6)

Surficial and subsurface soil samples from one soil boring were submitted for laboratory analysis of VOCs, SVOCs, PP metals, barium, and cyanide (Figure 3-7).

4.6.1 Soil Description

Subsurface soil at SWMU 6 consisted of approximately 1 ft of coal overlying stiff to plastic, brown to reddish brown clay (CL-CH) with some iron concretions and black to reddish brown mottling (Appendix B). The soil samples had no odor. Saturated soil were not encountered above the top of bedrock encountered at 13.75 ft bls.

4.6.2 Chemical Characteristics

4.6.2.1 Volatile Organic Compounds

Acetone, 1,1,2,2-tetrachloroethane and m- and p-xylenes were detected in subsurface soil samples collected at SWMU 6; however, concentrations were below residential RBCs (Table 4-10 and Figure 3-7).

4.6.2.2 Semivolatile Organic Compounds

Five PAHs were detected in the surficial soil sample (0 to 1 ft bls) collected at SWMU 6 (Table 4-10 and Figure 3-7). The concentration of benzo(b)fluoranthene detected in the 0 to 1 ft bls soil sample was above the residential RBC. As discussed above, the upper one foot of the soil was composed of coal. These PAHs are common constituents of coal.

4.6.2.3 Metals and Cyanide

Nine of the 13 PP metals and cyanide were detected in subsurface soil samples collected at SWMU 6 (Table 4-10). Although arsenic was detected above the residential RBC in all soil sample intervals, concentrations of arsenic detected were within site background concentrations. Based on background soil sampling results, soils in the vicinity of the Sloss facility contain elevated concentrations of arsenic.

4.6.3 Conclusion

Concentrations of VOCs detected in surficial and subsurface soil samples collected at SWMU 6 were below residential RBCs. The concentration of benzo(b)fluoranthene (6,500 µg/kg) detected in the surficial soil sample was above the residential RBC; however, ground surface to a depth of one foot was composed of coal and not soil. Although arsenic (7.8 to 15 mg/kg) was detected above the residential RBC in all soil sample intervals, concentrations of arsenic detected were within site background concentrations.

Since the concentration of benzo(b)fluoranthene detected in the surficial soil samples exceeded the residential RBCs at SWMU 6 a risk evaluation is appropriate for this SWMU.

5. BASELINE RISK ASSESSMENT

A baseline risk assessment was conducted for the Coke Manufacturing Plant following USEPA Region 4 guidance (USEPA, 1995). The purpose of a baseline risk assessment is to determine the potential risk to human health and the environment posed by chemical constituents detected at a site. The analytical data presented in Section 4.0 of this report were used to conduct the risk assessment.

5.1 DATA REDUCTION

Constituents of Potential Concern (COCs) were selected according to USEPA (1995) criteria by comparison of maximum concentrations to risk-based screening levels and comparison to background concentrations. Background data for soil were presented in Table 2-1.

Soil and process water samples were collected from eight SWMUs and two quench towers associated with the Coke Manufacturing Plant. The analytical data were reduced according to the guidelines provided by the USEPA (1989b) for use in the risk assessment as described below:

- All constituents never detected in the samples were eliminated from further analysis for that group.
- For non-detects, one-half the sample quantitation limit (SQL) was used as a surrogate concentration (rather than using zero or eliminating the data point).

The results of the statistical analyses are presented in the constituent occurrence tables for surficial and total soils (Tables 5-1 and 5-2). In this risk assessment, surficial soils included those samples at depths of up to 1 foot bls. The term "total soils" refers to all soil samples irrespective of depth. Table 5-3 presents the results of the statistical analysis for the process water. The information in the constituent occurrence tables include, for each detected constituent, the frequency of detection (ratio of the number of detections to the total number of samples in that group), the range of SQLs used to calculate surrogate concentrations for non-

detections in the statistical calculations, the range of detected values, the average detection, the arithmetic mean (using surrogate concentrations for non-detections) assuming a log-normal distribution, the 95 percent upper confidence level (UCL) on the mean, and the exposure point concentration (EPC).

5.1.1 Soil

Constituents detected in surficial soils were divided into chemical classes of PAHs, VOCs, SVOCs, and inorganics. The PAHs were divided further into carcinogenic and non-carcinogenic classes. To determine which constituents were COCs, the maximum detected concentration of all constituents in surficial soil was compared to residential screening values for soil ingestion determined at a carcinogenic risk level of 10^{-6} or a non-carcinogenic hazard quotient of 0.1 according to USEPA (1995) guidelines. Those constituents that exceeded the residential screening values were then identified as COCs. Additionally, if one compound in any chemical class (except for inorganics) exceeded the residential screening levels and was identified as a COC, all compounds in that chemical class became COCs. Table 5-4 presents the results of the selection of COCs for surficial soils.

Constituents detected in total soils were divided into chemical classes identical to surficial soils. To determine which constituents were COCs, the maximum detected concentration of all constituents in surficial and subsurface soil was compared to industrial screening values for soil ingestion determined at a carcinogenic risk level of 10^{-6} or a non-carcinogenic hazard quotient of 0.1. Those constituents that exceeded the industrial screening values were then identified as COCs. Table 5-5 presents the results of the selection of COCs for total (combined surficial and subsurface) soils.

5.1.2 Process Water

VOCs and inorganics were detected in the process water. To determine which constituents were COCs, the maximum detected concentration of all constituents in the process water was compared to tap water screening values at a carcinogenic risk level of 10^{-6} or a non-carcinogenic hazard quotient of 0.1. This provides an extremely conservative screening value as the process water is recycled for on-site industrial purposes and is not used as drinking water. Those constituents that exceeded the tap water screening value then were identified as COCs (Table 5-6).

5.2 TOXICITY ASSESSMENT

This section discusses the two general categories of toxicity values (non-carcinogenic and carcinogenic) used to calculate risk. Toxicity values for non-carcinogenic and carcinogenic effects were obtained from the USEPA's Integrated Risk Information System (IRIS) (2000) and USEPA's Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997a).

5.2.1 Non-Carcinogens

The reference dose (RfD) is an estimate of a daily exposure level that is unlikely to cause non-carcinogenic health effects. Thus, exposure levels below the RfD are unlikely to produce toxic effects in even sensitive subpopulations. Chronic RfDs are used to assess long-term exposures ranging from 7 years to a lifetime; subchronic RfDs evaluate the potential of adverse health effects associated with exposure to chemicals during a period of a few weeks to 7 years. RfDs are derived by the USEPA by dividing the no observed adverse effect levels (NOAELs) or lowest observed adverse effect levels (LOAELS) by uncertainty factors typically ranging from 10 to 10,000 depending on the suitability and quality of the available database.

RfDs that are sanctioned by the USEPA are called verified reference doses for oral exposure (RfD_os) and reference concentrations (RfCs) for inhalation exposure. Table 5-7 presents the RfDs used in this risk assessment. Target sites affected by each constituent are shown in the table for both inhalation and oral exposures. The confidence value and uncertainty factors associated with the toxicity values also are listed. The uncertainty factor represents a specific area of uncertainty inherent in the extrapolation from the available data. The confidence levels (low, medium, and high) assess the degree of confidence the USEPA has in the database used to develop the toxicity value.

Toxicity values for dermal exposure are not available (appropriate toxicity data are scarce); therefore, the oral RfDs are adjusted to an absorbed dose, using the constituent-specific oral absorption efficiency, as recommended by the USEPA (1989b). In calculating a dermal RfD from an oral RfD, the oral RfD is multiplied by the oral absorption efficiency (Table 5-9).

5.2.2 Carcinogens

Constituents are classified as known, probable, or possible human carcinogens based on the USEPA weight-of-evidence scheme in which chemicals are systematically evaluated for their ability to cause cancer in humans or laboratory animals. The USEPA classification scheme (USEPA, 1989b) contains six classes, based on the weight of available evidence, as follows:

- A Known human carcinogen;
- B1 Probable human carcinogen -- limited evidence in humans;
- B2 Probable human carcinogen -- sufficient evidence in animals and inadequate data in humans;
- C Possible human carcinogen -- limited evidence in animals;
- D Inadequate evidence to classify; and
- E Evidence of non-carcinogenicity.

Constituents in Classes A, B1, B2, and C generally are included in risk assessments as potential human carcinogens; however, Class C carcinogens may be evaluated on a case-by-case basis (USEPA, 1989b).

The USEPA currently uses the linearized multistage model for extrapolating cancer risk from high doses associated with occupational exposure or laboratory animal studies to low doses typically associated with environmental exposures. The model provides a 95 percent upperbound estimate of cancer incidence at a given dose. The slope of the extrapolated curve, called the cancer slope factor (CSF), is used to calculate the probability of cancer associated with the exposure dose.

CSFs are derived from the assumption that any dose level has a probability of causing cancer. The cumulative dose regardless of the exposure period determines the risk; therefore, separate CSFs are not derived for subchronic and chronic exposure periods. CSFs are derived for oral and inhalation exposures. The oral CSF is adjusted to evaluate dermal exposures (Table 5-9). This is done by dividing the oral CSF by the oral absorption efficiency. Table 5-8 presents the CSFs used in this report. Target sites affected by the COCs and the USEPA cancer classifications of the COCs are shown.

5.2.3 Toxic Effects Summary

Toxicity values for the COCs were presented in the previous section and are listed in Tables 5-7 through 5-9. COCs include TCP, seven carcinogenic PAHs, arsenic, chromium, copper, and lead. This section presents a brief summary of the known toxic effects of the COCs and the basis for their toxicity values.

Most of the toxicity data derived from humans comes from occupational, accidental, or intentional exposures. Epidemiological studies of human populations that are adequate to derive

toxicity values are limited to a few chemicals. In most epidemiological studies, it is difficult to determine the exposure conditions (i.e., concentrations, frequency, duration, etc.), the number of exposed individuals is small, the incidence of the effect is small, and exposure to multiple chemicals may have occurred. Therefore, data derived from laboratory animal studies frequently are used to extrapolate potential risks to humans. Although reliance on laboratory animal studies increases the uncertainty associated with risk estimates, modern toxicology is built on the premise that the toxic effects of chemical agents are similar for laboratory animals and humans. The weight of evidence increases when similar results are observed in both sexes, more than one species of lab animal, across various routes of exposure, and case reports from human exposures.

5.2.3.1 1,2,3-Trichloropropane

TCP is used as an industrial solvent, paint and varnish remover, and degreasing agent. Very little toxicity data for humans are available; however, eye and throat irritation have been reported in workers exposed for 15 minutes to concentrations of 100 parts per million (ppm) in air (Silverman et al., 1946). The chronic RfD of 0.006 milligrams per kilogram per day (mg/kg/day) was developed from a subchronic study in rats and mice (IRIS, 2000). Groups of 20 animals of each sex were administered doses of TCP in corn oil ranging from 8 to 250 mg/kg/day, 5 days/week for 60 to 120 days. Rats were the more sensitive species with 100 percent of test animals dying at the highest dose level. Effects reported at lower doses included damage to the liver and kidneys, decreased number of red blood cells, and decreased body weight gains. The LOAEL and NOAEL were 16 mg/kg/day and 8 mg/kg/day, respectively (IRIS, 2000). The NOAEL was adjusted to 5.7 mg/kg/day to account for the 5 days/week exposure and divided by an uncertainty factor of 1,000 (10 for intraspecies extrapolation, 10 for extrapolation to humans, and 10 to extrapolate from a subchronic ~~to~~ a chronic study) to derive the RfD. Although the quality of the study was rated as high, the overall confidence in the RfD is low because of the lack of chronic or reproductive studies of TCP (IRIS, 2000). The USEPA National Center for Environmental Assessment (NCEA) has recommended a provisional RfC of 0.0049 mg/m^3 for TCP (USEPA, 2000).

The National Toxicology Program (NTP, 1993) published results of a carcinogenesis study that indicated clear evidence of carcinogenic activity in both sexes of rats and mice. Rates were tested at doses of 0, 3, 10, and 30 mg/kg/day and mice were tested at 0, 6, 20, and 60 mg/kg/day. Doses were administered in corn oil via gavage. Benign and malignant tumors of the pharynx, tongue, forestomach, kidney, mammary gland, pancreas, and reproductive system were reported (NTP, 1993). Based on that study, the USEPA established an oral CSF of 7.0 $(mg/kg/day)^{-1}$ in HEAST for TCP (USEPA, 1997a). The NCEA recommends 2.0 $(mg/kg/day)^{-1}$ for the oral CSF (USEPA, 2000). An inhalation CSF has not been established due to a lack of route-specific carcinogenicity studies. No carcinogenicity studies of TCP in humans are available.

5.2.3.2 PAHs

PAHs are present throughout the environment from both natural and man-made sources. These compounds are closely related chemically and have similar toxic effects; however, not all of the PAHs are thought to be carcinogenic. Benzo(a)pyrene is the only carcinogenic PAH for which the USEPA has developed a CSF. The current recommendation from USEPA is to estimate risk for other PAHs based on structure activity relationships relative to benzo(a)pyrene. Although several epidemiological studies have linked human exposure to mixtures of PAHs containing benzo(a)pyrene to lung cancer, the studies are not sufficient to determine that benzo(a)pyrene or any other PAH is responsible (Agency for Toxic Substances and Disease Registry [ATSDR], 1997). Numerous animal studies have been conducted to investigate the carcinogenicity of benzo(a)pyrene. These include inhalation, dietary, gavage, dermal, and other studies involving guinea pigs, hamsters, rats, mice, and several primates. Tumors generally are produced at the site of administration; however, tumors at distant sites have been reported (ATSDR, 1997). The most common tumor sites include the stomach, lungs, and skin. The current benzo(a)pyrene CSF of 7.3 $(mg/kg/day)^{-1}$ is based on the geometric mean of slope factors derived from four studies (IRIS, 2000).

A system of benzo(a)pyrene toxicity equivalency factors (TEFs) has been created for the carcinogenic PAHs (USEPA, 1995). These TEFs are used to calculate equivalent benzo(a)pyrene concentrations for each of the carcinogenic PAHs so that the benzo(a)pyrene toxicity values can be used for all of the carcinogenic PAHs.

An RfD has not been derived for the carcinogenic PAHs. Reported noncarcinogenic effects of PAHs in laboratory animals include dermatitis, skin sensitization to sunlight, immunosuppression, reproductive and developmental effects, liver, kidney, and gastrointestinal tract at concentrations ranging from 10 mg/kg/day to more than 100 mg/kg/day (ATSDR, 1997). In order to estimate the potential non-carcinogenic risks, the RfD for pyrene (0.03 mg/kg/day) is used as a surrogate value to represent the potential toxicity for all of the PAHs. The USEPA NCEA recommends a provisional inhalation unit risk factor (UR_i) of 8.8×10^{-4} per microgram per cubic meter ($[\mu g/m^3]^{-1}$) for benzo(a)pyrene (USEPA, 2000)

5.2.3.3 Arsenic

Arsenic is a naturally-occurring element and may be found in soil, water, food, and air. Normal, or background, exposure from these sources is estimated at about 50 micrograms per day (µg/day), with food as the largest background source (ATSDR, 1997). Ingestion of as little as 70 milligrams (mg) to 180 mg can be fatal to humans (ATSDR, 1997). Lower levels of arsenic exposure cause gastrointestinal distress (nausea, vomiting, and diarrhea), loss of appetite, hair and weight loss, and irritation of mucous membranes (ATSDR, 1997). Long-term exposure to arsenic is known to cause damage to the nervous system, blood vessels, and skin. Arsenic is a Class A carcinogen (known human carcinogen) (IRIS, 2000). Cancer of the skin, lungs, liver, kidney, and bladder have been associated with human exposures to arsenic (IRIS, 2000). Arsenic has not been shown to be carcinogenic in laboratory animals. An oral RfD, oral CSF, and inhalation unit risk factor have been developed by USEPA (IRIS, 2000). All of the toxicity values were based on human epidemiological studies.

The oral RfD (0.0003 mg/kg/day) was developed from a study of Taiwanese populations exposed to naturally occurring arsenic in water-supply wells (IRIS, 2000). The mean concentration of arsenic in the low-dose group was 9 micrograms per liter (μg/L) and was identified as the NOAEL. The mean arsenic concentration in the LOAEL group was 170 μg/L. The most sensitive effects included darkening of the skin, thickening of the skin of the palms and soles, and the appearance of "corns" or "warts" on the hands, feet, and body. In extreme cases, blood vessel damage may lead to gangrene of the feet (called blackfoot disease). Based on an assumed water consumption rate of 4.5 liters per day (L/day), background exposure to 0.002 mg of arsenic per day in food, and an average body weight of 55 kilograms (kg), the arsenic concentration in the NOAEL group was converted to 0.0008 mg/kg/day and divided by an uncertainty factor of 3 to derive the RfD of 0.0003 mg/kg/day (IRIS, 2000). The uncertainty factor was selected to account for the lack of data on reproductive effects and to account for individuals who may be more sensitive than those included in the study. Overall, the USEPA has assigned a medium confidence level to the RfD (IRIS, 2000). Although more than 40,000 people were included in the study, exposures were not well characterized and other contaminants were present.

The CSF for arsenic (1.5 $[mg/kg/day]^{-1}$) was based on the same epidemiological studies as is the RfD, and skin cancer was the tumor type evaluated in the derivation. The inhalation UR_i (4.3×10^{-3} $[\mu g/m^3]^{-1}$) was derived from epidemiological studies of smelter workers that showed a statistically increased incidence of lung cancer in these workers (IRIS, 2000).

5.2.3.4 Chromium

The toxicity of chromium depends on the valence state of the compound. Hexavalent chromium is more toxic than trivalent chromium, which is an essential nutrient for fat and sugar metabolism. Ingestion of large amounts of hexavalent chromium salts can damage the digestive tract, kidneys, and liver. Occupational exposure to hexavalent chromium has been associated with lung cancer, skin ulceration, allergic dermatitis, and anemia. Laboratory studies also indicate that hexavalent chromium is mutagenic. Trivalent chromium does not cause these effects. As a conservative measure, all chromium is assumed to be hexavalent in this risk assessment. Toxicity values discussed below apply to hexavalent chromium.

The RfD for hexavalent chromium (0.003 mg/kg/day) was derived from a 1-year drinking study in rats (IRIS, 2000). The NOAEL was 2.5 mg/kg/day (derived from a concentration of 25 milligrams per liter (mg/L) of potassium chromate in drinking water). No concentrations higher than 25 mg/L were given; therefore, a LOAEL was not identified. An uncertainty factor of 300 and an additional modifying factor of 3 were used to derive the RfD of 0.003 mg/kg/day (IRIS, 2000). Factors of 10 were used to compensate for interhuman and interspecies variability in sensitivity and a factor of 3 was used to compensate for less than lifetime exposure. The modifying factor of 3 represents concerns regarding this study's reliability raised by another study (IRIS, 2000). Confidence in the RfD was rated as low because of the small number of animals used in the study, small number of parameters measured, failure to identify a LOAEL, poor quality of supporting studies, and insufficient data for teratogenic or reproductive endpoints (IRIS, 2000).

Inhalation of hexavalent chromium particles may produce toxic effects, and an RfC of 0.0001 mg/m^3 was established based on two suchronic rat studies (IRIS, 2000). Enzymatic changes were seen in the lung tissues following exposure to hexavalent chromium particulates. Other effects included reduced body weight, increased white blood cell counts, and other hematological changes. An uncertainty factor of 300 was applied to the RfC, and confidence is

rated as medium in both the study and RfC. Confidence in the chosen study is medium due to uncertainties regarding upper respiratory, reproductive, and renal effects resulting from the exposures (IRIS, 2000).

Inhalation of hexavalent chromium compounds may cause lung cancer; however, ingested hexavalent chromium is not considered to be carcinogenic. Hence, the compound is classified as Group A (known human carcinogen) by the inhalation route of exposure; and as Group D (not able to be classified) by the oral route of exposure (IRIS, 2000). The UR_i of 1.2×10^{-2} $(\mu g/m^3)^{-1}$ was derived from occupational epidemiological studies. Dose-response relationships for chromium exposure and lung cancer have been consistent across several studies (IRIS, 2000).

5.2.3.5 Copper

Copper is an essential nutrient and is not toxic under most circumstances; however, exposure to large doses may cause gastrointestinal distress, liver damage, and kidney damage. Since copper is an essential nutrient, deficiency results in anemia. In humans, a single exposure to water containing 30 mg/L of copper caused vomiting, diarrhea, and stomach cramps (ATSDR, 1997). Drinking water containing 3 mg/L has caused liver damage in infants after a 9-month period. Breathing high concentrations of copper dust over a long period can cause nose, mouth, and eye irritation, headaches, nausea, and dizziness (ATSDR, 1997).

No toxicity values are available on IRIS for copper. An RfD, expressed as a concentration in drinking water, of 1.3 mg/L is listed in HEAST (USEPA, 1997a). This corresponds to an RfD of 0.037 mg/kg/day (assuming ingestion of 2 L/day and an average body weight of 70 kg). The RfD was based on a LOAEL of 5.3 milligrams per day (mg/day) from human clinical case studies. Gastrointestinal irritation was reported at the LOAEL. An uncertainty factor of 2 was applied to derive the RfD. An RfC for inhalation exposure to copper

has not been calculated. The USEPA says that there is insufficient information to classify copper as a carcinogen, and thus lists it as a Class D carcinogen (IRIS, 2000).

5.2.3.6 Lead

Lead is known to cause many toxic effects depending on the exposure circumstances. The principal toxic effects include damage to the nervous system, blood forming system, kidneys, and reproductive system (ATSDR, 1997). The USEPA considers lead to be Class B2 (probable human carcinogen). The fetus and young children are particularly susceptible to lead because of greater absorption and sensitivity of the developing nervous system. Lead exposure can lead to decreased mental ability, premature birth, and reduced growth rates in children. For adults, an increase in blood pressure is one of the most sensitive effects, but has been observed only in males (ATSDR, 1997). In adults, lead exposure can affect neurological functions such as possible decrease of reaction time and possibly affect the memory. Lead exposure may also cause weakness in the fingers, wrists, or ankles. Large exposures to lead can severely damage the brain and kidneys in adults and children (ATSDR, 1997). Some lead compounds have caused kidney cancer in rats and mice; however, data are insufficient to determine if lead causes cancer in humans (Class B2) (IRIS, 2000).

Risk assessment for lead does not rely on the standard toxicity value approach; instead, the USEPA has developed various models, which are used to predict levels of lead in the blood following various exposures. These models were designed to protect the fetus and young children as the most sensitive receptors. Current data indicate that children may be affected by lead at blood lead levels of 10 micrograms per deciliter of blood (µg/dL) or lower. Total body burdens of lead in the average adult in the USA is reported to be approximately between 100 to 300 mg (Hazardous Substances Databank [HSDB], 2000). Ninety-five percent of the total body burden is stored in bone (ATSDR, 1997). Severe brain damage, anemia, and kidney damage can occur when blood lead levels exceed 80 µg/dL in children or 80 to 100 µg/dL in adults (Goyer, 1991). Damage to the peripheral nervous system can occur at concentrations of 40 µg/dL, and

concentrations greater than 30 µg/dL may permanently lower intelligence quotient (IQ) scores of children (ATSDR, 1997). The nervous system of the developing fetus may be damaged at concentrations in the 10 to 15 µg/dL range (ATSDR, 1997).

5.3 EXPOSURE ASSESSMENT

Exposure assessments typically rely on standard default assumptions developed by USEPA or state regulatory agencies because actual exposure data are practically never available and are difficult to obtain. Because of this fact, there is a great deal of uncertainty associated with exposure estimates. In order to compensate for this uncertainty, reasonable maximum exposure (RME) assumptions are used. The RME is defined as the maximum exposure that is reasonably expected to occur at the site; therefore, actual exposures are likely to be less than the RME. Standard default exposure assumptions have been developed for residential and industrial exposure scenarios. However, site-specific data and professional judgment also are important components of the exposure assessment.

5.3.1 Exposure Setting

The site is an active coking facility and site use is not expected to change for the foreseeable future. Activity on the site is limited to site workers, and access is controlled by a locked gate and 24-hour guard. The surrounding property is mixed industrial/residential. Groundwater is not used as a water supply on the site or in the site vicinity. Surface water on the site is limited to a drainage ditch along the eastern property boundary.

5.3.2 Conceptual Site Exposure Model

The conceptual site exposure model provides the framework of the risk assessment. It characterizes the exposure setting, identifies sources and transport pathways for the COCs, identifies potential receptors for current and future land uses, and identifies the primary exposure

routes (Figure 5-1). Receptors may include any living organism (human, plant, or animal). Exposure routes include the basic pathways through which a COC may be absorbed (inhalation, oral ingestion, or dermal contact).

An exposure pathway evaluation is a key component of a risk-based analysis. Exposure can occur only when the potential exists for a receptor to directly contact released constituents or if there is a mechanism for released constituents to be transported to a receptor. Each component (released constituents, mechanism of transport, point of contact, and presence of a receptor) must be present for a complete exposure pathway. The physical and chemical parameters of a constituent influence its ability to move between and within a medium, which impacts the exposure potential. The constituent characteristics that are used in this assessment are presented in Table 5-10.

This report focuses on the SWMUs (1 to 3, 5, 6, and 7 to 12) associated with the Coke Manufacturing Plant that is located at the southwest portion of the Sloss facility. The plant currently manufactures foundry and furnace coke through the process of carbonization. Access is controlled by a fence and gate, which is manned by security guards 24 hours per day. Groundwater sampling was not conducted as part of the Coke Manufacturing Plant investigation.

The site is currently used as an industrial facility. Site workers, including construction or excavation workers, may be exposed to COCs in surficial soils, subsurface soils, ambient air, and process water. Incidental ingestion, dermal contact, and inhalation of dust and vapors are the exposure routes. Off-site transport of the COCs is expected to be minimal compared with on-site concentrations; therefore, on-site workers represent the receptors with the greatest exposure potential.

5.3.2.1 Release Sources and Release Mechanisms

The release sources and release mechanisms can be divided into two groups: primary and secondary. Primary release sources are those sources that initially release the COC. Secondary release sources are those sources that were impacted by the primary source and can cause an additional release of the COC. Potential release sources include the SWMUs identified at the Coke Manufacturing Plant (the quench towers, aboveground tanks, and sumps and basins).

The quench towers are a potential source of release to the air and surrounding soil. Particulates and mists that contain the COCs from this operation are released into the atmosphere where they then have the potential of settling to the surficial soil or may be transported off-site.

Aboveground tanks are a source of releases caused by leaks and spills. Because these tanks are aboveground, the COCs that are released will be concentrated in the surficial soil. Surficial soil usually is defined as the soil between land surface and 1 ft bls. Once in the surficial soil, the COC may either migrate into the subsurface soil and subsequently leach into the groundwater or be released via vapors and dust into the atmosphere.

Sumps and basins can be aboveground or underground. If the sump or basin is aboveground, the exposure route discussed in the preceding paragraph applies. However, if the sump or basin is underground, the COCs released by leaks and spills will be released directly into the subsurface soil instead of the surficial soil.

5.3.2.2 Exposure Points, Exposure Routes, and Receptors

Exposure points are the specific locations where a receptor may contact constituents in soil, groundwater, or other environmental media. Impacted surficial and subsurface soil at the Coke Manufacturing Plant are the exposure points. Groundwater was not sampled as part of the Coke Plant RFI. There are no water-supply wells within the vicinity of the site. The residential

area located next to the facility is on a municipal water supply. Groundwater will be investigated during Phase II of the Coke Plant RFI. A risk assessment will be prepared for groundwater after the Coke Plant groundwater assessment has been completed.

It is anticipated that on-site exposure routes under current and future conditions will be limited to site workers. Exposure routes examined include incidental ingestion, dermal contact, and inhalation of dusts and vapors. One of the SWMUs has been excavated and covered with clean fill or pavement. Contact with subsurface soils in these areas would occur only if future construction projects were conducted in these areas.

Process water from the quenching towers is recycled and stored on-site in open sumps. Although site worker contact with the process water is unlikely, it is possible that maintenance activities may become necessary. It is expected that any exposure to the process water will be minimal.

Off-site residents may be exposed to the constituents via inhalation. Due to the distance to the nearest residence and the expected low releases to air, off-site residential exposure is expected to be minimal compared to potential on-site worker exposure. Therefore, off-site resident inhalation is not considered an exposure pathway of concern for the Coke Manufacturing Plant. Birds and small terrestrial animals have the potential of being exposed to the COCs in soil via ingestion; however, the industrial nature of the site is a limiting factor for ecological receptors.

5.3.3 Exposure Assumptions

Standard exposure assumptions (USEPA, 1995) for industrial workers were used in this risk assessment for the Sloss Industries Corporation, and the values are summarized in Table 5-11. No specific guidance has been developed regarding exposure frequency and exposure

duration for an excavation worker. Therefore, professional judgment was used. The excavation worker exposure scenario is based on a construction project that lasts 3 months. Work is conducted 8 hours per day, 5 days per week. Excavation workers are assumed to come into contact with impacted soils at depths of 0 to 15 ft bls.

Site workers are assumed to come in contact with impacted surficial soil (0 to 1 ft bls) 8 hours per day, 250 days per year, over a 25-year period. Actual exposures under current conditions are expected to be much less than assumed in this risk assessment because workers do not spend 8 hours per day at any of the SWMUs. This risk assessment examines potential exposures to a maintenance worker that may spend some time at each SWMU over the course of a week. Therefore, all surficial soil data are used to evaluate site worker exposure.

Site workers are assumed to come in contact with the process water for 1 hour per day, 12 days per year, over a 25-year period for maintenance purposes. Actual exposures to the process water are expected to be significantly less than this assumed risk. In addition, any actual site-worker exposure would most likely involve protective gear to reduce exposure to the process water.

Presently, access to the site is strictly controlled, and it is not possible that trespassers could enter the site. However, it was conservatively assumed that, in the future, this condition may change, and unauthorized persons could occasionally access the site. This hypothetical trespasser was assumed to be an older child, ranging in age from 7 to 16 years. The exposure assumptions for this hypothetical future receptor are presented in Table 5-11. Since this is not a current exposure scenario, professional judgment had to be used to estimate the frequency with which the receptor would access the site. Hence, the trespasser was assumed to come in contact with impacted soil 24 days per year over a 10-year period.

The exposure point concentrations for surficial soil, total soil, and process water, based on lognormal data distribution, are presented in Tables 5-1 (surficial soil), 5-2 (total soil, and 5-3 (process water), respectively.

5.4 RISK CHARACTERIZATION

Risk characterization summarizes and combines information from the toxicity assessment and exposure assessment to derive quantitative or qualitative risk estimates. Risk estimates for the Coke Manufacturing Plant are discussed in the following section.

5.4.1 Non-Carcinogens

The quantitative estimate for the risk of non-carcinogenic effects is called a hazard quotient (HQ). The HQ is the ratio of the estimated average daily exposure dose and the RfD. An HQ greater than 1 only indicates that the estimated exposure exceeds the RfD. It does not provide the probability of an adverse effect. Although an HQ greater than 1 indicates that the estimated exposure dose for that constituent exceeds the RfD, it does not necessarily imply that adverse health effects will occur. It is important to remember that all RfDs, and consequently HQs, are not equivalent in the degree of hazard since the severity of toxic effects is highly variable. The basis for the RfD and the confidence level should be considered in risk management decisions. The HQs are summed to derive the hazard index (HI). Current regulatory methodology (USEPA, 1989b) advises summing HIs across exposure routes for all media at the site to derive a "Total Site Hazard Index." If the total HI exceeds 1, COCs may be grouped according to critical toxic effects, and HIs may be calculated separately for each effect (USEPA, 1989b).

5.4.2 Carcinogens

Quantitative estimates for carcinogenic effects are obtained by calculating the excess lifetime cancer risk (ELCR). Estimated average daily doses, or intakes, for each constituent are averaged over the expected lifetime of 70 years. The ELCR, equal to the product of the exposure dose and CSF, is estimated for each known, probable, or possible carcinogenic COC in each medium. The ELCR values provided in this report are an indication of the increased risk, above that applying to the general population, which may result from the exposure scenarios described in the Exposure Assessment section (Section 5.3). The risk estimate is considered to be an upperbound estimate; therefore, it is likely that the true risk is less than that predicted by the model. Current regulatory methodology assumes that ELCRs can be summed across routes of exposure and COCs to derive a "Total Site Risk" (USEPA, 1989b). The USEPA has a defined a target ELCR range of 1×10^{-6} to 1×10^{-4} (USEPA, 1995); risk levels within this range generally do not require remediation.

5.4.3 RME Risk Estimates

The equations used to assess worker and trespasser risks for exposure to soil are provided in Table 5-12. The table also provides model parameter values and a sample calculation. The EPCs are provided in Tables 5-1 (surficial soil) and 5-2 (total soil), constituent-specific parameters are provided in Tables 5-7 through 5-10, and the receptor-specific parameters are provided in Table 5-11.

Site worker exposure to surficial soil was calculated for current and hypothetical future conditions. Surficial soil data were used to evaluate current conditions, and total soil (combined surficial and subsurface) data were used to evaluate future conditions. It was assumed that future construction activities could result in redistributing subsurface soil to the surface. The total HIs for surficial soil and total soil were 0.4 and 0.03, respectively; the total ELCR for surficial soil

was 7×10^{-5} and for total soil was 2×10^{-5} (Tables 5-13 and 5-14, respectively). The HIs are well below the target value of 1, and the ELCRs are within the target risk range of 10^{-6} to 10^{-4}.

Excavation worker exposure to surficial and subsurface soil incorporated all soil and reflects current or future conditions. The total HI for the excavation worker exposure was 0.3 (below the target value), and the total ELCR was 1×10^{-6} (equal to the lower end of the target range for cancer risk) (Table 5-15).

Teenage trespasser risks from exposure to surficial soil and total soil were calculated for hypothetical future conditions. Total soil data were used to evaluate potential future conditions. The total HI for surficial soil exposure was 0.06, and the total ELCR for surficial soil was 4×10^{-6} (Table 5-16). The total HI for teenage trespasser exposure to total soil was 0.01, and the total ELCR was 2×10^{-6} (Table 5-17). The HIs are below the target value, and the ELCRs are within the target range for cancer risk.

The equations used to assess site worker exposure to process water are provided in Table 5-18. The EPC is presented in Table 5-3, the constituent-specific parameters are presented in Tables 5-7 through 5-10, and the receptor-specific exposure parameters are provided in Table 5-11. The potential risks were calculated assuming the forearms and hands would be exposed. Such an exposure scenario is probably unlikely but was used as a conservative measure. The total HI for site worker exposure to the process water was 0.0003, and the total ELCR was 3×10^{-8} (Table 5-19). These values are well below the target risk values.

5.4.4 Total Site Risk Summary

ELCRs were within the target cancer risk range of 10^{-6} to 10^{-4} for site-worker exposure to surficial and total soils, trespasser exposure to surficial and total soils, and the excavation worker scenario. The highest risks are due to benzo(a)pyrene and arsenic. None of the ELCRs for the

individual COCs for the excavation worker exceeded 1×10^{-6}; therefore, remedial goal options (RGOs) were developed only for the site worker and trespasser scenarios in the next section.

5.5 RISK-BASED REMEDIAL GOAL OPTIONS

5.5.1 Lead Assessment

Lead does not have an RfD or CSF because risks from lead exposure are better evaluated by predicting the associated blood lead level. The approach used here relates intake of lead from soil to blood lead concentrations in women of child-bearing age (USEPA, 1996a). Because the fetus and young children are much more susceptible to lead toxicity than are adults, an RGO is developed which protects the fetus as described below.

The USEPA (1996a) model assumes that the increase in blood lead from exposure to soil lead is linear. A linear biokinetic slope factor was developed based on available data relating fetal blood lead levels to maternal blood lead levels and soil exposure. In the guidance, USEPA (1996a) states that the basis for the RGO is the assumption that, "fetuses and neonates can be adversely affected by elevated maternal blood lead concentrations, and that risk to the fetus can be estimated from the probability distribution of fetal blood lead concentrations." The baseline maternal blood lead concentrations were estimated based on the background blood lead level in the general population, which ranges from about 1.7 to 2.2 µg/dL. The highest acceptable fetal blood lead level was set at be 10 µg/dL, the recommended concentration from the USEPA and the Centers for Disease Control (CDC). From the equations shown in Table 5-20, an RGO for lead of 1,350 mg/kg was calculated.

5.5.2 Cancer Risk-Based Remedial Goal Options

Risk-based RGOs are provided in this section for carcinogenic risks. RGOs for non-carcinogenic risks are unnecessary because all of the HQs and HIs were below 1. RGOs are

presented at target risk levels corresponding to 10^{-4}, 10^{-5}, and 10^{-6} according to USEPA (1995) guidelines. The RGOs were calculated by multiplying the relevant EPC by the ratio of the target risk and the calculated risk.

RGOs for surficial soil are presented in Table 5-21 for the COCs in each of the surficial soil scenarios (site worker and trespasser). RGOs for site worker and trespasser exposure to COCs in total soil are presented in Table 5-22. A comparison of SWMU-specific COC concentrations (the maximum detected concentration within each SWMU) to the RGOs is shown in Table 5-23. The maximum benzo(a)pyrene concentration at SWMU 11 exceeded the RGO at a 10^{-4} risk level. Benzo(a)pyrene and arsenic concentrations exceeded the RGO for a risk of 10^{-6} in all SWMUs. Based on USEPA (1995) guidance, samples of naturally-occurring inorganics must exceed twice the background level to be a COC. The background concentration of arsenic in surficial soil was 11 mg/kg, and that in total soil was 8.8 mg/kg. Six SWMUs (5, 6, 7, 8, 9, 10, and 11) and Quench Tower B had concentrations of arsenic less than twice the background concentration, and the maximum arsenic concentration for Quench Tower A (24 mg/kg) exceeded twice the background concentration (22 mg/kg) by only a small amount. SWMU 12 had a concentration of arsenic (220 mg/kg) significantly higher than the background concentration.

5.6 UNCERTAINTIES

5.6.1 Sources of Uncertainty

The risk estimates presented here are conservative estimates of the risks associated with exposure to constituents detected in soil at the site. In general, conservative assumptions were made in the risk assessment process to bias the risk assessment toward protectiveness. However, uncertainty is inherent in the risk assessment process, and a discussion of these uncertainties is presented in this section. Each of the three basic building blocks for risk assessment (monitoring data, exposure scenarios, and toxicity values) contribute uncertainties.

Uncertainty always exists in using a finite set of monitoring data to represent site conditions. Because of this uncertainty, the UCL or maximum detected concentration was used to represent the EPC for each constituent in each medium. This conservative approach should bias the risk estimates to overestimate actual risks that might be associated with the site. In addition, it was assumed that the constituent concentrations remain constant throughout the relevant exposure periods. This assumption can produce uncertainties because natural attenuation processes should tend to decrease the concentrations over time. This conservative assumption is expected to generate highly protective (elevated) risk estimates.

Environmental sampling itself introduces uncertainty. This source of uncertainty can be reduced through a well designed sampling plan, use of appropriate sampling techniques, and implementation of laboratory data validation and quality assurance/quality control (QA/QC). The data used in this report meet QA/QC requirements and are appropriate for use in a risk assessment. Although only a few samples were collected at each SWMU, the samples were collected in areas near the potential release sources and generally should reflect the highest concentrations.

Exposure scenarios also contribute uncertainty to the risk assessment. Exposures were calculated based on the assumption that the current conditions would remain stable (i.e., no attenuation) throughout the exposure period. This assumption can produce uncertainties because natural attenuation processes should tend to reduce constituent concentrations over time. Exposure scenarios were developed based on site-specific information, USEPA exposure guidance documents, and professional judgment. Although uncertainty is inherent in the exposure assessment, the exposure assumptions also were chosen to err on the side of conservatism.

The toxicity values and other toxicological information (i.e., health effects) used in this report are associated with significant uncertainty. Many toxicity values are developed using results of studies in which laboratory animals are exposed to high doses. Although species differences in absorption, distribution, metabolism, excretion, and target organ sensitivity are well documented, available data are not sufficient to allow compensation for these differences. Most laboratory studies strictly control as many factors as possible, yet the human population is genetically diverse and affected by a variety of diets, occupations, pharmaceuticals, and other factors. When human epidemiological data are available, a different set of uncertainties is present. For instance, exposure dose is seldom well characterized in epidemiological studies.

Recent research on the mechanisms of carcinogenesis suggests that USEPA's use of the linearized multistage model may overestimate the cancer risks associated with exposure to low doses of chemicals. At higher doses, many chemicals cause large-scale cell alteration, which stimulates replacement by cellular division. Dividing cells are more subject to mutations than quiescent or non-dividing cells; thus, there is an increased potential for tumor formation. It is possible that administration of these same chemicals at lower doses would not increase cell division and thus would not increase mutations. This would suggest that the current methodology may overestimate cancer risk for constituents that are not direct acting mutagens, particularly given the low doses found at the site.

Toxicity values were not available from the USEPA for all of the COCs in media at the site. The USEPA is in the process of developing inhalation toxicity values; however, they currently are not available for most constituents. Surrogate compounds were selected to represent the toxicity values for some constituents lacking values if an appropriate surrogate was available. In the absence of subchronic RfDs, chronic RfDs were used.

5.6.2 Monte Carlo Analysis

Monte Carlo Analysis is one method used to approach the uncertainty involved in the point-estimate or deterministic risk assessment. The Monte Carlo or probabilistic method of risk assessment was used in this report to calculate risks for the site worker exposure to surficial soil. This scenario was selected for the Monte Carlo Analysis because the total cancer risk from the deterministic calculations (7×10^{-5}) is the highest among the scenarios evaluated for this site. Only the cancer risks are included in the Monte Carlo Analysis since the deterministic non-cancer risks are acceptable. The following sections provide a brief description of Monte Carlo Analysis and of the exposure parameters used in the calculations.

Monte Carlo simulation is a tool that was developed by physicists over 50 years ago and has long been used by scientists and engineers in many fields. Application of Monte Carlo simulation produces a probability distribution for a modeled parameter based on the probability or uncertainty distributions for the input variables. To run a Monte Carlo simulation, an appropriate probability density function (PDF) must be defined for each selected input variable (termed the random variables) for the model. A random number generator is used to select a value for each random variable using the input PDF information. Using the selected combination of values for the random variables, a single forecast value is calculated. This process of selecting a set of random variable values and calculating the forecast value is repeated for many iterations (usually 3,000 or more). The frequency distribution for the calculated forecast values represents the probability distribution for the modeled forecast value. A total of 7,000 iterations was used in the Monte Carlo simulation for this site.

In the context of risk assessment, the forecast value of interest is the potential cancer or non-cancer risk (ELCR or HQ, respectively) presented by hypothetical exposure scenarios at a particular site. The input random variables are the concentration data and the exposure parameters used to model the potential exposure conditions. In the derivation of a RME point-

estimate of the risk (as is usually presented in a risk assessment), the input values for the exposure parameters are selected such that the point-estimate is intended to represent the 95 percent UCL for the risk (USEPA, 1989b). Monte Carlo simulation is a valuable tool for obtaining a risk probability distribution that can be used to determine appropriate confidence limits for the risk and to indicate the uncertainty associated with the modeled risk values.

5.6.2.1 Input Random Variable Probability Distributions

This section presents the data distributions defined for each of the random variables in the Monte Carlo simulation. The relevant exposure scenario for the site worker is exposure to surficial soil. The soil exposure model considers the oral, dermal, and inhalation pathways. Table 5-24 summarizes the input PDFs for the selected random variables. The following paragraphs discuss the source of each input PDF.

5.6.2.1.1 Averaging Period and Exposure Period

In the Monte Carlo calculation of cancer risk (ELCR), the averaging period (AP) was not treated as a random variable; the value was held constant at 70 years. The AP for cancer effects was not considered a random variable since the derivation of the CSFs is based upon a 70-year lifetime. Although the AP is constant, the exposure period (EP) may vary and was defined as a random variable for the Monte Carlo analysis.

The distribution for EP in an occupational setting was obtained from "Distributions of Total Job Tenure for Men and Women in Selected Industries and Occupations the United States, February 1996" (Burmaster, 2000). The data for men aged 16 years and greater, occupied in the manufacturing industry for "chemical and allied products" were used, as follows:

Minimum = 0 Maximum = 50 years (assumed)

10 percent probability less than or equal to 0.66 year;

20 percent probability less than or equal to 1.45 years;
30 percent probability less than or equal to 2.43 years;
40 percent probability less than or equal to 3.71 years;
50 percent probability less than or equal to 5.46 years;
60 percent probability less than or equal to 8.15 years;
70 percent probability less than or equal to 13.14 years;
80 percent probability less than or equal to 23.81 year;
90 percent probability less than or equal to 31.31 years;
95 percent probability less than or equal to 34.49 years;
97.5 percent probability less than or equal to 36.56 years; and
99 percent probability less than or equal to 38.54 years.

5.6.2.1.2 Body Weight

The adult body weight (BW) PDF combines adult male and female data presented in the USEPA Exposure Factors Handbook (USEPA, 1997b) into a cumulative distribution with the following parameters (AIHC, 1994):

Minimum = 44 kg Maximum = 107 kg
5 percent probability less than or equal to 52.3 kg;
15 percent probability less than or equal to 57.6 kg;
50 percent probability less than or equal to 68.7 kg;
85 percent probability less than or equal to 84.4 kg; and
95 percent probability less than or equal to 97 kg.

The BW and skin surface area (SSA) variables were correlated with one another using a correlation coefficient of 0.85 (selected based on professional judgment). This large positive correlation coefficient is intended to account for the fact that individuals with high BW values

are expected to also have high SSA values, while low SSA is expected to correspond with low BW.

5.6.2.1.3 Exposure Frequency

The exposure frequency (EF) for the site worker was based on the PDF cited for residential exposure (normal distribution with mean of 250 days/year and standard deviation [SD] of 70 days/year, truncated at 365 days/year [Chrostowski et al., 1991]). This residential PDF was multiplied by a factor of 5/7 (based on 5 workdays per 7-day week), resulting in a normal distribution with mean of 180 days/year, SD of 50 days/year, and maximum of 365 days/year.

5.6.2.1.4 Exposure Point Concentration

The constituent EPCs were defined based on the analytical data presented in Section 5.1.1. No PDFs were defined for the EPCs; rather, the software was set to randomly select one of the actual measured or modeled concentration values with each iteration of the Monte Carlo simulation ("bootstrap" technique). The selection probability for each measured or modeled concentration value was determined by the frequency with which that value appeared in the dataset.

5.6.2.1.5 Exposure Time

Based on professional judgment, the daily exposure time PDF for the site worker was input as a triangular distribution, ranging from 0 to 10 hours/day, with 8 hours/day as the most likely value.

5.6.2.1.6 Fraction of Vegetative Cover

The fraction of vegetative cover (G) in the surficial soil exposure scenario was defined as triangular, ranging from 0 to 1, with a most likely value of 0.5. This PDF was selected based on professional judgment.

5.6.2.1.7 Skin Surface Area

The exposed SSA PDF for the Monte Carlo simulation was derived based upon data presented in the USEPA *Exposure Factors Handbook* (USEPA, 1997b). This document presents the SSA values for parts of the body for adult men and women. The SSA percentile data for the head, hands, and forearms for men and women were used in a preliminary Monte Carlo simulation to derive an overall SSA distribution for the risk calculations. The resulting SSA PDF was approximately normal, with mean 2,993 square centimeters (cm^2) and SD 111 cm^2. The minimum and maximum SSA values were set at 2,041 cm^2 and 4,200 cm^2, respectively (USEPA, 1997b). As stated previously, the BW and SSA variables were correlated with one another using a correlation coefficient of 0.85 (selected based on professional judgment).

5.6.2.1.8 Soil Adherence Rate

The PDF for soil adherence rate was derived from data presented in the USEPA (1997b) *Exposure Factors Handbook* for the hypothetically exposed body parts of a representative indoor worker (Tae Kwon Do instructor, 0.0063 mg/cm^2 for the hands and 0.0019 mg/cm^2 for the arms; greenhouse worker, 0.0050 mg/cm^2 for the head [data not available for the Tae Kwon Do instructor]). These data were used with the SSA distribution data for the hands, forearms, and head (USEPA, 1997b) to derive the PDF for the SAR: lognormal distribution, with mean of 0.0064 mg/cm^2/day and SD of 0.0055 mg/cm^2/day.

5.6.2.1.9 Soil Ingestion Rate

The site worker soil ingestion rate was derived from data for adult soil ingestion. Based on the default soil ingestion rate point estimate value of 100 mg/day for adults vs. the default point estimate value of 50 mg/day for a site worker (USEPA, 1995; 1991b), the cumulative probability data reported in the *Exposure Factors Sourcebook* (AIHC, 1994) was reduced by a factor of 1/2:

Minimum = 0 Maximum = 108 mg/day
67 percent probability less than or equal to 8.5 mg/day; and
83 percent probability less than or equal to 74 mg/day.

5.6.2.2 Monte Carlo Results

A Monte Carlo simulation of potential cancer risks (ELCR) was run using the input random variable PDFs described in the previous section and presented in Table 5-24. The forecast probability density curve for total cancer risk (ELCR) is shown in Table 5-25. The median (50th percentile), mean, and 95th percentile for the ELCR forecast probability density curve are presented:

median	1E-07
mean	2E-06
95th percentile	7E-06

These ELCR values all lie below the level of cancer risk 1×10^{-4} that was calculated in the deterministic risk assessment. Typically, the median value is used to represent average exposure conditions while the 95th percentile is used to represent RME conditions. Based on these results, the site does not pose unacceptable cancer risk under the assumed exposure conditions.

5.7 ECOLOGICAL RISK ASSESSMENT

The objectives of the ecological risk assessment are to: (1) evaluate existing data to determine actual and/or potential site-related ecological effects, and (2) determine whether additional ecological field data collection and evaluation are warranted based on the results of the first objective.

The standard paradigm for predictive ecological risk assessment (ERA), as presented in the USEPA Supplemental Guidance to Risk Assessment Guidance for Superfund (RAGS) (USEPA, 1995), was adapted to the ecological assessment of the site. A preliminary risk evaluation (PRE) is the initial ecological risk screening assessment at a hazardous waste site. The PRE consists of five steps:

- ecological screening value comparison,
- preliminary problem foundation,
- preliminary ecological effects evaluation,
- preliminary exposure estimate, and
- preliminary risk assessment.

An ERA should be conducted if results of the PRE indicate the likelihood of environmental impacts.

The first step of the PRE is ecological screening value comparison, which compares site-specific analytical data with USEPA Region 4 ecological screening values. The second step is preliminary problem formulation that identifies categories of potential ecological receptors that may exist at the site, identifies constituents that may pose unacceptable risks to those receptors, and determines constituent fate/transport and toxicity mechanisms. The third step is preliminary ecological effects evaluation. Preliminary exposure estimate is the fourth step followed by preliminary risk calculation as the last step. According to this guidance, the last four steps are

conducted only if comparisons of site analytical data with USEPA Region 4 ecological screening values indicate a need for further ecological evaluation.

An investigation of the Coke Manufacturing Plant was conducted by Geraghty & Miller in June 1996. Soil, mainly subsurface, and process water samples were taken during the RFI. Data from these samples are summarized in Tables 5-1 through 5-3. There are no surface-water bodies on or in the vicinity of the Coke Manufacturing Plant. The polishing pond, Five Mile Creek, and a drainage ditch are approximately one mile north of the Coke Manufacturing Plant and are not expected to be impacted by the Coke Manufacturing Plant. These areas will be evaluated for ecological risks during the BTF evaluation. Potential ecological receptors would not be expected to contact process water. Therefore, soil is the primary medium to which potential ecological receptors could be exposed at the Coke Manufacturing Plant.

Currently there are no promulgated screening values for soil for the protection of ecological receptors. Therefore, the first step of the ERA, ecological screening value comparison, was bypassed and the second step, preliminary problem formulation, was addressed. This resulted in a qualitative ERA.

The Alabama Natural Heritage Program and the Alabama Division of Game and Fish were requested to provide the most recent information concerning the occurrence of threatened and/or endangered plant and animal species, any habitats of special concern, and/or environmentally sensitive areas at or in the vicinity of the site were sent. The requests and responses are presented in Appendix D. Responses from these agencies indicated that a federally endangered fish species, the Watercress Darter (*Etheostoma nuchale*), inhabits Roebuck Springs, which is approximately 3 to 5 miles east of the site. Because the Watercress Darter is a fish and no surface-water bodies exist on or near the site, there is no reason to believe that COCs that are present potentially impact this animal species or Roebuck Springs.

The land use in the immediate vicinity of the site is mixed, with industrial facilities and residences adjacent to the Plant. As a result, the vast majority of the land adjacent to the Plant is considered to be "improved" (i.e., either built upon or consisting of cut grass-type vegetation with a few trees). Due to the maintenance activities associated with the vegetated areas, and the fragmented nature of the small areas of vegetation that are present, the terrestrial ecosystem in the vicinity of the Plant is considered marginal at best (in terms of supporting terrestrial biota). In addition, based on the physical nature of an operating Coke Manufacturing Plant, very few, if any, ecological receptors would be present at the Coke Manufacturing Plant.

Based on the results of steps one and two of the ERA, it was not considered necessary to further evaluate potential ecological risks associated with the Coke Manufacturing Plant. No screening values for soil have been published by USEPA to evaluate constituent concentrations in soils. Neither the operating Coke Plant nor the surrounding land provides useable habitat for terrestrial or aquatic biota. Therefore, ecological receptors would not be expected to be adversely impacted by the constituents detected in media at the Coke Manufacturing Plant.

5.8 CONCLUSIONS

A baseline risk assessment was conducted to evaluate potential human health and environmental impacts from constituents detected in soil and process water samples at Coke Manufacturing Plant. Recent USEPA (1995) risk assessment guidance was used to select the COCs, estimate exposure, and characterize risk.

Forty-seven soil samples and three process water samples were collected during the Coke Manufacturing Plant RFI. Groundwater was not investigated as part of the Coke Manufacturing Plant RFI but will be addressed in subsequent reports. COCs included seven carcinogenic PAHs (benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, chrysene, dibenzo[a,h]anthracene, and indeno[1,2,3-cd]pyrene); four inorganics (arsenic, chromium, copper, and lead); and one VOC (TCP) based on comparison to risk-based screening values and

background concentrations. TCP was not detected in soil but was the only COC selected for process water.

Based on the current and expected future use of the site, site access controls, and the limited potential for COCs to migrate off-site, site workers were identified as the population with the greatest exposure potential. Site workers were divided into two categories: (1) long-term workers who potentially could be exposed to COCs in surficial soil for up to 250 days per year for 25 years, and (2) excavation workers who could have high intensity exposure to COCs in both surficial and subsurface soil, but only would be exposed for relatively short time periods during construction projects. Exposure to soil also was evaluated for a future hypothetical teenage trespasser. Occasional site worker exposure to process water (once per month for 25 years) also was evaluated. Because of the site setting, industrial activities at the Coke Manufacturing Plant, and the lack of habitat, exposure to ecological receptors was not considered to be ecologically significant.

A standard deterministic, or point, risk assessment was conducted using data and default assumptions consistent with estimating the RME at the site for the site worker and excavation worker. The HIs for all receptors and exposure pathways were below 1 and indicate that soil and process water does not pose a noncarcinogenic hazard. The ELCRs ranged from 7×10^{-5} (site worker, surficial soil exposure) to 1×10^{-6} (excavation worker, total soil exposure) and are within the USEPA's target risk range (10^{-4} to 10^{-6}). Benzo(a)pyrene and arsenic were responsible for most of the cancer risk. Risk-based RGOs were developed for carcinogenic risks corresponding to target risk levels of 10^{-4}, 10^{-5}, and 10^{-6} according to USEPA (1995) guidelines. Data collected from each SWMU was compared with the RGOs to identify potential hot spot areas. SWMU 8 and SWMU 11 both contained maximum benzo(a)pyrene concentrations of 86,000 µg/kg, which exceeded the RGO at the 10^{-4} target level.

Because some of the ELCRs were near the upper end of the target risk range, a probabilistic risk assessment using a Monte Carlo approach was conducted as part of the uncertainty analysis. The Monte Carlo risk assessment provides a probability distribution of site worker risks rather than a single point estimate. This risk assessment indicated that the median expected ELCR was 1×10^{-7} and the 95th percentile value was 7×10^{-6}.

6. RECOMMENDATIONS

The following recommendations for additional investigations are based upon the data presented in Section 4.0 and the risk assessment presented in Section 5.0 of this report. Table 6-1 summarizes the recommended action for each of the SWMUs evaluated during this investigation. The objective of the proposed investigation tasks is to determine the presence or absence of PAHs in groundwater. Recommendations were developed and are discussed on a SWMU basis.

6.1 QUENCH TOWER A AND SUMPS, PUMP BASINS, AND SETTLING BASINS (SWMUS 1A, 2A, AND 3A)

Due to the low levels of detected constituents and the findings of the risk assessment, no further action is recommended for SWMUs 1A, 2A, and 3A.

6.2 QUENCH TOWER B AND SUMP AND PUMP BASIN (SWMUS 1B AND 2B)

Based upon the available information and the findings of the risk assessment, no further action is recommended for SWMUs 1B and 2B.

6.3 COAL STORAGE AREA DRAIN SYSTEM (SWMU 5)

Since concentrations of benzo(a)anthracene, benzo(a)pyrene benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene exceeding the residential RBC guidelines were detected in the soil borings south, east, west, and northwest of the SWMU 5 trough, Sloss believes that it would be appropriate to install one groundwater monitor well to determine if any of these constituents have migrated to the underlying bedrock. One monitor well will be installed in the vicinity of soil boring 960612-CO-05-SL0002 on the east side of SWMU 5.

The monitor well boring will be advanced to the top of the bedrock and a protective 6-inch steel surface casing will be installed to seal the boring from the overlying soil. After allowing the surface casing to set for at least 24 hours, the borehole will then be advanced through the surface casing an additional 15 feet into the bedrock to permit the installation of a 2-inch-diameter, PVC monitor well with a 0.010-inch slot, 10 foot screen. The monitor well will be sampled once for SVOC analytes (USEPA Method 8270) specified in the site approved QAPP. All installation, development, and groundwater sampling procedures will be conducted in conformance with the site approved work plan. The approximate location of this proposed well is shown on Figure 6-1.

Relative to the soil, the available information and the conclusions of the risk assessment supports a no further action conclusion.

6.4 COAL TAR COLLECTION SUMP IN PUMP HOUSE (SWMU 7) AND FLUSHING LIQUOR DECANTER AND SUMP (SWMUS 8 AND 9)

Due to the low levels of detected constituents and the findings of the risk assessment, no further action is recommended for SWMUs 8 and 9.

Relative to SWMU 7, the risk assessment concludes that the concentration of benzo(a)pyrene detected south of SWMU 7 exceeded the 10^{-5} target level RGO.

To further delineate the extent of PAHs in soil that exceed residential RBCs, Sloss proposes to install two additional soil borings, one southeast and one southwest of soil boring 960615-CO-07-SL0001, at the locations proposed on Figure 6-2. Additional soil borings cannot be placed northeast of soil boring 960615-CO-07-SL0001 because of underground structures and

access problems. Soil borings will be installed and soil samples will be collected for laboratory analysis in accordance with procedures specified in the approved RFI Work Plan.

Based upon the presence of PAHs at the bedrock surface and the findings of the risk assessment, Sloss recommends installing one monitor well in the vicinity of soil boring 960615-CO-07-SL0001. The monitor well boring will be advanced to the top of the bedrock and a protective 6-inch steel surface casing will be installed to seal the boring from the overlying soil. After allowing the surface casing to set for at least 24 hours, the borehole will then be advanced through the surface casing an additional 15 feet into the bedrock to permit the installation of a 2-inch-diameter, PVC monitor well with a 0.010-inch slot, 10 foot screen. The monitor well will be sampled once for SVOC analytes (USEPA Method 8270) specified in the site approved QAPP. All installation, development, and groundwater sampling procedures will be conducted in conformance with the site approved work plan. The approximate location of this proposed well is shown on Figure 6-1.

6.5 COAL TAR DECANTERS (SWMUS 10, 11, AND 12)

6.5.1 Coal Tar Decanter for No. 3 and No. 4 Coke Batteries (SWMU 10)

Based upon available information and the findings of the risk assessment, no further action is recommended for SWMU 10.

As proposed in the July 7, 1999 responses to USEPA comments on the Coke Plant RFI, Sloss will install one shallow monitor well downgradient of SWMUs 10 and 11 and one shallow monitor well downgradient of the Coke Plant at the approximate locations shown on Figure 6-1. Each monitor well boring will be advanced to the top of the bedrock and a protective 6-inch steel surface casing will be installed to seal the boring from the overlying soil. After allowing the

surface casing to set for at least 24 hours, the borehole will then be advanced through the surface casing an additional 15 feet into the bedrock to permit the installation of a 2-inch-diameter, PVC monitor well with a 0.010-inch slot, 10 foot screen. The monitor wells will be sampled once for VOCs, SVOCs, PP metals, barium, and cyanide using analytical methods specified in the site approved QAPP. All installation, development, and groundwater sampling procedures will be conducted in conformance with the site approved work plan.

6.5.2 Coal Tar Decanter for No. 5 Coke Battery (SWMU 11)

Based upon the available information and the findings of the risk assessment, no further action is recommended for soil at SWMU 11. The maximum benzo(a)pyrene concentration exceeded the RGO corresponding to an excess lifetime cancer risk of 10^{-4}. The area surrounding this SWMU is paved with asphalt. Soil samples were collected at a depth of 2 to 4 feet below grade after augering through the asphalt. The presence of the asphalt limits potential contact with the impacted soil. Therefore, it is unlikely that any actual exposure will occur.

As discussed in Section 6.5.1, Sloss will install one shallow monitor well downgradient of SWMUs 10 and 11 and one shallow monitor well downgradient of the Coke Plant at the approximate locations shown on Figure 6-1.

6.5.3 Coal Tar Decanter for No. 1 and No. 2 Coke Batteries (SWMU 12)

Based upon the available information and the findings of the risk assessment, no further action is recommended for SWMU 12.

6.6 SPILL AREA AROUND DIESEL TANK (SWMU 6)

Due to the low levels of detected constituents and the findings of the risk assessment, no further action is recommended for SWMU 6.

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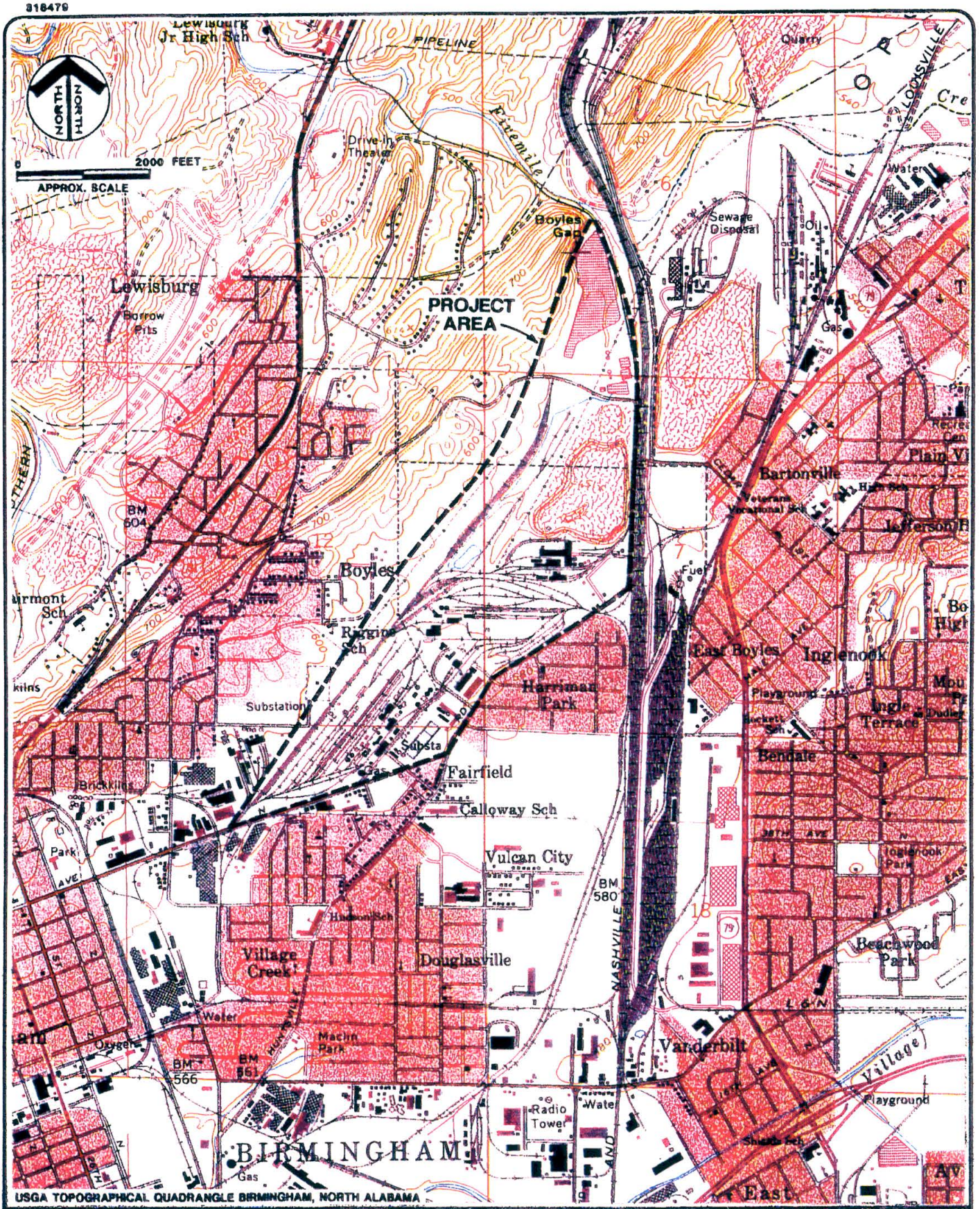


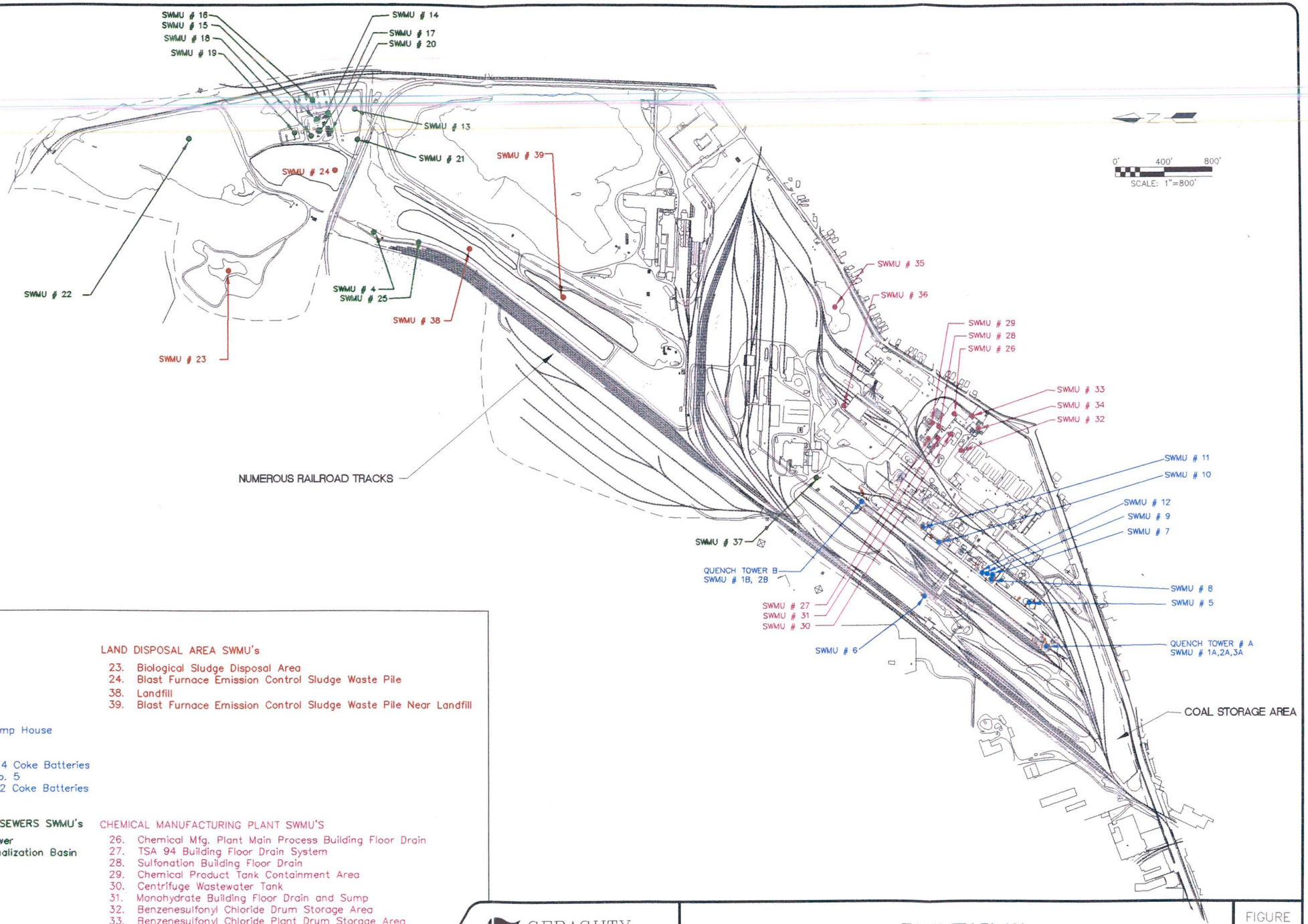
USGA TOPOGRAPHICAL QUADRANGLE BIRMINGHAM, NORTH ALABAMA

GERAGHTY & MILLER, INC.
Environmental Services

PROJECT LOCATION MAP

SLOSS INDUSTRIES, CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
1-1



LEGEND

- EXISTING RAILROADS
- EXISTING ROADS
- PROPERTY BOUNDARY
- ● SWMU # 2 SOLID WASTE MANAGEMENT UNITS

COKE MANUFACTURING PLANT SWMU's

1. Quench Towers and Sumps
2. Quench Tower Pump Basins
3. Old Quench Tower Settling Basins
5. Coal Tar Storage Area Drain System
6. Spill Area Around Diesel Tank
7. Coal Tar Collection Sump in No. 1 Pump House
8. Flushing Liquor Decanter
9. Flushing Liquor Decanter Sump
10. Coal Tar Decanter for No. 3 and No. 4 Coke Batteries
11. Coal Tar Decanter for Coke Battery No. 5
12. Coal Tar Decanter for No. 1 and No. 2 Coke Batteries

BIOLOGICAL TREATMENT FACILITY (BTF) AND SEWERS SWMU's

4. Biological Treatment Facility (BTF) Sewer
13. Biological Treatment Facility (BTF) Equalization Basin
14. BTF pH Neutralization Basin
15. BTF Primary Clarifier
16. BTF Aeration Basin
17. BTF Secondary Clarifier
18. BTF Thickener
19. BTF Digester
20. Dewatering Machine
21. BTF Emergency Basin
22. Polishing Pond
25. Storm Water Runoff Sewer
37. BTF Sewer Tar Trap

LAND DISPOSAL AREA SWMU's

23. Biological Sludge Disposal Area
24. Blast Furnace Emission Control Sludge Waste Pile
38. Landfill
39. Blast Furnace Emission Control Sludge Waste Pile Near Landfill

CHEMICAL MANUFACTURING PLANT SWMU'S

26. Chemical Mfg. Plant Main Process Building Floor Drain
27. TSA 94 Building Floor Drain System
28. Sulfonation Building Floor Drain
29. Chemical Product Tank Containment Area
30. Centrifuge Wastewater Tank
31. Monohydrate Building Floor Drain and Sump
32. Benzenesulfonyl Chloride Drum Storage Area
33. Benzenesulfonyl Chloride Plant Drum Storage Area
34. Benzenesulfonyl Chloride Wastewater Neutralization System
35. Old Waste Pile at Mineral Wool Plant
36. Maintenance Shop Used Oil Tank

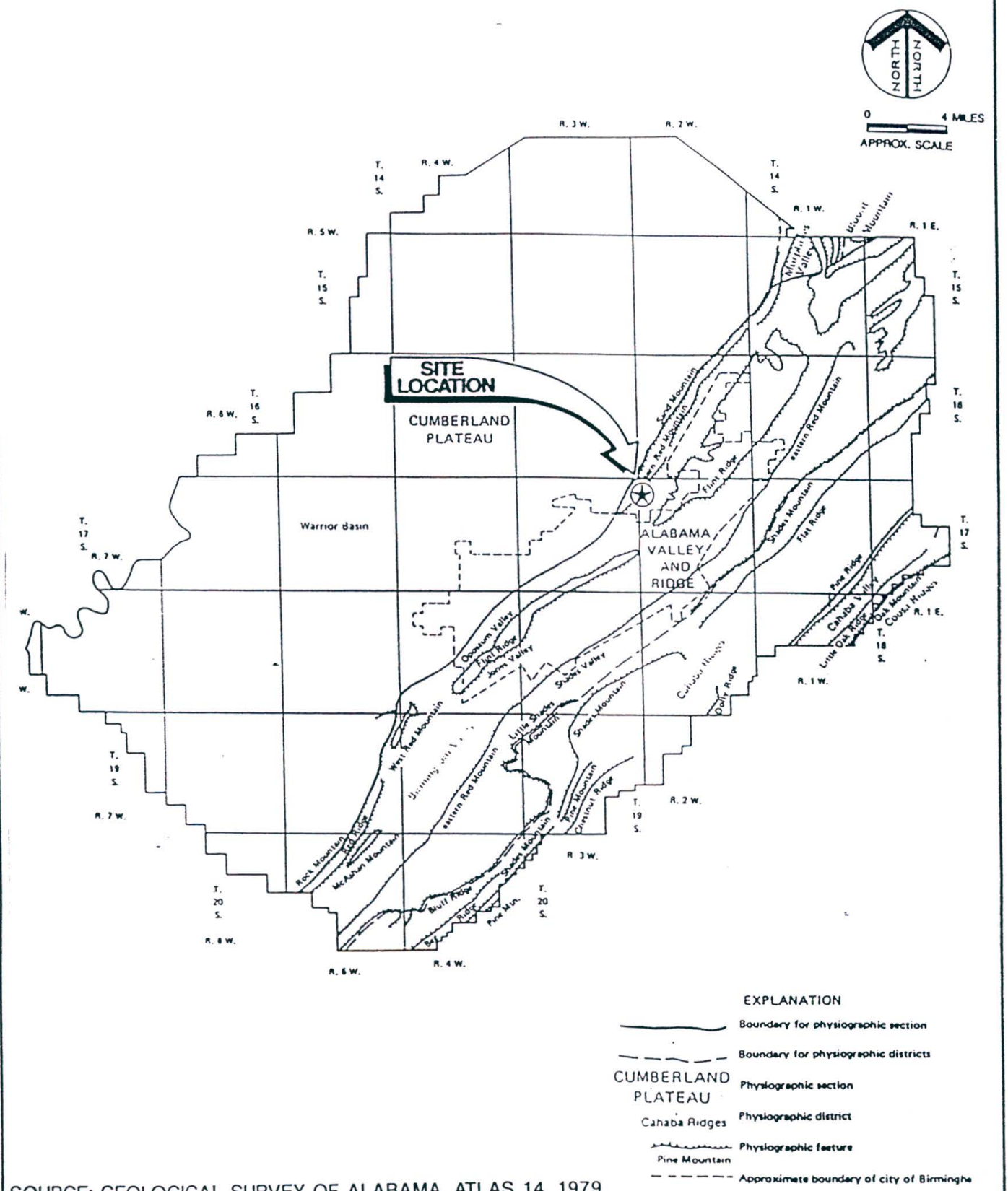
GERAGHTY & MILLER, INC.
Environmental Services

FACILITY PLAN

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
1-2

DRAWING: SLO95.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: BJH
FILE NO.: SLOSS | PROJCT NO.: TF0320.013 | DWG DATE: 10/15/96



SOURCE: GEOLOGICAL SURVEY OF ALABAMA, ATLAS 14, 1979

GERAGHTY & MILLER, INC.
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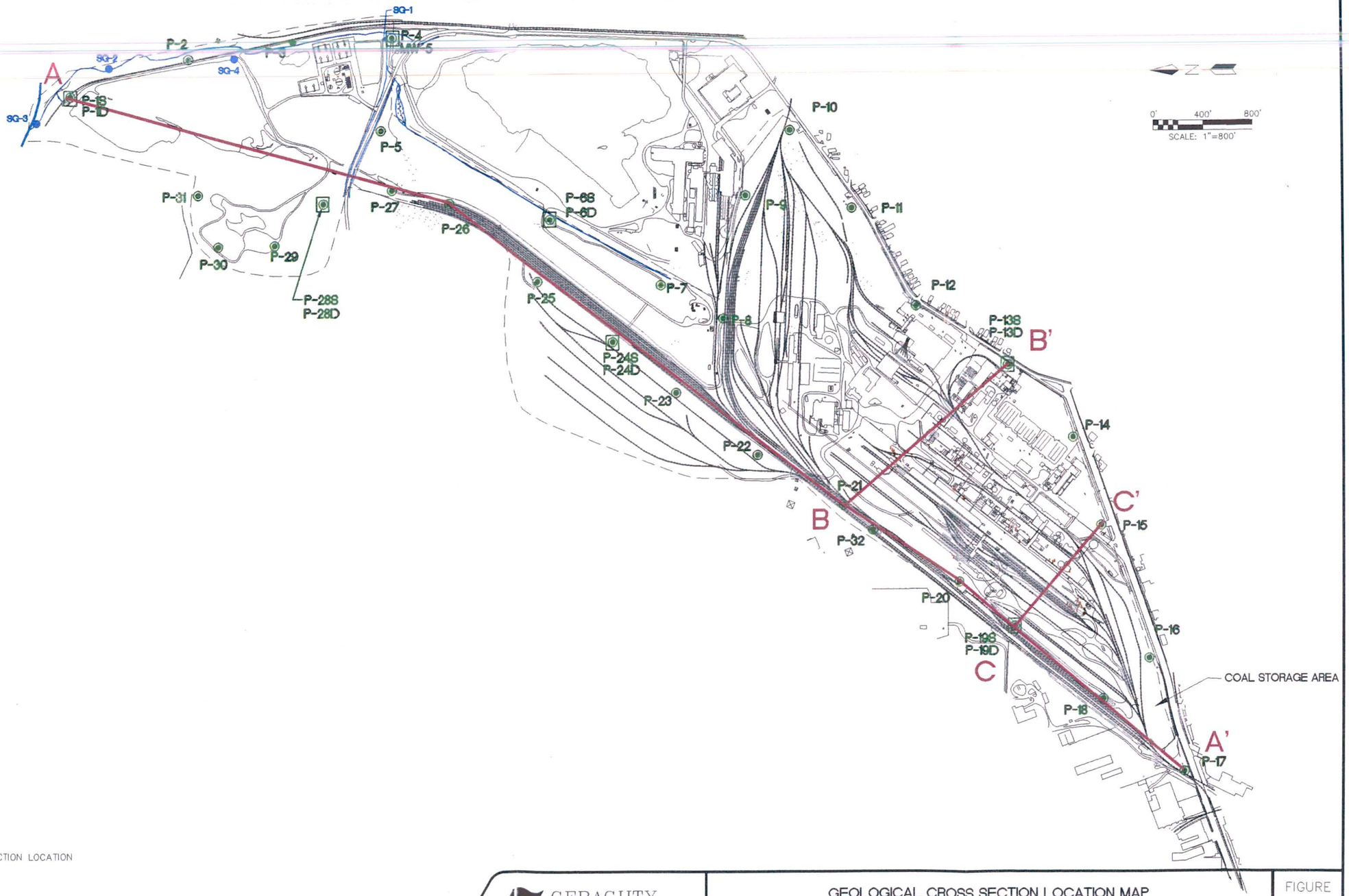
TOPOGRAPHIC FEATURES AND PHYSIOGRAPHIC SECTION MAP

COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
2-1

DWG DATE: 11/5/96 | PRJCT NO.: TF0320.013 | FILE NO.: SLOSS | DRAWING: SL095.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: BJH



LEGEND

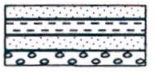
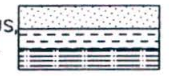
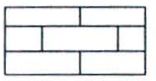
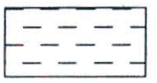
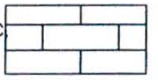
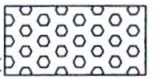
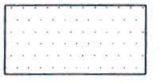
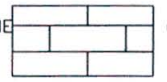
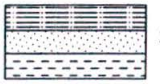
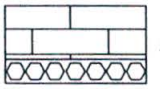
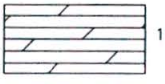
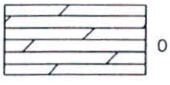
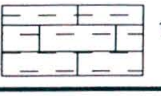
- EXISTING RAILROADS
- EXISTING ROADS
- PROPERTY BOUNDARY
- DRAINAGE DITCH
- P-31 SINGLE PIEZOMETERS
- P-1 PIEZOMETER COUPLET
- SG-3 STAFF GAUGE
- A — A' GEOLOGICAL CROSS SECTION LOCATION

GERAGHTY & MILLER, INC.
Environmental Services

GEOLOGICAL CROSS SECTION LOCATION MAP

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
2-2

FORMATION		LITHOLOGY		THICKNESS
PENNSYLVANIAN	POTTSVILLE FORMATION (Pp)	ALTERNATING BEDS OF SANDSTONE AND SHALE WITH NUMEROUS COAL SEAMS AND ASSOCIATED BEDS OF UNDERCLAY ORTHOQUARTZITE AND QUARTZ PEBBLE CONGLOMERATE OCCUR AT BASE		100 TO 2800 FEET
	PARKWOOD FORMATION (PMpw)	LIGHT TO MEDIUM GRAY, VERY FINE TO FINE GRAINED, ARGILLACEOUS, MICACEOUS SANDSTONE INTERBEDDED WITH MEDIUM TO DARK GRAY, FISSLE, MICAEOUS SHALE AND SILTSTONE.		0 TO 900 FEET
MISSISSIPPIAN	FLOYD SHALE (Mf)	DARK GRAY CLAY SHALE WITH LOCALLY OCCURRING THIN SILTSTONE BEDS.		0 TO 600 FEET
	BANGOR LIMESTONE (Mb)	MEDIUM BEDDED, MEDIUM TO MEDIUM LIGHT GRAY, BIOCLASTIC OR OOLITIC LIMESTONE WITH LOCALLY OCCURING ARGILACEOUS AND SUBLITHOGRAPHIC LIMESTONE AND SHALE		0 TO 500 FEET
	HARTSELLE SANDSTONE (Mh)	MEDIUM TO VERY THICK BEDDED, CLEAN, WELL SORTED, LIGHT COLORED, VERY FINE TO MEDIUM GRAINED, CROSS-BEDDED, QUARTZ SANDSTONE.		0 TO 120 FEET
	PRIDE MOUNTAIN FORMATION (Mpm)	DARK GRAY, FISSLE, CLAY SHALE WITH THIN SANDSTONE AND SILTSTONE BEDS. BASAL OOLITIC LIMESTONE BED. CLAY SHALE INDISTINGUISHIBLE FROM THE FLOYD SHALE.		120 TO 400 FEET
	TUSCUMBIA LIMESTONE (Mt)	THICK BEDDED, MEDIUM DARK TO MEDIUM GRAY CRYSTALLINE, OOLITIC SUBLITHOGRAPHIC AND BIOCLASTIC LIMESTONE WITH MINOR AMOUNTS OF CHERT.		70 TO 110 FEET
	FORT PAYNE CHERT (Mfp)	GRAYISH ORANGE TO LIGHT GRAY, BEDDED, FOSSILIFEROUS CHERT. GENERALLY HIGHLY WEATHERED IN OUTCROP. GREENISH-GRAY TO GRAYISH RED THINLY LAMINATED SHALE COMMONLY OCCURS AT BASE (MAURY FORMATION).		90 TO 200 FEET
DEVONIAN	CHATTANOOGA SHALE (Dc)	BROWNISH-BLACK, FISSLE, SILTY SHALE.		0 TO 10 FEET
	FROG MOUNTAIN SANDSTONE (Dfm)	MEDIUM TO THICK BEDDED, DUSKY RED AND LIGHT TO DARK GRAY, COARSE GRAINED, HEMATITIC SANDSTONE AND LIGHT TO DARK GRAY HEMATITIC SANDSTONE AND PEBBLE CONGLOMERATE.		0 TO 36 FEET
	DEVONIAN UNDIFFERENTIATED (Du)	LIGHT OLIVE GRAY TO WHITE TO YELOWISH GRAY, FINELY CRYSTALLINE SILICEOUS, CHERTY, GLAUCONITIC, DOLOMITIC LIMESTONE		0 TO 120 FEET
SILURIAN	RED MOUNTAIN FORMATION (Srm)	DARK-REDISH-BROWN TO OLIVE GRAY SILTSTONE, SANDSTONE, OCCASIONAL THIN BED OF LIMESTONE, AND SHALE WITH HEMATITE BEDS 5-30 FEET THICK.		200 TO 500 FEET
ORDOVICIAN	CHICKAMAUGA LIMESTONE (Oc)	THIN TO MEDIUM BEDDED SUBLITHOGRAPHIC LIMESTONE WITH SOME ARGILLACEOUS AND CRYSTALLINE LIMESTONE, SHALE, AND BENTONITE INTERBEDS. BASAL CHERT CONGLOMERATE PRESENT(ATTALLA CHERT).		200 TO 500 FEET
	KNOX GROUP UNDIFFERENTIATED (OCk)	THICK BEDDED, MEDIUM TO LIGHT GRAY CHERTY DOLOMITE WITH LESSER AMOUNT OF LIMESTONE AND DOLOMITIC LIMESTONE		1500 TO 3000 FEET
CAMBRIAN	KETONA DOLOMITE (Ckt)	THICK BEDDED, LIGHT BROWNISH GRAY TO YELLOWISH GRAY, CRYSTALLINE DOLOMITE.		0 TO 600 FEET
	CONASAUGA FORMATION (Cc)	THIN BEDDED, DARK TO BROWNISH GRAY, SUBLITHOGRAPHIC SHALEY LIMESTONE		1100 TO 1900 FEET

DRAFTER: BJH | APPROVED: PF | CHECKED: JH | DRAWING: SLO-LITH.DWG | FILE NO.: SLOSS | PRJCT NO.: X | DWG DATE: 10/15/96

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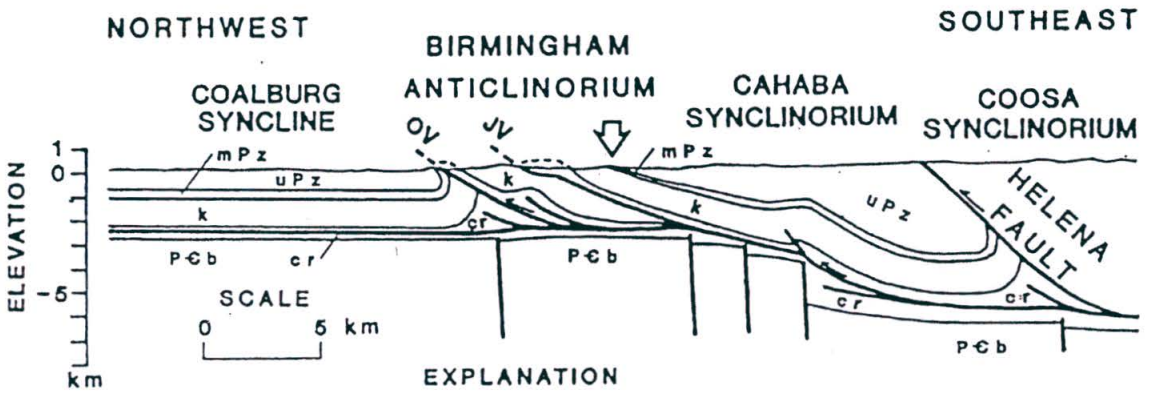
GENERALIZED GEOLOGIC STRATIGRAPHIC SECTION

COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
2-3



EXPLANATION

uPz	MISSISSIPPIAN-PENNSYLVANIAN
mPz	MIDDLE-UPPER ORDOVICIAN, SILURIAN
k	CAMBRIAN-ORDOVICIAN KNOX GROUP
cr	CAMBRIAN ROME AND CONASAUGA FORMATIONS
P€b	PRECAMBRIAN BASEMENT ROCKS
OV	OPOSSUM VALLEY FAULT
JV	JONES VALLEY FAULT

LOCATION OF RED MOUNTAIN EXPRESSWAY

SOURCE: THOMAS AND BEARCE, 1986

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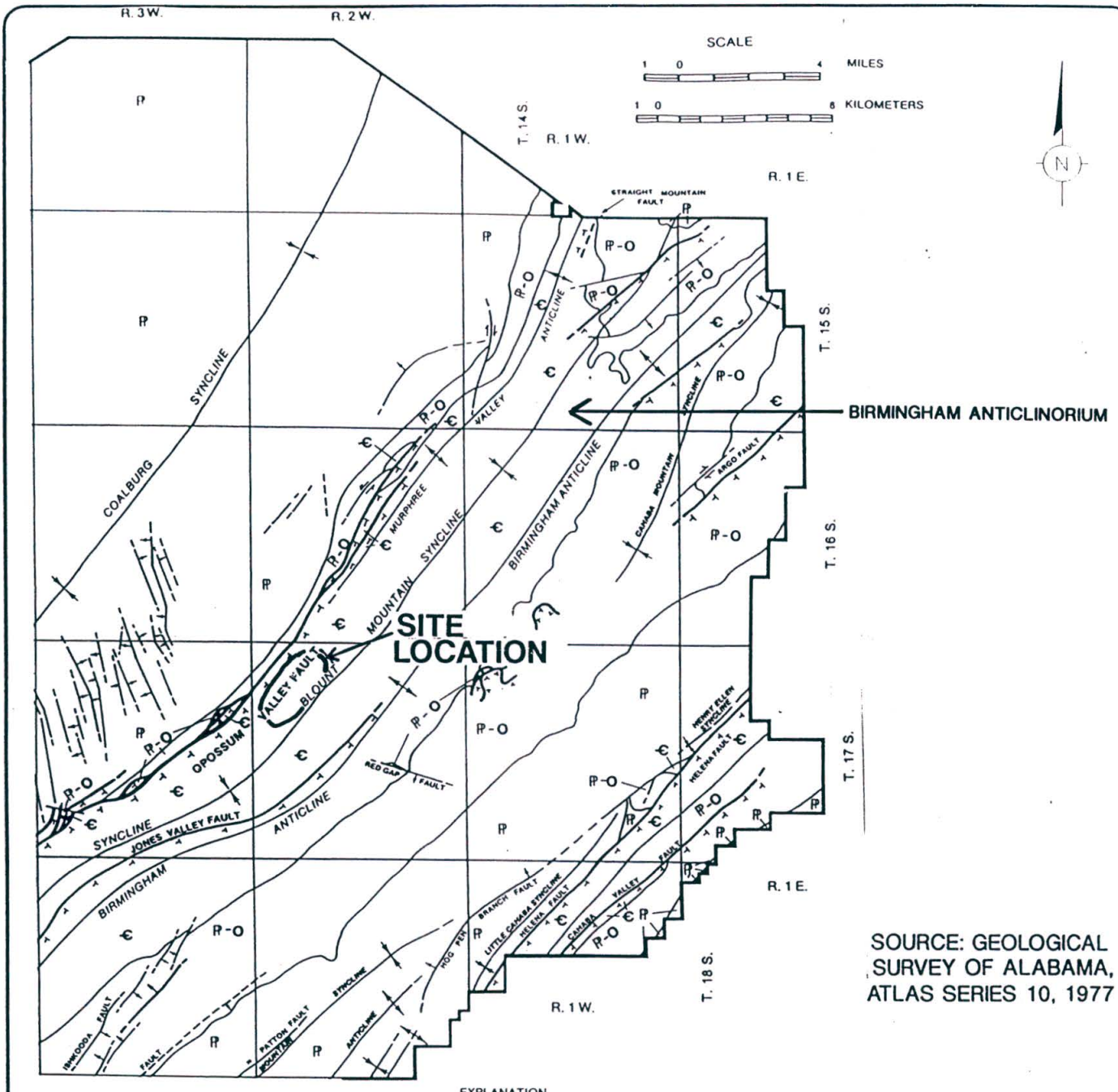
STRUCTURAL CROSS-SECTION OF THE VALLEY AND RIDGE PROVINCE

COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
2-4



EXPLANATION

Pennsylvanian	P	Pottsville Formation
Pennsylvanian to Ordovician	P-O	Parkwood Formation, Floyd Shale, Bangor Limestone, Hartselle Sandstone, Pride Mountain Formation, Tuscumbia Limestone, Fort Payne Chert, Maury Formation, Chattanooga Shale, Frog Mountain Sandstone, Red Mountain Formation, Chickamauga Limestone, Attalla Chert Conglomerate Member of Chickamauga Limestone, and Ordovician undifferentiated
Cambrian (includes some Early Ordovician rocks in the Cahaba Valley)	€	Knox Group undifferentiated, Ketona Dolomite, Conasauga Formation, and Rome Formation

(Cretaceous and Holocene deposits occur locally but are not shown)

- Anticlinal axis
- Anticlinal axis showing direction of plunge
- Synclinal axis
- Synclinal axis showing direction of plunge
- Normal fault, arrow on downthrown side
- Thrust fault, T on upper plate
- Fault, showing relative horizontal movement
- Reverse fault, R on upthrown side
- Contact

Dashed where inferred

GERAGHTY & MILLER, INC.
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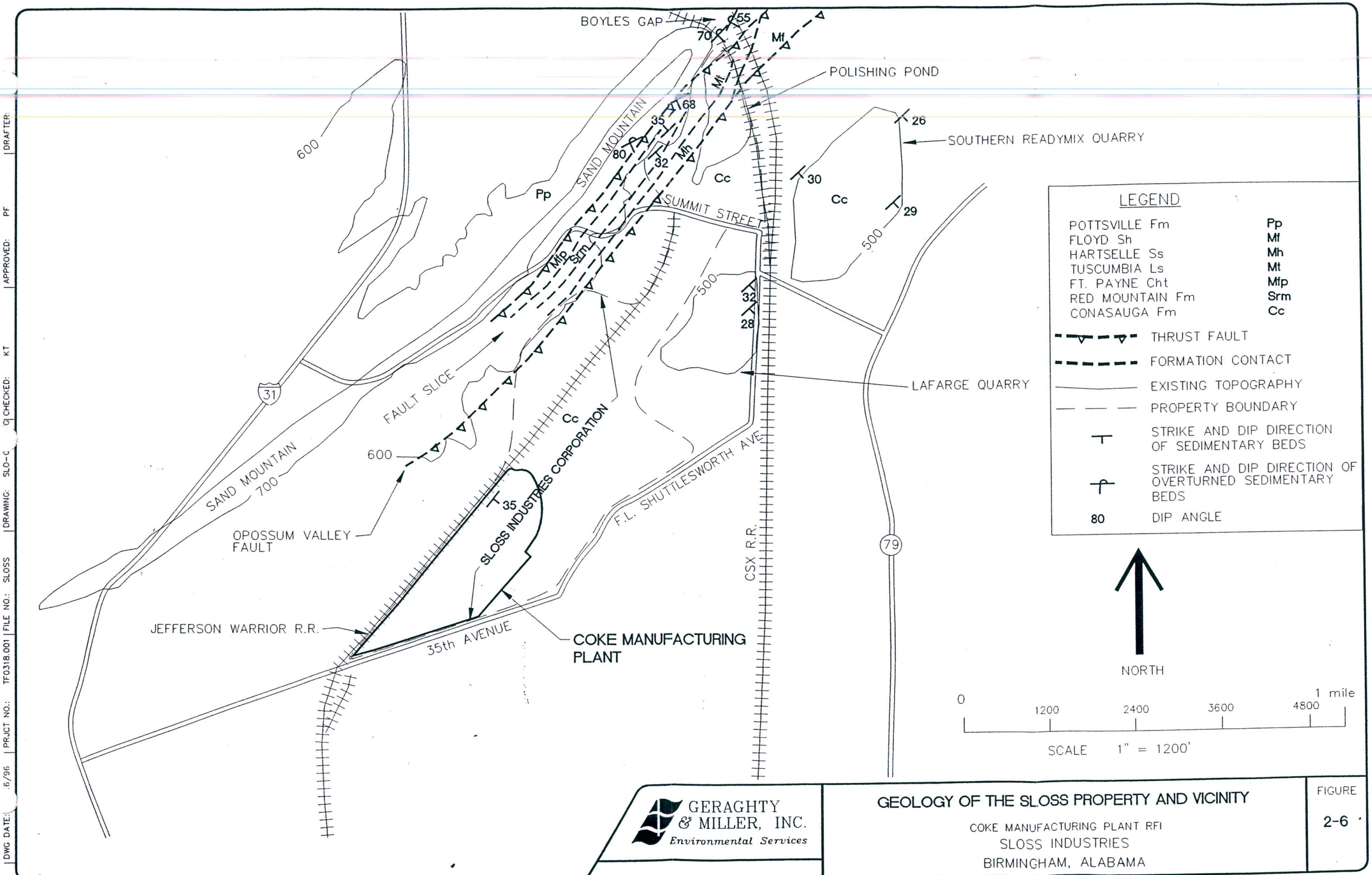
GENERALIZED GEOLOGY OF EASTERN JEFFERSON COUNTY, ALABAMA

COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
2-5



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GEOLOGY OF THE SLOSS PROPERTY AND VICINITY

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES
BIRMINGHAM, ALABAMA

FIGURE 2-6

DWG DATE: 6/96 | PRJCT NO.: TF0318.001 | FILE NO.: SLOSS | DRAWING: SLO-C | CHECKED: KT | APPROVED: PF | DRAFTER:

A

A'

ELEVATION IN FEET (MEAN SEA LEVEL)

600
580
560
540
520
500
480
460
440
420

RR TRACKS

WEATHERED LIMESTONE

OPOSSUM VALLEY FAULT

SUMMIT STREET

P-1D
POLISHING POND
P-27
P-26
P-25
P-24D
P-23
P-22
P-21
P-32
P-20
P-19D
P-18
P-17

WEATHERED LIMESTONE

POTTSVILLE FORMATION

PARKWOOD FORMATION

FORT PAYNE CHERT

RED MOUNTAIN FORMATION

CHICKAMAUGA LIMESTONE

KNOX GROUP

TUSCUMBIA LIMESTONE

HARTSELLE SANDSTONE

FLOYD SHALE

CONASAUGA FORMATION

LEGEND

- INORGANIC CLAYS OF LOW TO HIGH PLASTICITY; GRAVELY, SANDY OR SILTY CLAY. (CL AND CH)
- SHALE
- SANDSTONE
- SHALEY LIMESTONE
- LIMESTONE
- CHERT
- SILTSTONE AND SHALE
- DOLOMITE W/INTERBEDDED CHERT
- NON-NATIVE MATERIALS (FLU DUST, COAL)
- WATER TABLE ON JUNE 13, 1996
- FORMATION CONTACT
- THRUST FAULT(ARROW INDICATES RELATIVE MOVEMENT)
- SOIL/BEDROCK CONTACT
- SCREEN INTERVAL

NOTE:
ORIENTATION OF PATTERN DOES NOT REFLECT STRUCTURAL ORIENTATION OF SEDIMENTARY FORMATIONS

HORIZ. 1" = 1000'
VERT. 1" = 25

DWG DATE: 9/96 | PRJCT NO.: TF0318.001 | FILE NO.: SLOSS | DRAWNG: SLO- | CHECKED: KT | APPROVED: PF | DRAFTER: 4

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GEOLOGICAL SECTION A - A'

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
2-7.

LEGEND

INORGANIC CLAYS OF LOW TO HIGH PLASTICITY; GRAVELY, SANDY OR SILTY CLAY. (CL AND CH)

SHALEY LIMESTONE

NON-NATIVE MATERIALS (FLU DUST, COAL)

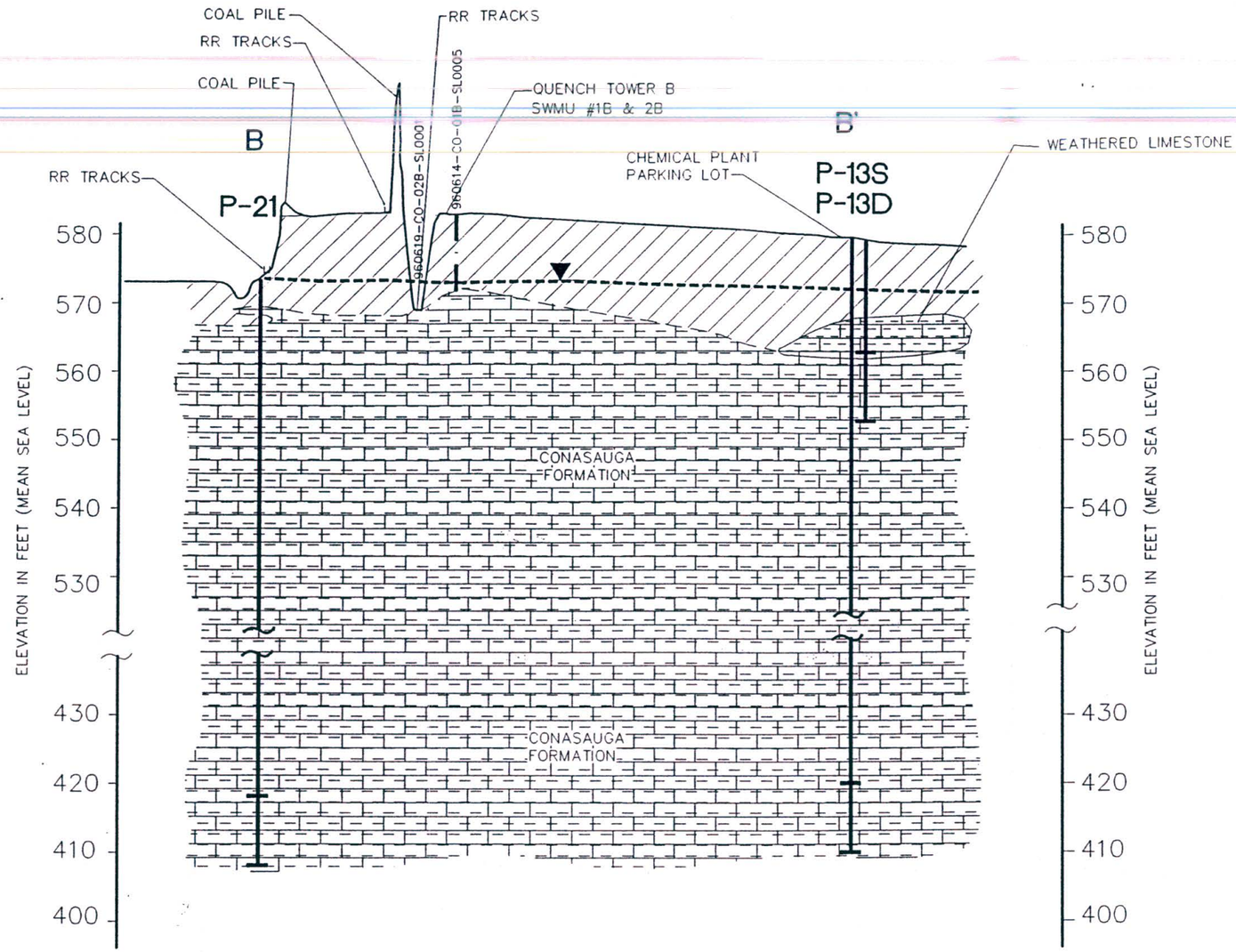
WATER TABLE ON JUNE 13, 1996

SOIL/BEDROCK CONTACT

SCREEN INTERVAL

SOIL BORING LOCATION

NOTE:
ORIENTATION OF PATTERN DOES NOT REFLECT STRUCTURAL ORIENTATION OF SEDIMENTARY FORMATIONS



HORIZ. 1" = 400'
VERT. 1" = 20'

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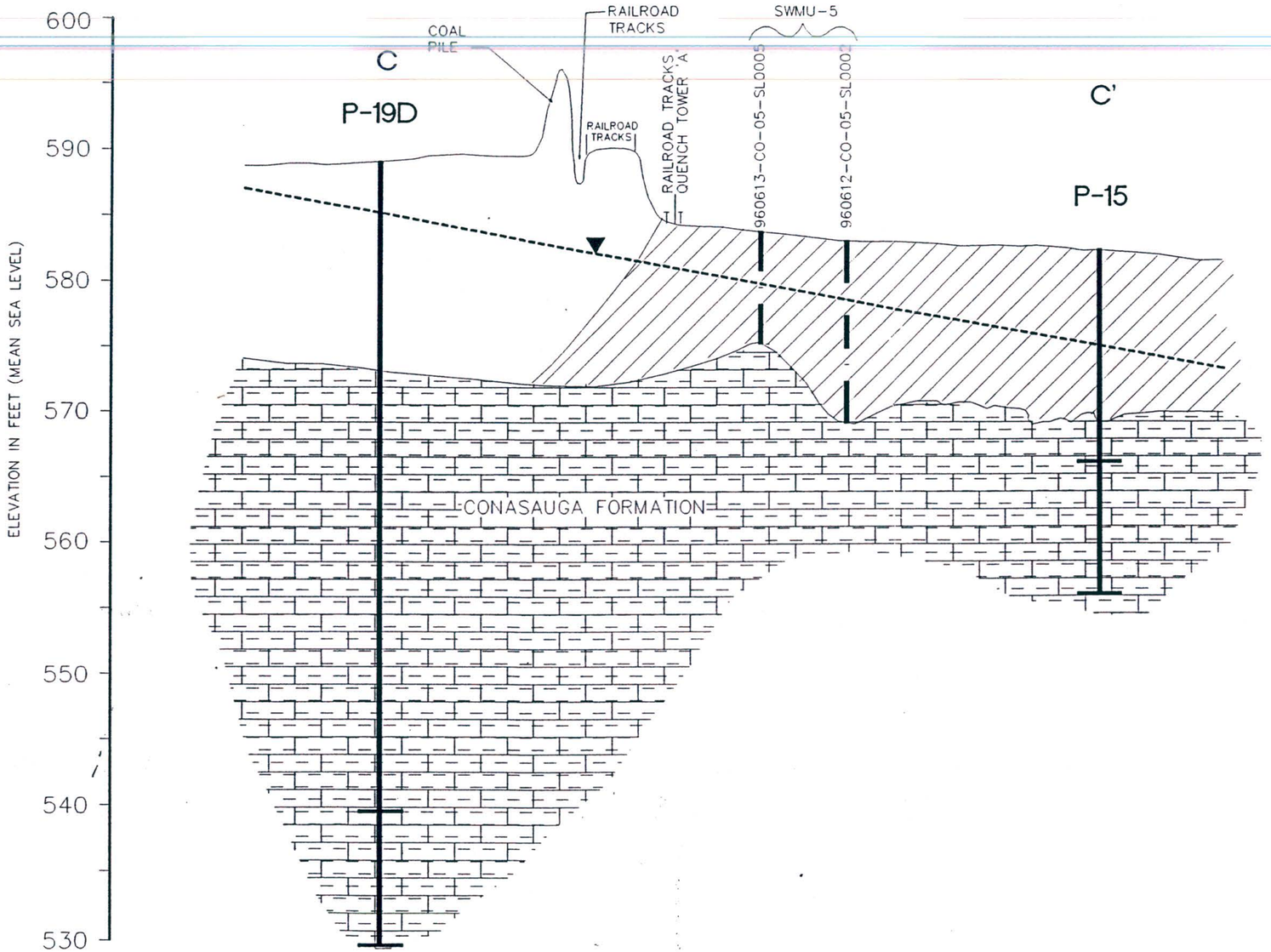
GEOLOGICAL CROSS SECTION B - B'

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
2-8

DWG DAT: /16/96 | PRJCT NO.: TF0318.001 | FILE NO.: SLOSS | DRAWING: SLO- | CHECKED: VG | APPROVED: X | DRAFTER: JH



LEGEND

- INORGANIC CLAYS OF LOW TO HIGH PLASTICITY; GRAVELY, SANDY OR SILTY CLAY. (CL AND CH)
- SHALEY LIMESTONE
- NON-NATIVE MATERIALS (FLU DUST, COAL)
- WATER TABLE ON JUNE 13, 1996
- FORMATION CONTACT
- SOIL/BEDROCK CONTACT
- SCREEN INTERVAL
- SOIL BORING LOCATION

HORIZ. 1" = 200'
VERT. 1" = 10

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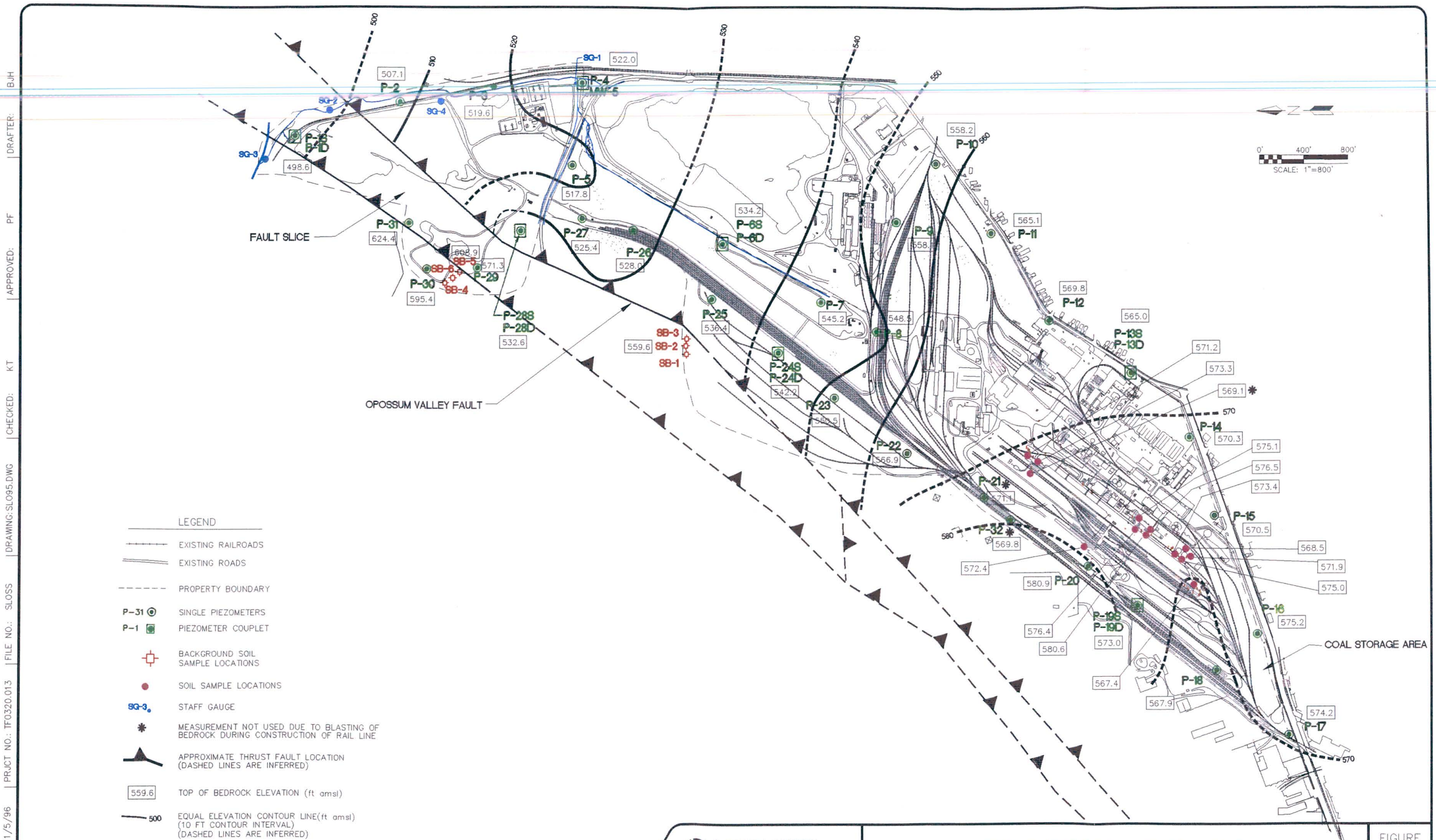
GEOLOGICAL CROSS SECTION C - C'

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
2-9

DWG DATE: 5/15/96 | PRJCT NO.: TF0318.001 | FILE NO.: SLOSS | DRAWING: SLOSS | CHECKED: KT | APPROVED: PF | DRAFTER:

DWG DATE: 11/5/96 | PRJCT NO.: TF0320.013 | FILE NO.: SLOSS | DRAWING:SLO95.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: BJH



LEGEND

- EXISTING RAILROADS
- EXISTING ROADS
- PROPERTY BOUNDARY
- P-31 SINGLE PIEZOMETERS
- P-1 PIEZOMETER COUPLET
- BACKGROUND SOIL SAMPLE LOCATIONS
- SOIL SAMPLE LOCATIONS
- SG-3 STAFF GAUGE
- MEASUREMENT NOT USED DUE TO BLASTING OF BEDROCK DURING CONSTRUCTION OF RAIL LINE
- APPROXIMATE THRUST FAULT LOCATION (DASHED LINES ARE INFERRED)
- 559.6 TOP OF BEDROCK ELEVATION (ft amsl)
- 500 EQUAL ELEVATION CONTOUR LINE(ft amsl) (10 FT CONTOUR INTERVAL) (DASHED LINES ARE INFERRED)

NOTE: TOP OF BEDROCK WAS NOT CONTOURED ON SAND MOUNTAIN BECAUSE OF INSUFFICIENT DATA

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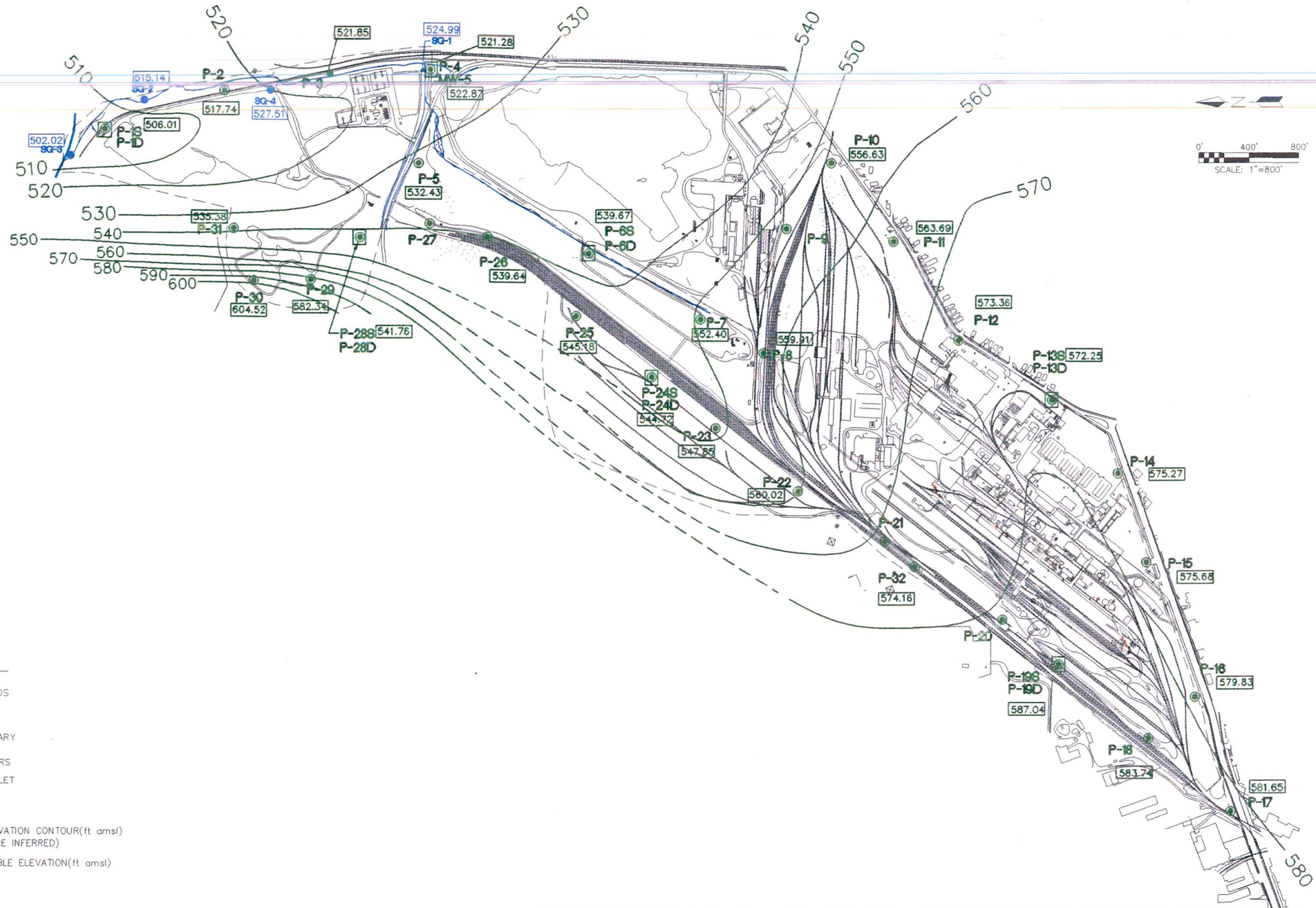
TOP OF BEDROCK CONTOUR MAP

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
2-10



LEGEND

- EXISTING RAILROADS
- EXISTING ROADS
- PROPERTY BOUNDARY
- P-31 SINGLE PIEZOMETERS
- P-1 PIEZOMETER COUPLET
- SG-3 STAFF GAGE
- 580 WATER TABLE ELEVATION CONTOUR(ft amsl) (DASHED LINES ARE INFERRED)
- 572.92 GROUNDWATER TABLE ELEVATION(ft amsl)

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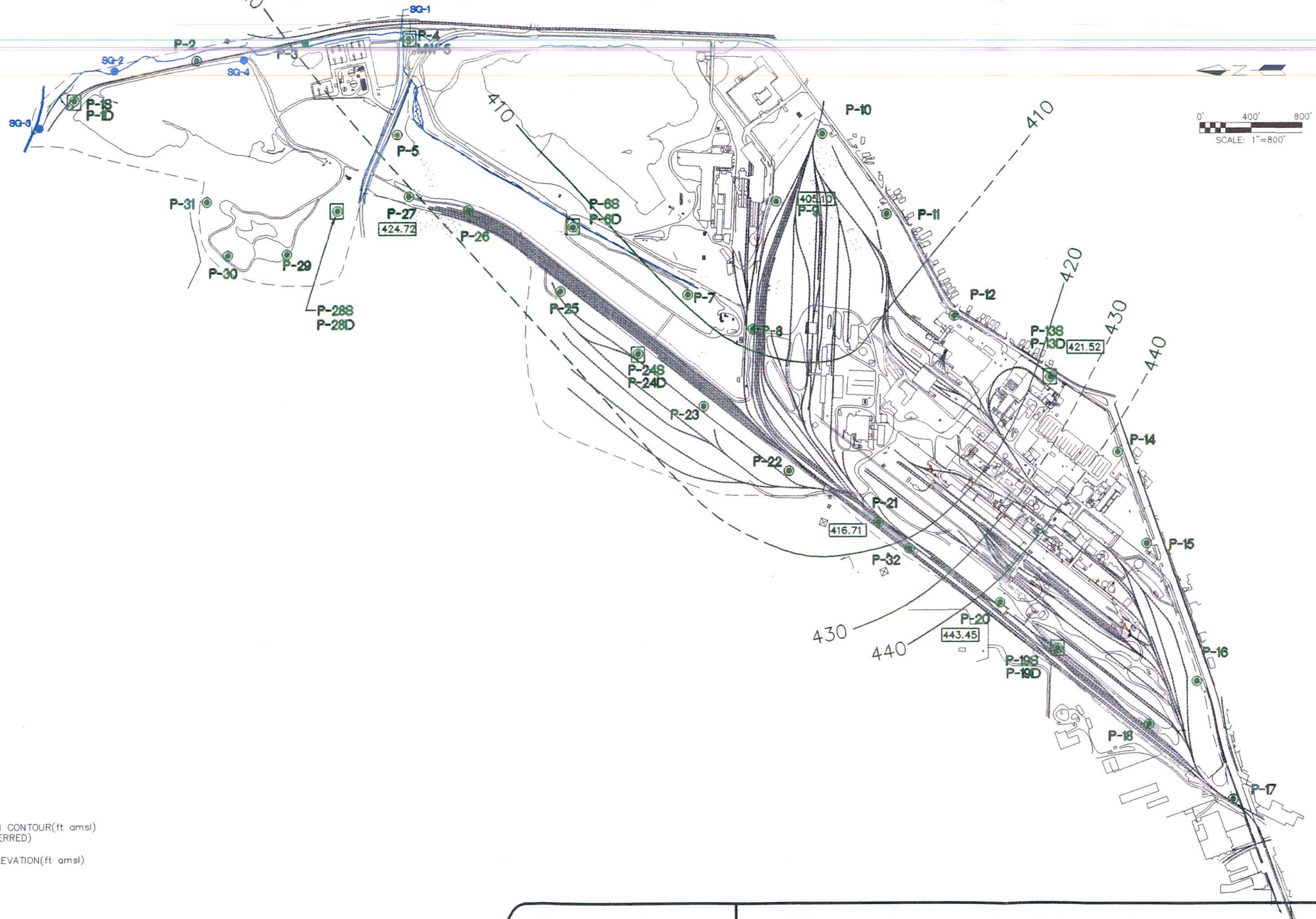
SHALLOW AQUIFER WATER TABLE ELEVATIONS, JUNE 13, 1996

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
2-11

DWG DATE: 11/5/96 | PRJCT NO.: TF0320.013 | FILE NO.: SLOSS | DRAWING:SLO95.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: BJH



LEGEND

- EXISTING RAILROADS
- EXISTING ROADS
- PROPERTY BOUNDARY
- P-31 SINGLE PIEZOMETERS
- P-1 PIEZOMETER COUPLET
- SG-3 STAFF GAGE
- 410 WATER TABLE ELEVATION CONTOUR(ft amsl) (DASHED LINES ARE INFERRED)
- 572.92 GROUNDWATER TABLE ELEVATION(ft amsl)

GERAGHTY & MILLER, INC.
Environmental Services

DEEP AQUIFER WATER TABLE ELEVATIONS, JUNE 13, 1996

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

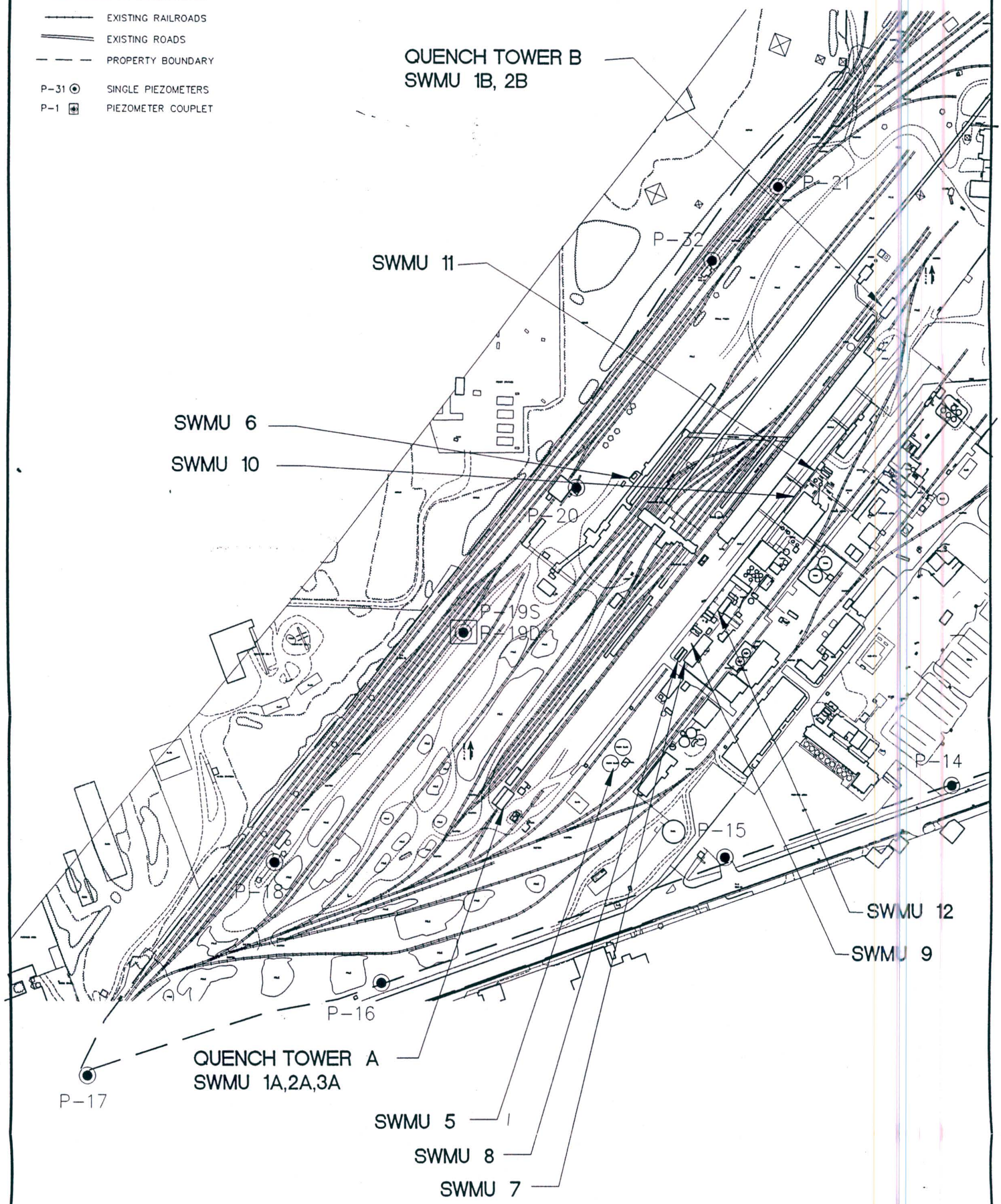
FIGURE
2-12

DWG DATE: 11/5/96 | PRJCT NO.: TF0320.013 | FILE NO.: SLOSS | DRAWING:SL095.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: BJH

DWG DATE: 3/96	PRJCT NO.: TF0320.013	FILE NO.: SLOSS	DRAWING: SL095-3	CHECKED: KT	APPROVED: PF	DRAFTER: JH

LEGEND

- EXISTING RAILROADS
- EXISTING ROADS
- PROPERTY BOUNDARY
- P-31 ⊙ SINGLE PIEZOMETERS
- P-1 ⊡ PIEZOMETER COUPLET



COKE MANUFACTURING PLANT SWMU's

1. Quench Towers and Sumps
2. Quench Tower Pump Basins
3. Old Quench Tower Settling Basins
5. Coal Tar Storage Area Drain System
6. Spill Area Around Diesel Tank
7. Coal Tar Collection Sump in No. 1 Pump House
8. Flushing Liquor Decanter
9. Flushing Liquor Decanter Sump
10. Coal Tar Decanter for No. 3 and No. 4 Coke Batteries
11. Coal Tar Decanter for Coke Battery No. 5
12. Coal Tar Decanter for No. 1 and No. 2 Coke Batteries

N

0' 150 300
SCALE: 1" = 300'

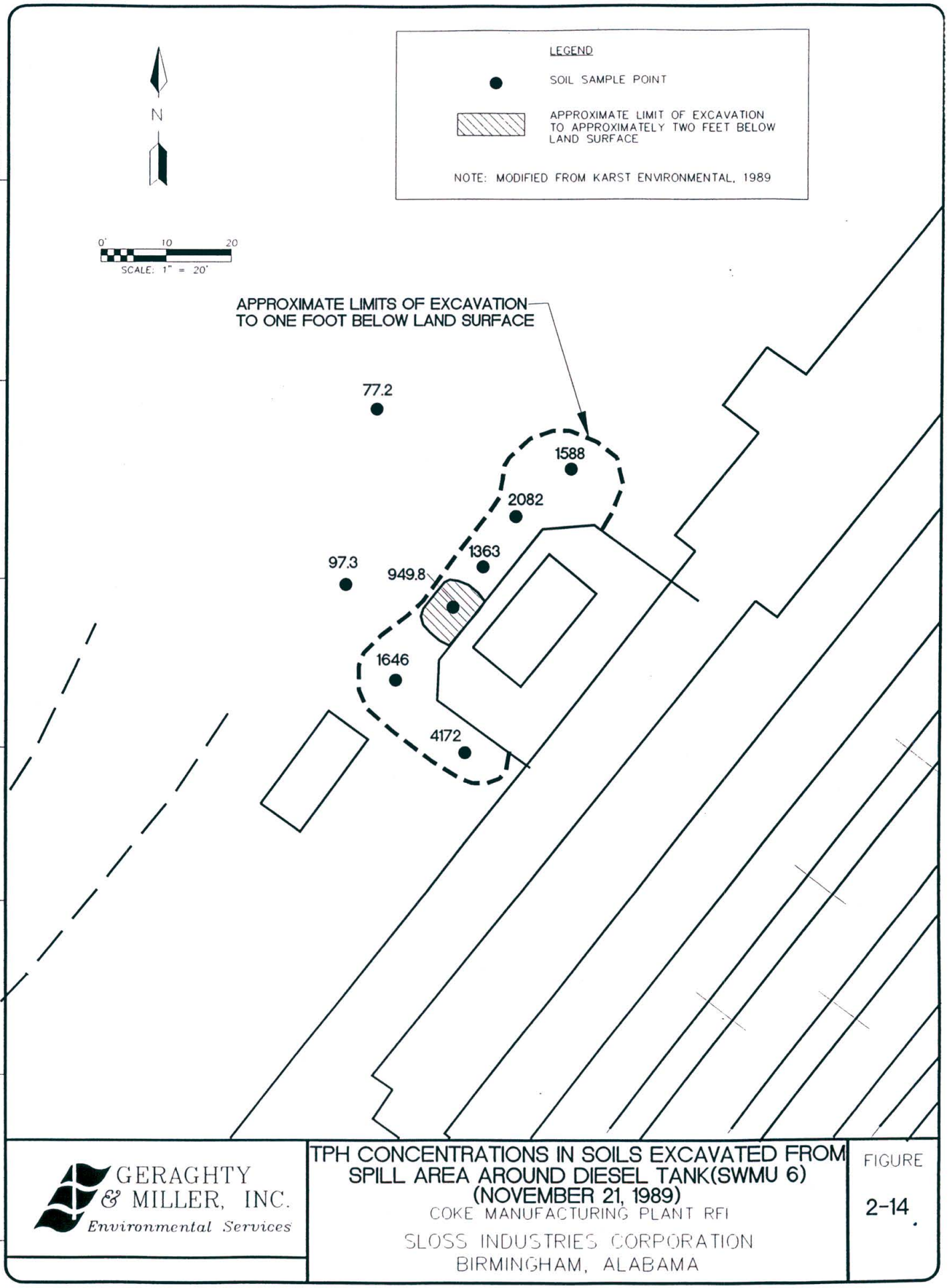
GERAGHTY & MILLER, INC.
Environmental Services

COKE MANUFACTURING PLANT SOLID WASTE MANAGEMENT UNITS

COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
2-13



DRAFTER: BJH | APPROVED: PF | CHECKED: JH | DRAWING: SLO-S5.DWG | FILE NO.: SLOSS | PROJECT NO.: TF0320.013 | DWG DATE: 10/16/96

GERAGHTY & MILLER, INC.
Environmental Services

TPH CONCENTRATIONS IN SOILS EXCAVATED FROM SPILL AREA AROUND DIESEL TANK(SWMU 6) (NOVEMBER 21, 1989)

COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

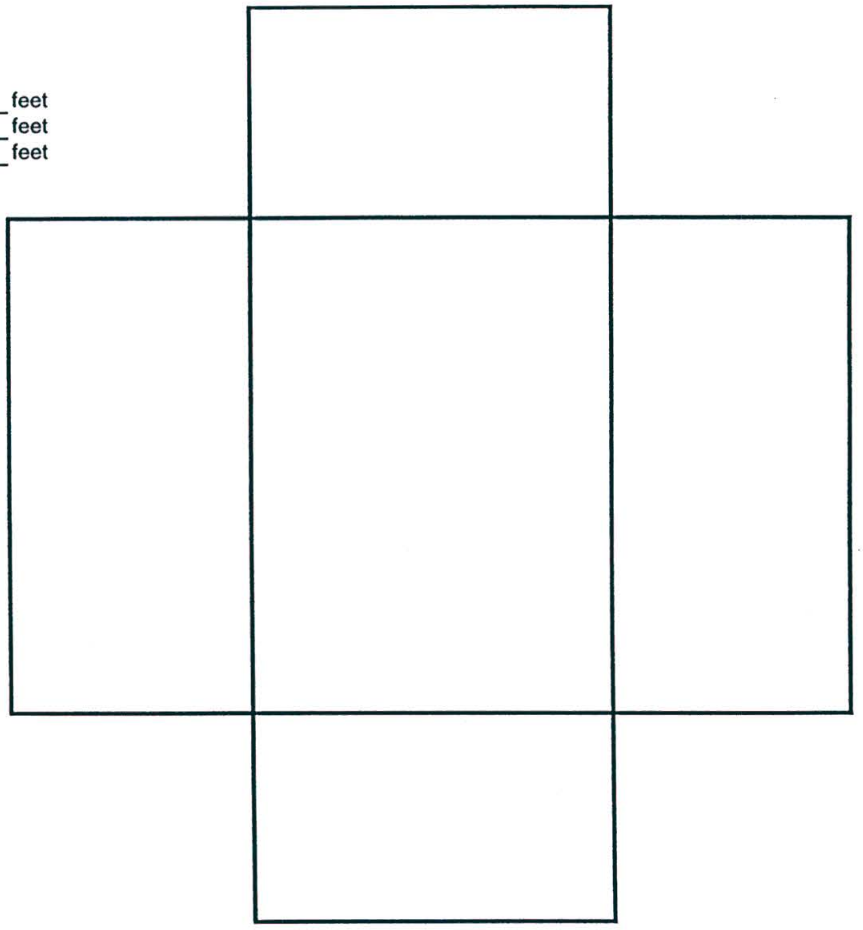
FIGURE
2-14

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a heidemij company

SUMP SURFACE DRAWING

Date: _____
Client: Sloss Industries
Project No.: TF0320.014
Location: Birmingham, Alabama
Sump: _____

Sump Length: _____ feet
Sump Width: _____ feet
Sump Depth : _____ feet



Observations:

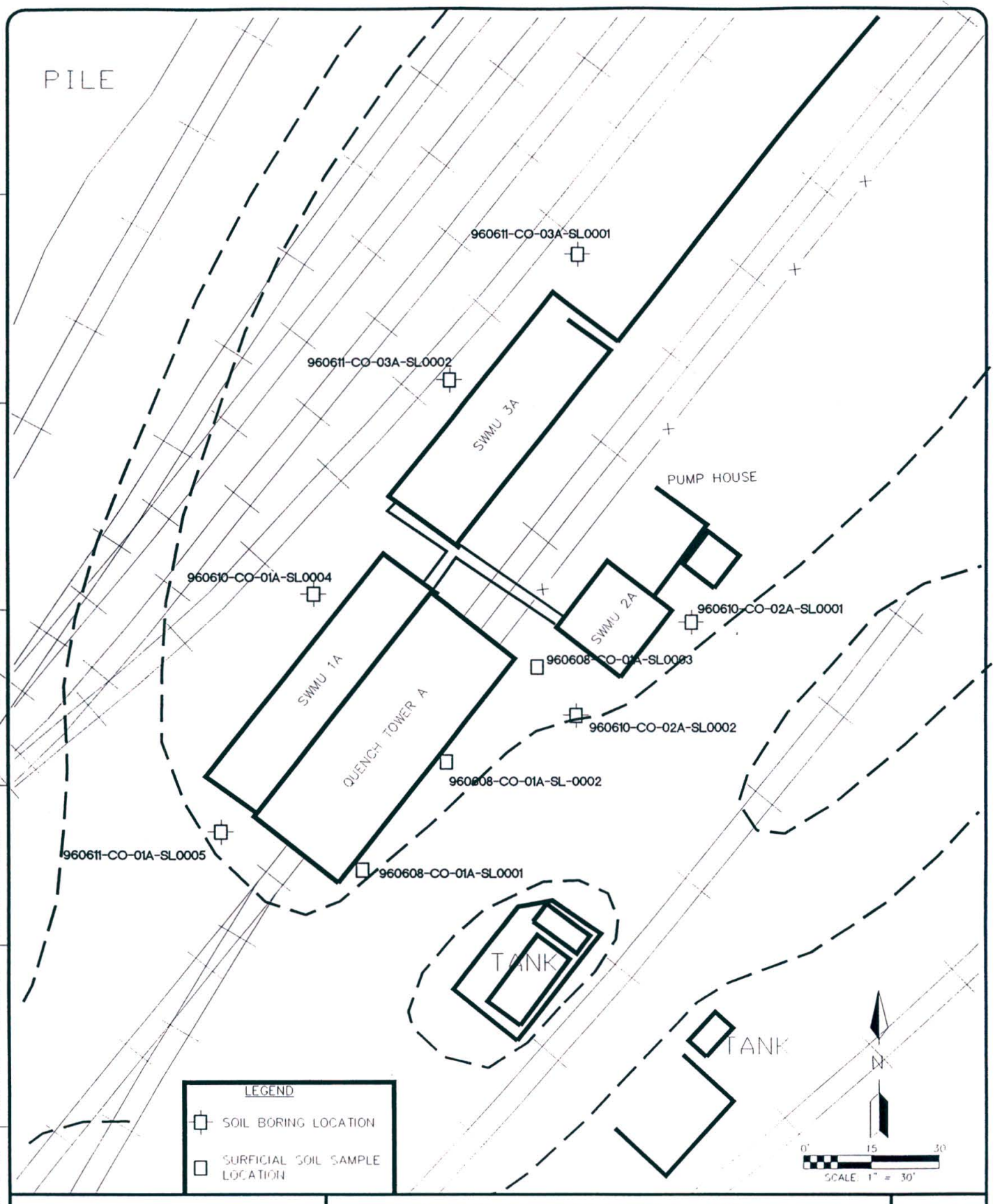
_____
_____
_____
_____
_____
_____

GERAGHTY & MILLER, INC.
Environmental Services

SUMP SURFACE DRAWING FORM

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
3-1



DWG DATE: 10 16 96 | PROJCT NO.: tf0318.001 | FILE NO.: SLOSS | DRAWING: SL095-3.DWG | CHECKED: KT | APPROVED: FF | DRAFTER: BJH

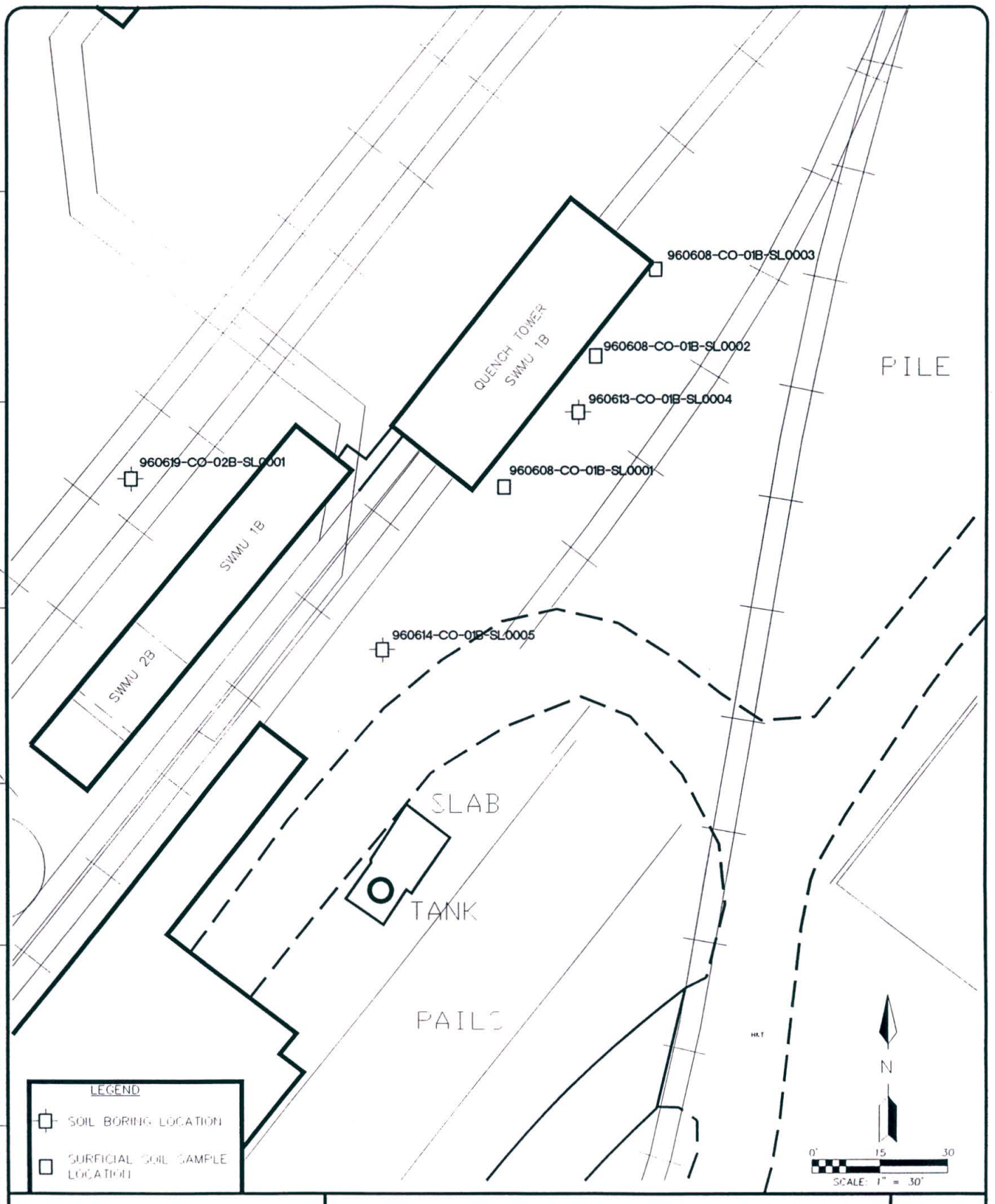
GERAGHTY & MILLER, INC.
Environmental Services

QUENCH TOWER STATION A, SWMUs 1A, 2A, AND 3A SOIL BORING LOCATION MAP

COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
3-2



DRAFTER: BJH | APPROVED: PF | CHECKED: KT | DRAWING: SL095-3.DWG | FILE NO.: SLOSS | PROJECT NO.: tf0318.001 | DWG DATE: 10 16 96

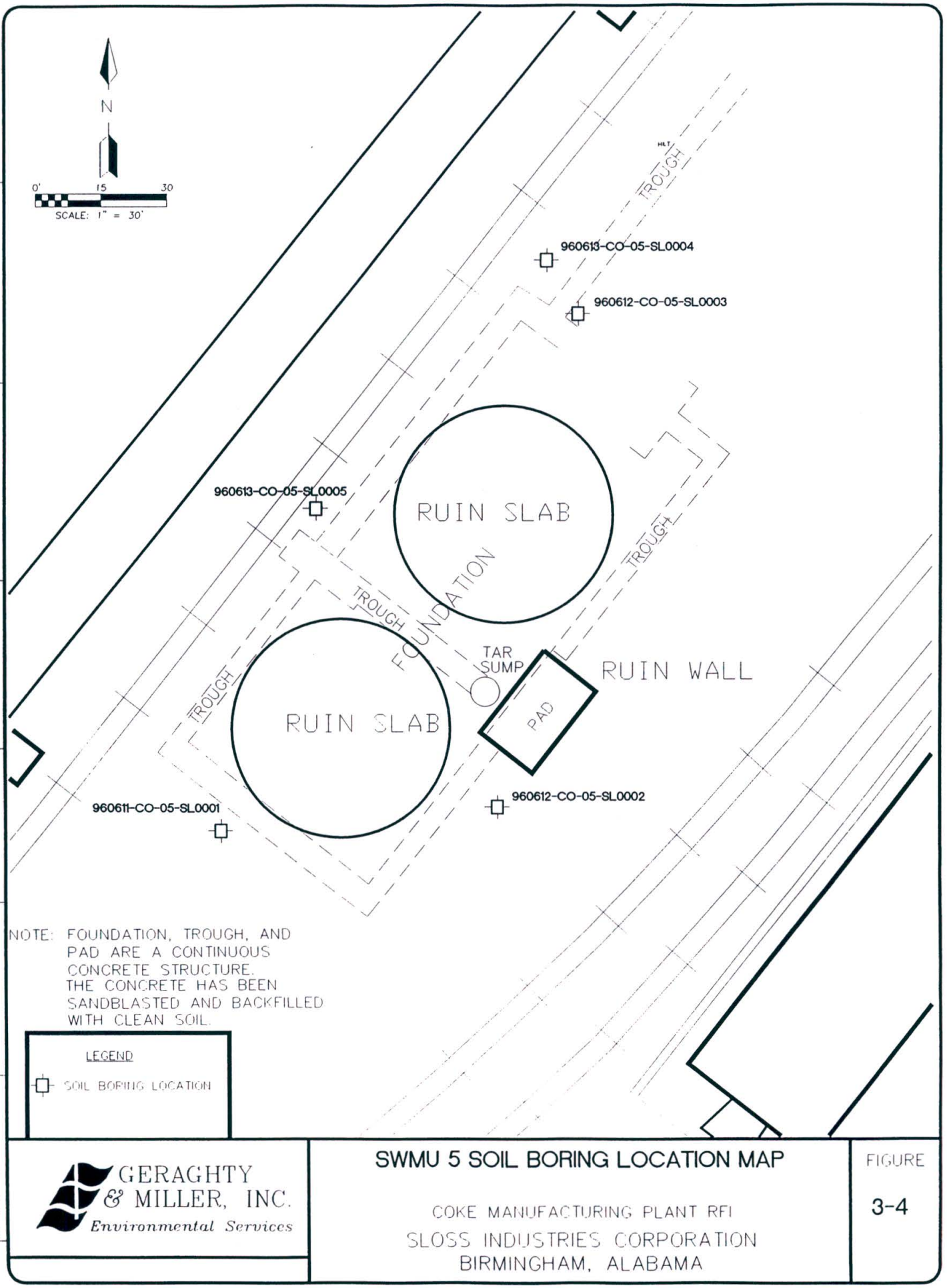
GERAGHTY & MILLER, INC.
Environmental Services

QUENCH TOWER STATION B, SWMUs 1B AND 2B SOIL BORING LOCATION MAP

COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE 3-3



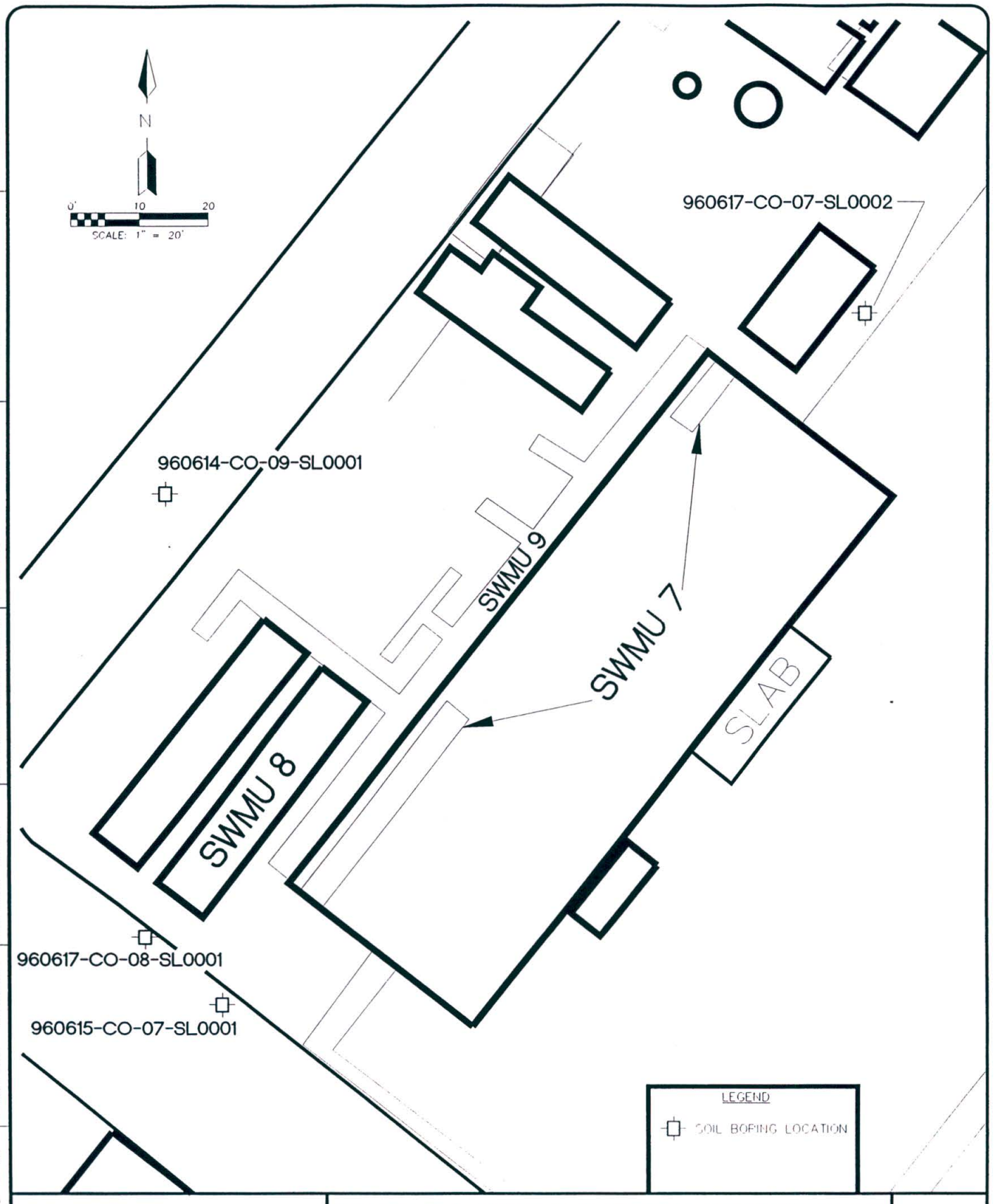
DWG DATE: 10 15 98 | PROJECT NO.: tf0318.001 | FILE NO.: SLOSS | DRAWING: SL095-3.DWG | CHECKED: KT | APPROVED: PF | DRAFTED: EJH

GERAGHTY & MILLER, INC.
Environmental Services

SWMU 5 SOIL BORING LOCATION MAP

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
3-4



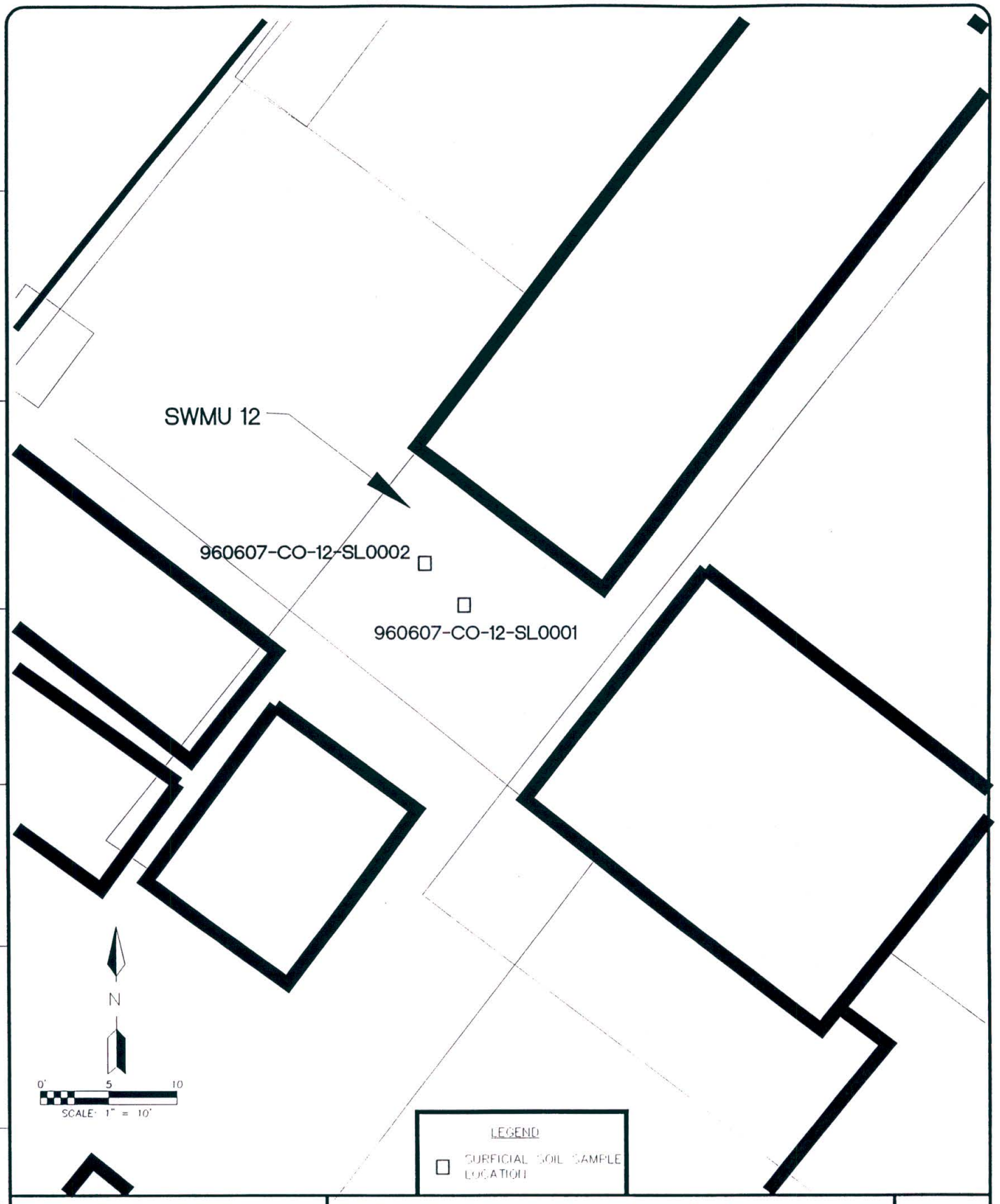
DWG DATE: 10 12 96 | PRJCT NO.: 110318.001 | FILE NO.: SLOSS | DRAWING: SL095-3.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: BJH

GERAGHTY & MILLER, INC.
Environmental Services

SWMUs 7, 8 AND 9 SOIL BORING LOCATION MAP

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
3-5



GERAGHTY & MILLER, INC.
Environmental Services

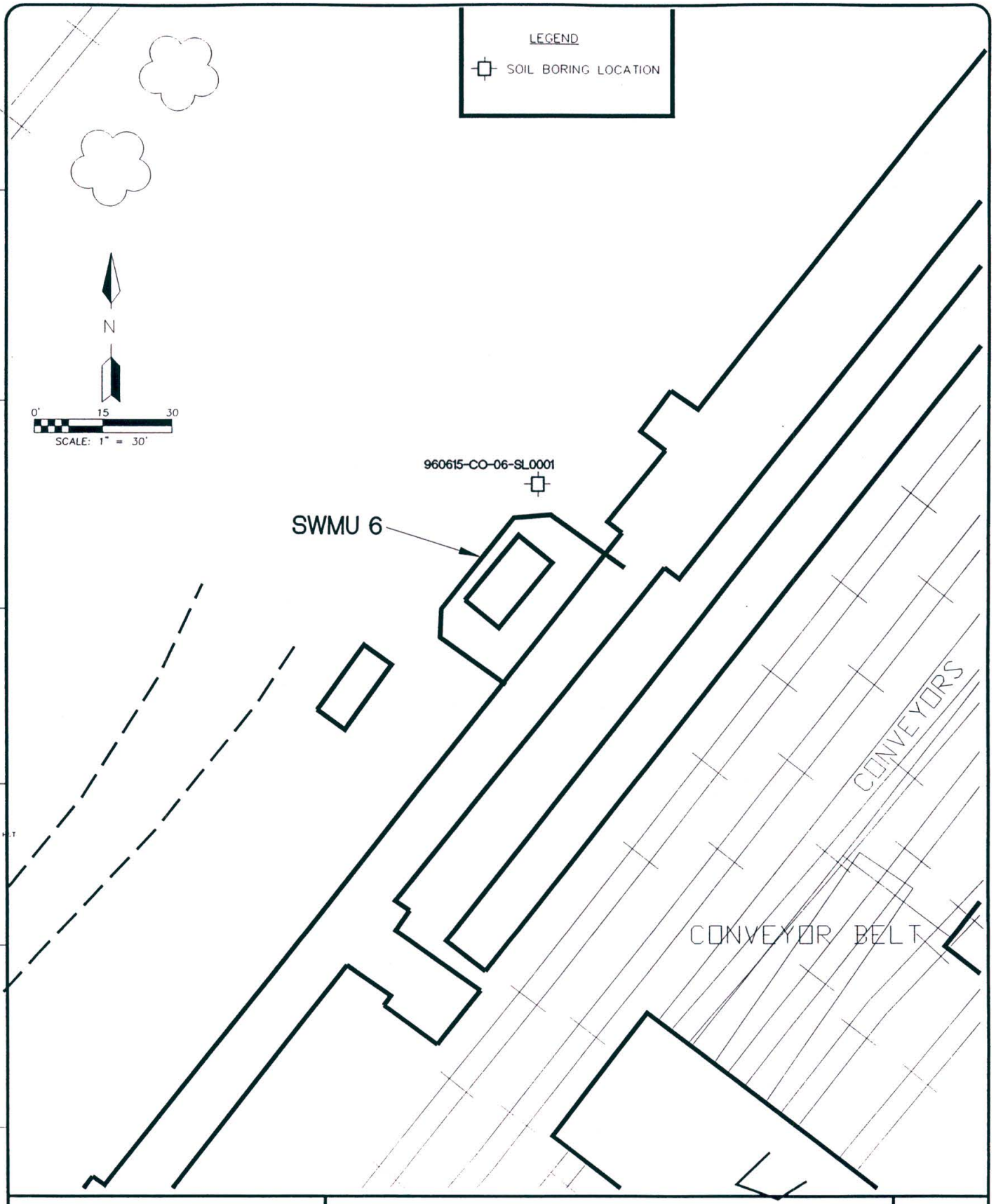
SWMU 12 SURFICIAL SOIL SAMPLING LOCATION MAP

COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE 3-6

DRAFTER: BJH | APPROVED: PF | CHECKED: KT | DRAWING: SL095-3.DWG | FILE NO.: SLOSS | PRJCT NO.: tf0318.001 | DWG DATE: 10 16 96



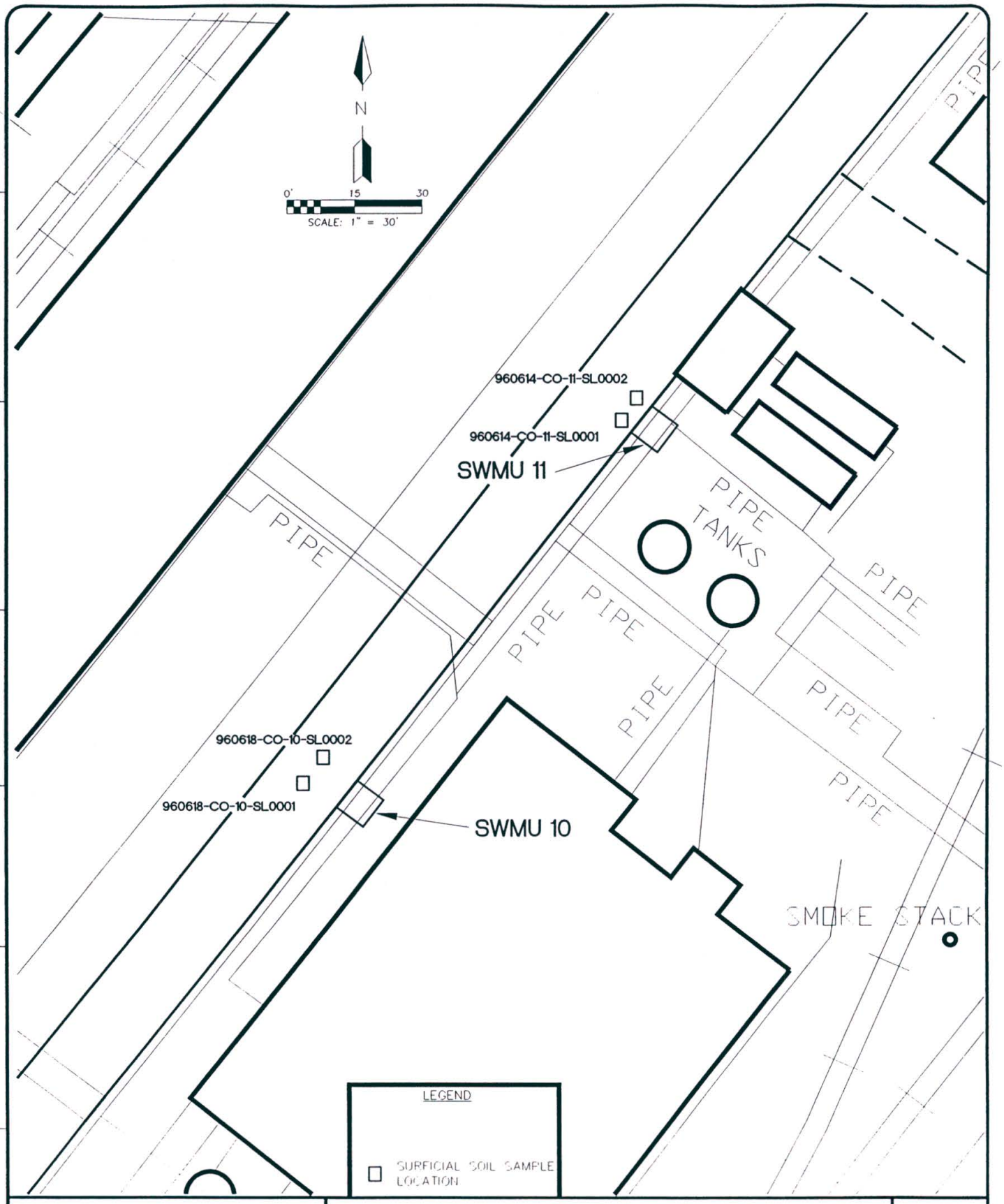
DRAFTER: BJH | APPROVED: PF | CHECKED: KT | DRAWING: SL095-3.DWG | FILE NO.: SLOSS | PROJCT NO.: tf0318.001 | DWG DATE: 10 16 96

GERAGHTY & MILLER, INC.
Environmental Services

SWMU 6 SOIL BORING LOCATION MAP

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
3-7



DRAFTER: BJH | APPROVED: PF | CHECKED: KT | DRAWING: SL095-3.DWG | FILE NO.: SLOSS | PROJCT NO.: 10318.001 | DWG DATE: 10 15 96

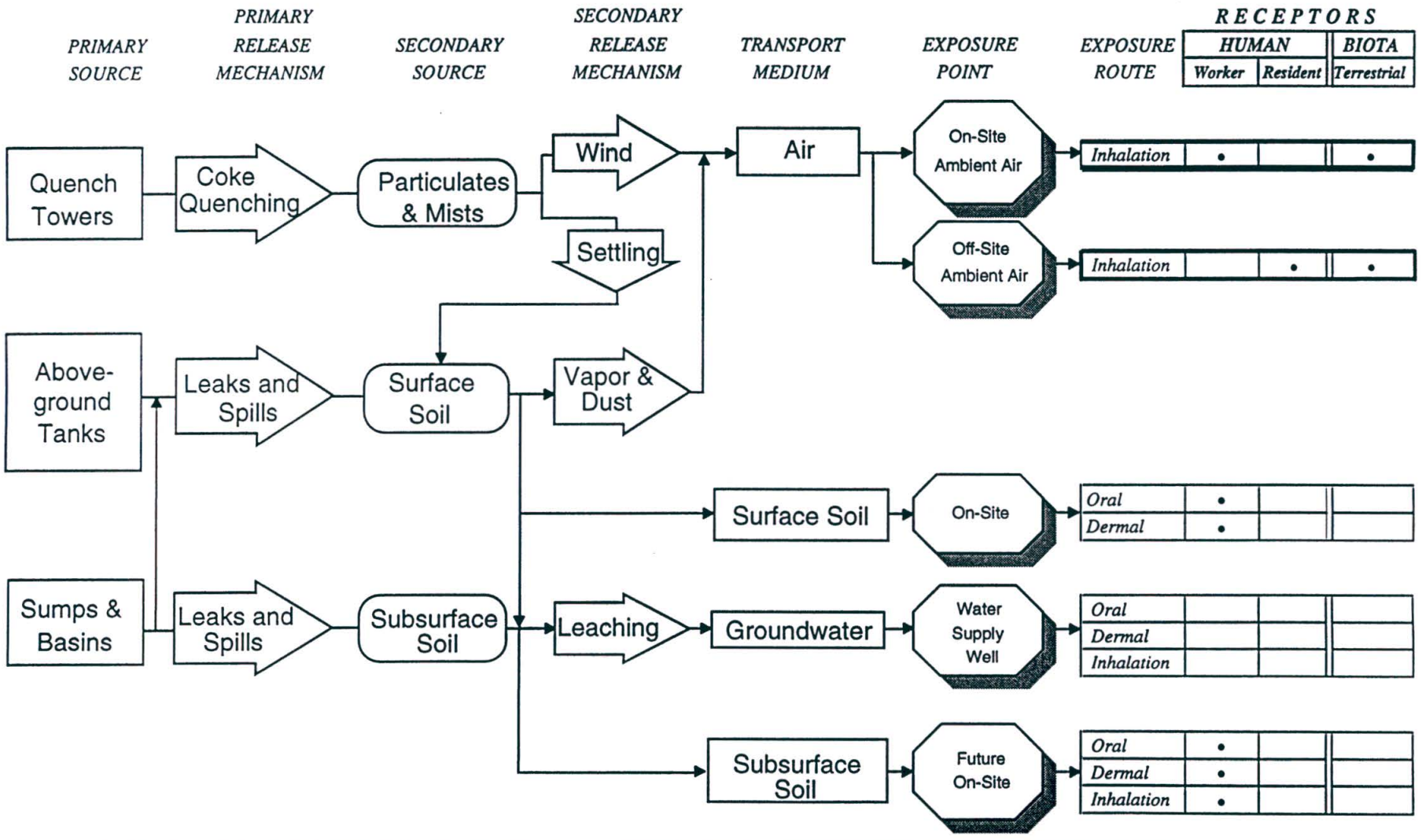
GERAGHTY & MILLER, INC.
Environmental Services

SWMU 10 AND 11 SURFICIAL SOIL SAMPLING LOCATION MAP

COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

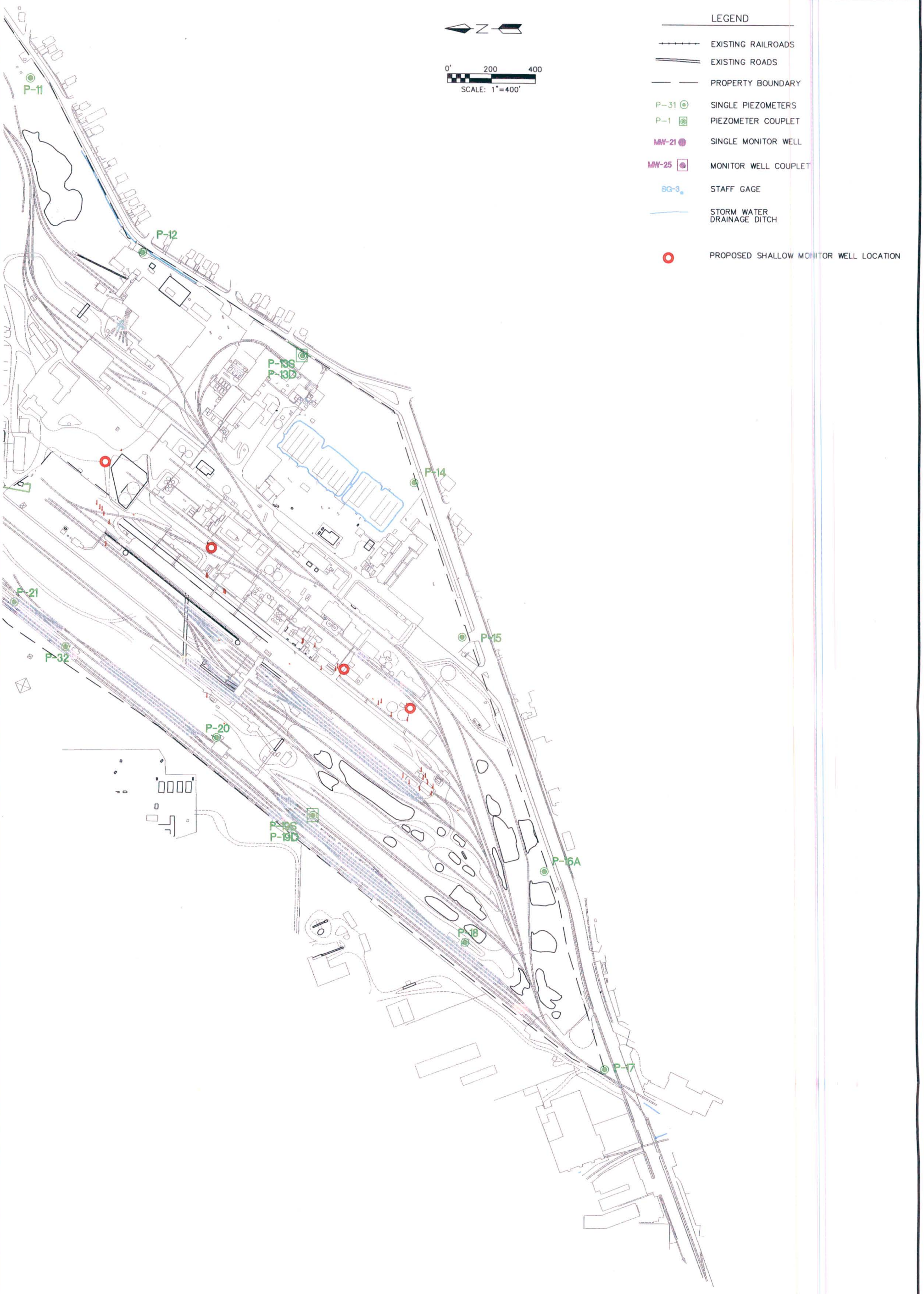
FIGURE
3-8



GERAGHTY & MILLER, INC.
Environment and Infrastructure
a heidemij company

Conceptual Site Exposure Model
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Figure
5-1



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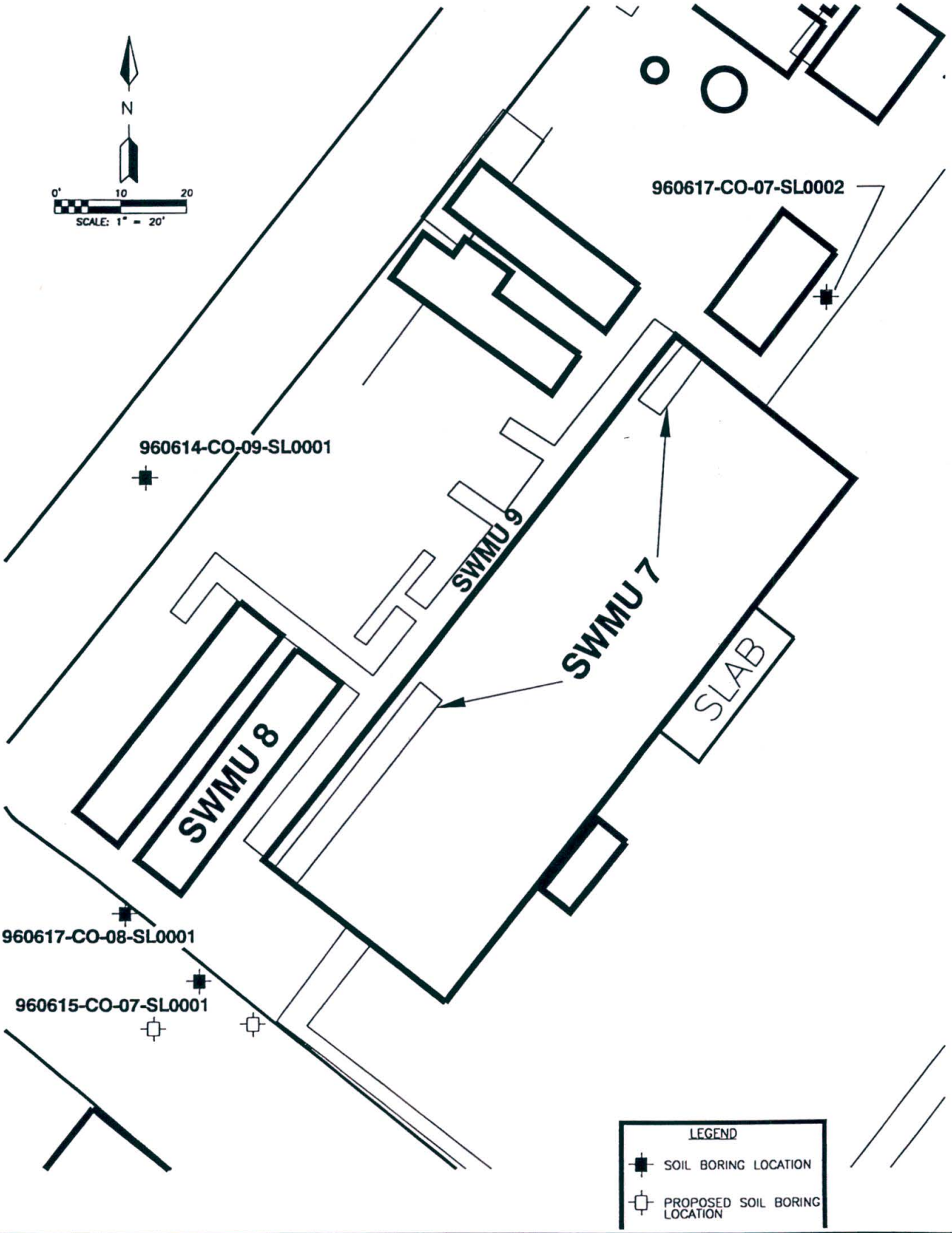
14497 North Dale Mabry Hwy., Suite 115
Tampa, Florida 33618
Tel: 813/961-1921 Fax: 813/961-2599

DATE 11/27/00	PROJECT MANAGER PF	PROJECT OFFICER PF
DRAWN BJH	LEAD DESIGN PROF. KT	CHECKED KT
CADD FILE NAME SL-CMP-RFI.DWG	PROJECT NUMBER TF000320.0016	

PROPOSED SHALLOW AQUIFER MONITOR WELL LOCATIONS
COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE NUMBER
6-1



DWG DATE: 7/7/99 | PRJCT NO.: 10318.001 | DRAWING: SL095-3.DWG | FILE NO.: SLOSS | CHECKED: KT | APPROVED: PF | DRAFTER: BJH

ARCADIS GERAGHTY & MILLER

14497 North Dale Mabry Hwy., Suite 115
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PROPOSED SOIL BORING LOCATION MAP FOR SWMU 7

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE

6-2

TABLE 1-1
Summary of SWMUs
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SWMU No.	Name	Description	RFA Recommendation
Coke Manufacturing Plant SWMUs			
1	Quench Towers and Sump	Concrete tower and sump	FA
2	Quench Tower Pump Basins	Inground concrete tank	FA
3	Old Quench Tower Settling Basins	Inground concrete tank	FA
5	Coal Tar Storage Area Drain System	Inground concrete trough	FA
6	Spill Area Around Diesel Tank	Aboveground Tank	FA
7	Coal Tar Collection Sump in No. 1 Pump House	Concrete sump	FA
8	Flushing Liquor Decanter	Aboveground tank	FA
9	Flushing Liquor Decanter Sump	Concrete sump	FA
10	Coal Tar Decanter for No. 3 and No. 4 Coke Batteries	Aboveground tank	FA
11	Coal Tar Decanter for No. 5 Coke Battery	Aboveground tank	FA
12	Coal Tar Decanter for No. 1 and No. 2 Coke Batteries	Aboveground steel tank	FA
Land Disposal Area SWMUs			
23	Biological Sludge Disposal Area	Land Disposal Area	FA
24	Blast Furnace Emission Control Sludge Waste Pile	Land Disposal Area	FA
38	Landfill	Land Disposal Area	FA
39	Blast Furnace Emission Control Sludge Waste Pile Near Landfill	Land Disposal Area	FA
Biological Treatment Facility (BTF) and Sewers SWMUs			
4	BTF Sewer	Inground sewer line	FA
13	BTF Equalization Basin	Surface impoundment	FA
14	BTF Neutralization Basin	Inground concrete tank	NFA
15	BTF Primary Clarifier	Inground concrete tank	NFA
16	BTF Aeration Basin	Inground concrete tank	NFA
17	BTF Secondary Clarifier	Inground concrete tank	NFA
18	BTF Thickener	Inground concrete tank	NFA
19	BTF Digester	Inground concrete tank	NFA
20	Dewatering Machine	Filter press	NFA
21	BTF Emergency Basin	Surface impoundment	FA
22	Polishing Pond	Surface impoundment	FA
25	Storm-Water Runoff Sewer	Inground sewer line	FA
37	BTF Sewer Tar Trap	Inground concrete basin	FA

TABLE 1-1
Summary of SWMUs
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SWMU No.	Name	Description	RFA Recommendation
Chemical Manufacturing Plant SWMUs			
26	Chemical Manufacturing Plant Main Process Building Floor Drain	Tile-lined trough	FA
27	TSA 94 Building Drain Floor	Tile-lined trough	FA
28	Sulfonation Building Floor Drain	Stainless Steel trough	NFA
29	Chemical Product Tank Containment Area	Concrete containment area	FA
30	Centrifuge Wastewater Tank	Aboveground Steel Tank	NFA
31	Monohydrate Building Floor Drain and Sump	Concrete drain and sump	FA
32	BSC 94 Drum Storage Area	Plastic drums	NFA
33	BSC Plant Drum Storage Area	Plastic drums	NFA
34	BSC Wastewater Neutralization System	Concrete containment	NFA
35	Old Waste Pile at Mineral Wool Plant	Land Disposal Area	NFA
36	Maintenance Shop Used Oil Tank	Aboveground tank	FA

FA Further Action.
NFA No Further Action.

TABLE 2-1
Summary of Constituents Detected in Background Soil Samples
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC		950615-FW-00-SL0001(0-2)			950615-FW-00-SL0001(8-10)			950615-FW-00-SL0001(14-16)			950615-FW-00-SL0002(0-2)	
SAMPLE DATE	Ingestion		06/15/95			06/15/95			06/15/95			06/15/95	
MATRIX	Soil		SOIL			SOIL			SOIL			SOIL	
SL LOG NUMBER	Residential [1]		T511787*1			T511787*2			T511787*3			T511787*4	
Volatile Organic Compounds (ug/kg dw):													
Methylene chloride (Dichloromethane)	85,000	<	5.8			3.6	J	<	7.2			4.3	J
Tetrachloroethene	12,000	<	5.8		<	5.8		<	7.2			0.58	J
Toluene	16,000,000		5.8	U		1.1	J		1.0	J		6.2	U
1,1,2-Trichloroethane	11,000	<	5.8		<	5.8		<	7.2			0.67	J
Trichloroethene	58,000	<	5.8		<	5.8		<	7.2		<	6.2	
Semivolatile Organics (ug/kg dw):													
Benzo(a)anthracene	870		33	J	<	430		<	500		<	410	
Benzo(b)fluoranthene	870		65	J	<	430		<	500			66	J
Benzo(k)fluoranthene	8,700	<	390		<	430		<	500		<	410	
Benzo(a)pyrene	87		40	J	<	430		<	500		<	410	
bis(2-Ethylhexyl)phthalate	46,000	<	390		<	430		<	500		<	410	
Chrysene	87,000		43	J	<	430		<	500		<	410	
Di-n-butylphthalate	7,800,000	<	390		<	430		<	500		<	410	
Di-n-octylphthalate	1,600,000	<	390		<	430		<	500		<	410	
Fluoranthene	3,100,000		58	J	<	430		<	500			61	J
Naphthalene	1,600,000		44	J	<	430		<	500			48	J
Phenanthrene	NS		30	J	<	430		<	500		<	410	
Pyrene	2,300,000		52	J	<	430		<	500		<	410	
Metals (mg/kg dw):													
Arsenic	0.43 [2]		11			7.2			4.3			16	
Barium	5,500		44			85			100			51	
Beryllium	160		0.69			1.8			2.2			0.87	
Chromium	230 [3]		16			25			27			39	
Copper	3,100		8.2			18			32			6.7	
Lead	400		23			8.7			9.7			20	
Nickel	1,600		4.7			22			40			5.5	
Thallium	5.5	<	1			1.3		<	1			1.1	
Zinc	23,000		67			28			71			38	
Mercury	7.8 [4]		0.038			0.039			0.056			0.034	
Percent Solids			85 %			78 %			67 %			82 %	

Footnotes on Page 6

TABLE 2-1
Summary of Constituents Detected in Background Soil Samples
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC	950615-FW-00-SL0002(8-10)		950615-FW-00-SL0002(12-14)		950615-FW-00-SL0003(0-2)		950615-FW-00-SL0003(6-8)	
SAMPLE DATE	Ingestion	06/15/95		06/15/95		06/15/95		06/15/95	
MATRIX	Soil	SOIL		SOIL		SOIL		SOIL	
SL LOG NUMBER	Residential [1]	T511787*5		T511787*6		T511787*7		T511787*8	
Volatile Organic Compounds (ug/kg dw):									
Methylene chloride (Dichloromethane)	85,000	< 6.1		5.5	J	2.8	J	< 6.6	
Tetrachloroethene	12,000	< 6.1		< 6.9		< 6.1		< 6.6	
Toluene	16,000,000	3.3	J	1.1	J	6.1	U	1.4	J
1,1,2-Trichloroethane	11,000	2.6	J	0.57	J	< 6.1		0.74	J
Trichloroethene	58,000	< 6.1		< 6.9		< 6.1		< 6.6	
Semivolatile Organics (ug/kg dw):									
Benzo(a)anthracene	870	< 460		< 480		< 410		< 460	
Benzo(b)fluoranthene	870	< 460		< 480		< 410		< 460	
Benzo(k)fluoranthene	8,700	< 460		< 480		< 410		< 460	
Benzo(a)pyrene	87	< 460		< 480		< 410		< 460	
bis(2-Ethylhexyl)phthalate	46,000	< 460		< 480		31	J	< 460	
Chrysene	87,000	< 460		< 480		< 410		< 460	
Di-n-butylphthalate	7,800,000	< 460		< 480		< 410		< 460	
Di-n-octylphthalate	1,600,000	< 460		< 480		< 410		< 460	
Fluoranthene	3,100,000	< 460		< 480		< 410		< 460	
Naphthalene	1,600,000	< 460		< 480		< 410		< 460	
Phenanthrene	NS	< 460		< 480		< 410		< 460	
Pyrene	2,300,000	< 460		< 480		< 410		< 460	
Metals (mg/kg dw):									
Arsenic	0.43 [2]	6.6		5.7		14		9.7	
Barium	5,500	120		200		53		100	
Beryllium	160	1.7		2.5		0.51		1.8	
Chromium	230 [3]	32		43		20		33	
Copper	3,100	20		29		5.0		21	
Lead	400	9.3		10		11		17	
Nickel	1,600	36		47		5.5		25	
Thallium	5.5	< 1		1.1		< 1		< 1	
Zinc	23,000	52		68		16		29	
Mercury	7.8 [4]	0.049		0.065		0.055		0.035	
Percent Solids		72 %		69 %		82 %		73 %	

Footnotes on Page 6

TABLE 2-1
Summary of Constituents Detected in Background Soil Samples
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC	950615-FW-00-SL0003(10-12)		950615-FW-00-SL9003		950629-FW-00-SL0004(0-2)		950629-FW-00-SL0004(16-18)	
SAMPLE DATE	Ingestion	06/15/95		06/15/95		06/29/95		06/29/95	
MATRIX	Soil	SOIL		SOIL		SOIL		SOIL	
SL LOG NUMBER	Residential [1]	T511787*9		T511787*10		T511949*4		T511949*5	
Volatile Organic Compounds (ug/kg dw):									
Methylene chloride (Dichloromethane)	85,000	< 7.4		< 6.1		< 5.7		6.0	
Tetrachloroethene	12,000	< 7.4		< 6.1		< 5.7		< 5.6	
Toluene	16,000,000	2	J	6.1	U	< 5.7		< 5.6	
1,1,2-Trichloroethane	11,000	0.86	J	< 6.1		< 5.7		< 5.6	
Trichloroethene	58,000	< 7.4		< 6.1		< 5.7		< 5.6	
Semivolatile Organics (ug/kg dw):									
Benzo(a)anthracene	870	< 490		< 410		< 400		< 380	
Benzo(b)fluoranthene	870	< 490		< 410		< 400		< 380	
Benzo(k)fluoranthene	8,700	< 490		< 410		< 400		< 380	
Benzo(a)pyrene	87	< 490		< 410		< 400		< 380	
bis(2-Ethylhexyl)phthalate	46,000	< 490		< 410		< 400		< 380	
Chrysene	87,000	< 490		< 410		< 400		< 380	
Di-n-butylphthalate	7,800,000	< 490		< 410		< 400		< 380	
Di-n-octylphthalate	1,600,000	< 490		16	J	32.0	J	< 380	
Fluoranthene	3,100,000	< 490		< 410		< 400		< 380	
Naphthalene	1,600,000	< 490		< 410		< 400		< 380	
Phenanthrene	NS	< 490		< 410		< 400		< 380	
Pyrene	2,300,000	< 490		< 410		< 400		< 380	
Metals (mg/kg dw):									
Arsenic	0.43 [2]	5.1		21		13		1.9	
Barium	5,500	95		50		28		21	
Beryllium	160	2.6		0.60		0.44		0.97	
Chromium	230 [3]	27		46		22		8.6	
Copper	3,100	22		5.9		8.1		7.8	
Lead	400	9.5		14		5.0		7.5	
Nickel	1,600	37		9.4		10		15	
Thallium	5.5	< 1		< 1		< 1.0		< 1.0	
Zinc	23,000	49		27		25		14	
Mercury	7.8 [4]	0.15		0.038		< 0.030		< 0.030	
Percent Solids		**68 %**		**82 %**		**NA**		**NA**	

Footnotes on Page 6

TABLE 2-1
Summary of Constituents Detected in Background Soil Samples
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC	950629-FW-00-SL0004(36-38)		950719-FW-00-SL0005 (0-2)		950719-FW-00-SL0005 (2-4)		950719-FW-00-SL0005 (4-6)	
SAMPLE DATE	Ingestion	06/29/95		07/19/95		07/19/95		07/19/95	
MATRIX	Soil	WATER		SOIL		SOIL		SOIL	
SL LOG NUMBER	Residential [1]	T511949*1		T512142*3		T512142*4		T512142*5	
Volatile Organic Compounds (ug/kg dw):									
Methylene chloride (Dichloromethane)	85,000	< 5.8		< 5.6		< 5.2		< 5.8	
Tetrachloroethene	12,000	< 5.8		3.2	J	5.2	U	5.8	U
Toluene	16,000,000	< 5.8		< 5.6		< 5.2		< 5.8	
1,1,2-Trichloroethane	11,000	< 5.8		< 5.6		< 5.2		< 5.8	
Trichloroethene	58,000	< 5.8		12		2.6	J	8.0	
Semivolatile Organics (ug/kg dw):									
Benzo(a)anthracene	870	< 400		< 360		< 360		< 350	
Benzo(b)fluoranthene	870	< 400		< 360		< 360		< 350	
Benzo(k)fluoranthene	8,700	< 400		< 360		< 360		< 350	
Benzo(a)pyrene	87	< 400		< 360		< 360		< 350	
bis(2-Ethylhexyl)phthalate	46,000	< 400		< 360		< 360		< 350	
Chrysene	87,000	< 400		< 360		< 360		< 350	
Di-n-butylphthalate	7,800,000	< 400		< 360		72	J	< 350	
Di-n-octylphthalate	1,600,000	< 400		< 360		18	J	< 350	
Fluoranthene	3,100,000	< 400		< 360		< 360		< 350	
Naphthalene	1,600,000	< 400		< 360		< 360		< 350	
Phenanthrene	NS	< 400		< 360		< 360		< 350	
Pyrene	2,300,000	< 400		< 360		< 360		< 350	
Metals (mg/kg dw):									
Arsenic	0.43 [2]	3.8		6.0		3.1		5.5	
Barium	5,500	43		58		28		15	
Beryllium	160	1.4		0.52		0.53		< 0.40	
Chromium	230 [3]	17		37		32		18	
Copper	3,100	10		12		11		6.1	
Lead	400	9.7		15		11		8.0	
Nickel	1,600	28		4.7		< 4.0		< 4.0	
Thallium	5.5	< 1.0		< 1.0		< 1.0		< 1.0	
Zinc	23,000	70		29		40		11	
Mercury	7.8 [4]	< 0.030		0.035		< 0.030		< 0.030	
Percent Solids		NA		92 %		92 %		94 %	

Footnotes on Page 6

TABLE 2-1
Summary of Constituents Detected in Background Soil Samples
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC		950719-FW-00-SL0006 (0-2)		950719-FW-00-SL0006 (10-12)		950719-FW-00-SL0006 (20-22)	
SAMPLE DATE	Ingestion		07/19/95		07/19/95		07/19/95	
MATRIX	Soil		SOIL		SOIL		SOIL	
SL LOG NUMBER	Residential [1/]		T512142*6		T512142*7		T512142*8	
Volatile Organic Compounds (ug/kg dw):								
Methylene chloride (Dichloromethane)	85,000		1.9	J	1.4	J	< 6.1	
Tetrachloroethene	12,000		20		< 5.7		< 6.1	
Toluene	16,000,000		7.4		< 5.7		< 6.1	
1,1,2-Trichloroethane	11,000	<	6.1		< 5.7		< 6.1	
Trichloroethene	58,000		82		< 5.7		6.1	U
Semivolatile Organics (ug/kg dw):								
Benzo(a)anthracene	870	<	370		< 390		< 370	
Benzo(b)fluoranthene	870	<	370		< 390		< 370	
Benzo(k)fluoranthene	8,700	<	370		< 390		< 370	
Benzo(a)pyrene	87	<	370		< 390		< 370	
bis(2-Ethylhexyl)phthalate	46,000	<	370		< 390		< 370	
Chrysene	87,000	<	370		< 390		< 370	
Di-n-butylphthalate	7,800,000	<	370		< 390		< 370	
Di-n-octylphthalate	1,600,000		38	J	180	J	76	J
Fluoranthene	3,100,000	<	370		< 370		< 370	
Naphthalene	1,600,000	<	370		< 390		< 370	
Phenanthrene	NS	<	370		< 390		< 370	
Pyrene	2,300,000	<	370		< 390		< 370	
Metals (mg/kg dw):								
Arsenic	0.43 [2/]		7.6		7.9		14	
Barium	5,500		72		45		14	
Beryllium	160		0.58		< 0.40		< 0.40	
Chromium	230 [3/]		30		36		13	
Copper	3,100		9.9		10		9.0	
Lead	400		10		14		11	
Nickel	1,600		15		7.8		< 4.0	
Thallium	5.5	<	1.0		< 1.0		< 1.0	
Zinc	23,000		45		21		8.6	
Mercury	7.8 [4/]		0.040		< 0.030		< 0.030	
Percent Solids			89 %		86 %		90 %	

Footnotes on Page 6

TABLE 2-1
Summary of Constituents Detected in Background Soil Samples
Coke Manufacturing Plant RFI
Sloss Industries Corporation

FOOTNOTES:

NA Not Available.

NS No Standard.

J Positive results has been classified as qualitative during data validation or values are greater than the Method Detection Limit (MDL) but less than the Contract Required Quantitation Limit (CRQL) and Contract Required Detection Limit (CRDL). A B after the J (JB) indicates analyte was in a laboratory blank.

U Classified as nondetected.

1/ Source: USEPA Region III Risk-Based Concentrations (RBC), April 13, 2000.

2/ RBC for arsenic as a carcinogen.

3/ Chromium VI.

4/ RBC for methylmercury.

☐ Concentration Exceeds USEPA Residential RBC.

TABLE 2-2
Summary of Piezometer Construction Details and
Water Table Elevations for June 13, 1996
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Piezometer Identification	Top of Casing (ft amsl)	Depth to Bottom (ft btoc)	Screened Interval (ft bls)	Depth to Water 6/13/96 (ft btoc)	Water Table Elevation 6/13/96 (ft amsl)
P-1S	522.76	24.0	11.0 - 21.0	16.75	506.01
P-1D	523.02	47.0	34.5 - 44.5	17.09	505.93
P-2	531.53	38.9	25.5 - 35.5	13.79	517.74
P-3	532.98	39.1	22.0 - 32.0	11.13	521.85
P-4	532.40	40.25	27.5 - 37.5	11.12	521.28
P-5	532.43	139.0	126.5 - 136.5	0	532.43
P-6S	545.98	36.4	24.0 - 34.0	6.31	539.67
P-6D	546.10	182.0	168.0 - 178.0	5.71	540.39
P-7	569.43	49.9	37.0 - 47.0	17.03	552.40
P-8	568.46	35.7	23.0 - 33.0	8.55	559.91
P-9	568.22	162.0	150.5 - 160.5	163.12	405.10
P-10	569.68	35.15	22.5 - 32.5	13.05	556.63
P-11	569.95	30.0	17.0 - 27.0	6.26	563.69
P-12	579.42	29.0	16.5 - 26.5	6.06	573.36
P-13S	581.41	28.5	16.0 - 26.0	9.16	572.25
P-13D	581.37	172.0	159.5 - 169.5	159.85	421.52
P-14	583.37	78.0	65.5 - 75.5	8.10	575.27
P-15	581.69	28.0	15.5 - 25.5	6.01	575.68
P-16a	585.18	24.0	11.5 - 21.5	5.35	579.83
P-17	586.16	118.0	105.5 - 115.5	4.51	581.65
P-18	594.06	75.0	62.5 - 72.5	10.32	583.74
P-19S	591.41	30.0	17.5 - 27.5	4.37	587.04
P-19D	591.19	60.0	47.5 - 57.5	4.23	586.96
P-20	585.20	200.5	188.3 - 198.3	141.75	443.45
P-21	575.75	168.0	155.5 - 165.5	159.04	416.71
P-22	570.82	51.0	38.5 - 48.5	10.80	560.02
P-23	564.67	51.0	38.5 - 48.5	16.82	547.85
P-24S	564.68	37.0	24.5 - 34.5	19.96	544.72
P-24D	564.43	61.0	48.5 - 58.5	19.49	544.94
P-25	558.32	60.5	48.0 - 58,0	13.14	545.18
P-26	554.09	39.4	27.0 - 37.0	14.45	539.64
P-27	549.58	143.0	130.5 - 140.5	124.86	424.72
P-28S	559.67	48.8	35.5 - 45.5	17.91	541.76
P-28D	559.63	70.1	56.3 - 66.3	17.16	542.47
P-29	594.99	76.5	63.3 - 73.3	12.65	582.34

TABLE 2-2
Summary of Piezometer Construction Details and
Water Table Elevations for June 13, 1996
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Piezometer Identification	Top of Casing (ft amsl)	Depth to Bottom (ft btoc)	Screened Interval (ft bls)	Depth to Water 6/13/96 (ft btoc)	Water Table Elevation 6/13/96 (ft amsl)
P-30	635.88	81.8	68.5 - 78.5	31.36	604.52
P-31	628.86	121.0	108.5 - 118.5	93.48	535.38
P-32	579.71	30.1	17.0 - 27.0	5.55	574.16
MW-5	532.05	18	8 - 18	9.18	522.87
SG-1	525.99	NA	NA	1.00	524.99
SG-2	516.39	NA	NA	1.25	515.14
SG-3	514.93	NA	NA	12.91	502.02
SG-4	528.51	NA	NA	1.00	527.51

ft bls = feet below land surface.

ft amsl = feet above mean sea level, referenced to the National Vertical Datum of 1929.

ft btoc = feet below Top of Casing.

NA = Not Applicable.

SG-1 = Staff Gage 1

TABLE 2-3
Summary of In-Situ Permeability Testing, August 1995
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Well	K (cm/sec) Slug In	K (cm/sec) Slug Out	i (ft/ft)	n	v (ft/min) Slug In	v (ft/min) Slug Out	v (ft/year) Slug In	v (ft/year) Slug Out
Conasauga Limestone								
P-2	8E-04	4E-04	0.025	0.20	2E-04	1E-04	1E+02	6E+01
P-3	2E-03	1E-03	0.025	0.20	4E-04	3E-04	2E+02	2E+02
P-4	1E-06	4E-08	0.025	0.01	6E-06	2E-07	3E+00	1E-01
MW-5	1E-03	9E-03	0.025	0.20	3E-04	2E-03	2E+02	1E+03
P-5	1E-03	1E-03	0.025	0.20	3E-04	4E-04	2E+02	2E+02
P-6S	2E-03	2E-03	0.025	0.20	4E-04	4E-04	2E+02	2E+02
P-6D	1E-07	2E-07	0.025	0.01	5E-07	1E-06	3E-01	6E-01
P-7	2E-04	2E-04	0.025	0.20	5E-05	4E-05	3E+01	2E+01
P-8	3E-03	4E-03	0.025	0.20	8E-04	1E-03	4E+02	6E+02
P-10	3E-03	3E-03	0.025	0.20	7E-04	7E-04	4E+02	3E+02
P-11	2E-04	2E-04	0.025	0.20	6E-05	5E-05	3E+01	2E+01
P-12	4E-05	8E-07	0.010	0.01	8E-05	2E-06	4E+01	9E-01
P-12 DUP	7E-07	7E-08	0.010	0.01	1E-06	1E-07	7E-01	7E-02
P-13S	7E-04	7E-04	0.010	0.20	7E-05	7E-05	4E+01	3E+01
P-14	1E-04	1E-04	0.010	0.20	1E-05	1E-05	8E+00	7E+00
P-15	4E-07	5E-07	0.010	0.01	8E-07	1E-06	4E-01	5E-01
P-16	7E-04	6E-04	0.010	0.20	7E-05	6E-05	4E+01	3E+01
P-17	4E-07	7E-07	0.010	0.01	7E-07	1E-06	4E-01	7E-01
P-18	5E-04	6E-04	0.010	0.20	5E-05	6E-05	2E+01	3E+01
P-19S	5E-03	3E-03	0.010	0.20	5E-04	3E-04	3E+02	2E+02
P-19D	6E-03	7E-03	0.010	0.20	5E-04	7E-04	3E+02	4E+02
P-20	7E-06	2E-04	0.010	0.01	1E-05	4E-04	8E+00	2E+02
P-22	8E-04	7E-04	0.025	0.20	2E-04	2E-04	1E+02	9E+01
P-23	8E-06	4E-06	0.025	0.01	4E-05	2E-05	2E+01	1E+01
P-24S	1E-02	1E-02	0.025	0.20	2E-03	2E-03	1E+03	1E+03
P-24D	5E-04	6E-04	0.025	0.20	1E-04	1E-04	6E+01	8E+01
P-25	1E-03	1E-03	0.025	0.20	3E-04	3E-04	1E+02	1E+02
P-26	7E-03	6E-03	0.025	0.20	2E-03	2E-03	9E+02	8E+02
P-28S	2E-04	1E-04	0.100	0.20	2E-04	1E-04	1E+02	7E+01
P-28D	1E-05	6E-06	0.100	0.20	1E-05	6E-06	8E+00	3E+00
P-32	3E-04	3E-04	0.025	0.20	9E-05	7E-05	4E+01	3E+01
Minimum	1E-07	4E-08					3E-01	7E-02
Maximum	1E-02	1E-02					1E+03	1E+03
Sand Mountain								
P-1S	1E-03	1E-03	0.025	0.20	3E-04	3E-04	2E+02	1E+02
P-1D	7E-03	5E-03	0.025	0.20	2E-03	1E-03	9E+02	6E+02
P-29	5E-05	2E-05	0.100	0.20	5E-05	2E-05	2E+01	1E+01
P-30	9E-05	6E-05	0.100	0.20	9E-05	6E-05	5E+01	3E+01
P-31	3E-03	2E-03	0.100	0.20	3E-03	2E-03	1E+03	1E+03
Minimum	5E-05	2E-05					2E+01	1E+01
Maximum	7E-03	5E-03					1E+03	1E+03

TABLE 3-1
Summary of Soil Samples Collected in June 1996
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SWMU	Location	Interval (ft bls)	Date Sampled	Surface Elevation (ft amsl)	Sample Elevation (ft amsl)	Notes:
SWMU 1A	960610-CO-01A-SL0004	2 - 4	6/10/96	587.80	583.80 - 585.80	
	960611-CO-01A-SL0005	2 - 4	6/11/96	585.81	581.81 - 583.81	
SWMU 2A	960610-CO-02A-SL0001	2 - 4	6/10/96	585.36	581.36 - 583.36	
		16 - 18	6/10/96		567.36 - 569.36	
	960610-CO-02A-SL0002	2 - 4	6/10/96	585.23	581.23 - 583.21	
SWMU 3A	960611-CO-03A-SL0001	6 - 8	6/11/96	590.56	582.56 - 584.56	
	960611-CO-03A-SL0002	8 - 10	6/11/96	590.64	580.64 - 582.64	
SWMU 1B	960613-CO-01B-SL0004	4 - 6	6/13/96	584.70	578.70 - 580.70	
		8 - 10	6/13/96		574.70 - 576.70	
		10 - 12	6/13/96			NA - only three samples required by workplan.
		12 - 14	6/13/96		570.70 - 572.70	
	960614-CO-01B-SL0005	6 - 8	6/14/96	584.78	576.78 - 578.78	
		9 - 11	6/14/96		573.78 - 575.78	
SWMU 2B	960619-CO-02B-SL0001	2.5 - 3	6/19/96	572.14	569.14 - 569.64	Installed at base of SWMU 1B/2B Sump *via* backhoe.
SWMU 5	960611-CO-05-SL0001	1 - 3	6/11/96	584.35	581.35 - 583.35	
		9 - 11	6/12/96		573.35 - 575.35	
		11 - 13	6/12/96		571.35 - 573.35	
	960612-CO-05-SL0002	1 - 3	6/12/96	583.99	580.99 - 582.99	
		11 - 13	6/12/96		570.99 - 572.99	
		15 - 17	6/12/96		566.99 - 568.99	
	960612-CO-05-SL0003	- -	6/12/96	584.26	NS	No samples collected due to installation of soil boring within backfilled sump.
	960613-CO-05-SL0004	1 - 3	6/13/96	584.36	581.36 - 583.36	
		7 - 9	6/13/96		575.36 - 577.36	
		9 - 11	6/13/96		573.36 - 575.36	
	960613-CO-05-SL0005	1 - 3	6/13/96	583.97	580.97 - 582.97	
		5 - 7	6/13/96		576.97 - 578.97	

See footnotes on page 2

TABLE 3-1
Summary of Soil Samples Collected in June 1996
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SWMU	Location	Interval (ft bls)	Date Sampled	Surface Elevation (ft amsl)	Sample Elevation (ft amsl)	Notes:
SWMU 6	960615-CO-06-SL0001	0 - 1	6/15/96	586.38	585.38 - 586.38	
		1 - 2	6/15/96		584.38 - 585.38	
		6 - 8	6/15/96		578.38 - 580.38	
		12 - 14	6/15/96		572.38 - 574.38	
SWMU 7	960615-CO-07-SL0001	4 - 6	6/15/96	584.52	578.52 - 580.52	
		6 - 8	6/15/96		576.52 - 578.52	
	960617-CO-07-SL0002	4 - 6	6/17/96	584.09	578.09 - 580.09	
		6 - 8	6/17/96		576.09 - 578.09	
SWMU 8	960617-CO-08-SL0001	2 - 4	6/17/96	584.57	580.57 - 582.57	
SWMU 9	960614-CO-09-SL0001	2 - 4	6/14/96	584.39	580.39 - 582.39	NA - Sample not below base of sump.
		4 - 6	6/14/96		578.39 - 580.39	
		6 - 8	6/14/96		576.39 - 578.39	
SWMU12	See Table 3.2					Collected as a surface sample only due to drill rig access problems.

Footnotes:
ft bls - feet below land surface.
ft amsl - feet above mean sea level, referenced to the National Vertical Datum of 1929.
NA - Sample not analyzed.
NS - not sampled.

TABLE 3-2
Summary of Surficial Soil Samples Collected in June 1996
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SWMU	Location	Interval (ft bls)	Date Sampled	Surface Elevation (ft amsl)	Notes:
SWMU 1A	960608-CO-01A-SL0001	0 - 0.1	6/8/96	584.83	Coke Breeze
	960608-CO-01A-SL0002	0 - 0.1	6/8/96	584.52	Coke Breeze
	960608-CO-01A-SL0003	0 - 0.1	6/8/96	584.83	Coke Breeze
SWMU 1B	960608-CO-01B-SL0001	0 - 0.1	6/8/96	584.59	Coke Breeze
	960608-CO-01B-SL0002	0 - 0.1	6/8/96	585.07	Coke Breeze
	960608-CO-01B-SL0003	0 - 0.1	6/8/96	585.08	Coke Breeze
SWMU 10	960606-CO-10-SL0001	0 - 1	6/6/96	NS	NA - Native Material Not Recovered With Hand Auger.
	960606-CO-10-SL0001	0 - 1	6/6/96	NS	NA - Native Material Not Recovered With Hand Auger.
	960618-CO-10-SL0001	2 - 4	6/18/96	584.64	Completed with Drill Rig
	960618-CO-10-SL0002	2 - 4	6/18/96	584.69	Completed with Drill Rig
SWMU 11	960614-CO-11-SL0001	2 - 4	6/14/96	584.38	Completed with Drill Rig
	960614-CO-11-SL0002	2 - 4	6/14/96	584.33	Completed with Drill Rig
SWMU12	960607-CO-12-SL0001	0.5 - 1.5	6/7/96	584.47	Completed with Hand Auger.
	960607-CO-12-SL0002	0.5 - 1.5	6/7/96	584.30	Completed with Hand Auger.

Footnotes:
ft bls - feet below land surface.
ft amsl - feet above mean sea level, referenced to the National Vertical Datum of 1929.
NS - not surveyed.
NA - Sample not analyzed.

TABLE 3-3
Results of Field Analysis for Quench Water
Samples Collected in June 1996
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Sample ID	Date/Time Collected	pH (std. units)	Temperature (°C)	Specific Conductivity (umhos/cm)	Comments
960607-CO-02A-PW0001	6/7/96, 1415	9.34	54.7	280	Light gray, slightly turbid with no odor. High temperature resulted in bubble formation in VOC vial upon cooling.
960605-CO-02B-PW0001	6/5/96, 1200	8.71	59.8	200	Light gray, slightly turbid with no odor. High temperature resulted in bubble formation in VOC vial upon cooling.

°C - Degrees Centigrade.
umhos/cm - micro mhos per centimeter.

Table 4-1
Summary of Site Background Soil Concentration Ranges
and EPA Risk Based Concentrations
Coke Manufacturing Plant RFI
Sloss Industries Corporation

ANALYTE	BACKGROUND CONCENTRATION RANGE	USEPA RBC Ingestion Soil Residential [1/]	USEPA RBC Ingestion Soil Industrial [1/]
Volatile Organic Compounds (ug/kg):			
1,1,2,2-Tetrachloroethane	ND	3,200	29,000
2-Hexanone	ND	3,100,000	82,000,000
Acetone	ND	7,800,000	200,000,000
Benzene	ND	12,000	100,000
Bromomethane	ND	110,000	2,900,000
Carbon tetrachloride	ND	4,900	44,000
Ethylbenzene	ND	7,800,000	200,000,000
Ethyl methacrylate	ND	7,000,000	180,000,000
m- and p-Xylenes	ND	160,000,000 [2/]	4,100,000,000 [2/]
Methylene chloride	1.4-6.0	85,000	760,000
o-Xylene	ND	160,000,000	4,100,000,000
Styrene	ND	16,000,000	410,000,000
Trichloroethene	2.6-82	58,000	520,000
Tetrachloroethene	0.58-20	12,000	110,000
Toluene	1.0-7.4	16,000,000	410,000,000
Semivolatile Organic Compounds (ug/kg):			
1,2,4-Trichlorobenzene	ND	780,000	20,000,000
* 2-Methylnaphthalene	ND	1,600,000	41,000,000
2-Methylphenol (o-Cresol)	ND	3,900,000	100,000,000
3-Methylphenol (m-Cresol)	ND	3,900,000	100,000,000
4-Methylphenol (p-Cresol)	ND	390,000	10,000,000
* Acenaphthene	ND	4,700,000	120,000,000
* Acenaphthylene	ND	NS	NS
* Anthracene	ND	23,000,000	610,000,000
* Benzo(a)anthracene	33	870	7,800
* Benzo(a)pyrene	40	87	780
* Benzo (b) fluoranthene	65-66	870	7,800
* Benzo (k) fluoranthene	ND	8,700	78,000
* Benzo (g,h,i) perylene	ND	NS	NS
* Chrysene	43	87,000	780,000
Dibenzofuran	ND	310,000	8,200,000
* Dibenzo (a,h) anthracene	ND	87	780
Di-n-butylphthalate	72	7,800,000	200,000,000
2,4-Dimethylphenol	ND	1,600,000	41,000,000
* Fluorene	ND	3,100,000	82,000,000
* Fluoranthene	58-61	3,100,000	82,000,000
* Indeno(1,2,3-cd)pyrene	ND	870	7,800
* Naphthalene	44-48	1,600,000	41,000,000
Phenol	ND	47,000,000	1,200,000,000
* Phenanthrene	30	NS	NS
* Pyrene	52	2,300,000	61,000,000

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Table 4-1
Summary of Site Background Soil Concentration Ranges
and EPA Risk Based Concentrations
Coke Manufacturing Plant RFI
Sloss Industries Corporation

ANALYTE	BACKGROUND CONCENTRATION RANGE	USEPA RBC Ingestion Soil Residential [1/]	USEPA RBC Ingestion Soil Industrial [1/]
Metals (mg/kg)			
Silver	ND	390	10,000
Arsenic	1.9-21	0.43 [3/]	3.8 [3/]
Barium	14-200	5,500	140,000
Beryllium	0.44-2.6	160	4,100
Cadmium	ND	39	1,000
Chromium	8.6-46	230 [4/]	6,100
Copper	5.0-32	3,100	82,000
Mercury	0.034-0.15	7.8 [5/]	200 [5/]
Nickel	4.7-47	1,600	41,000
Lead	5.0-23	400	NS
Antimony	ND	31	820
Zinc	8.6-71	23,000	610,000
Cyanide, Total (mg/kg)	ND	1,600	41,000

ND - Not Detected. This constituent was not detected in site background soil samples.
NS - No Standard.
1/ Source: EPA Region III Risk-Based Concentrations (RBCs), April 13, 2000.
2/ RBC for m-xylene.
3/ RBC for arsenic as a carcinogen.
4/ Chromium VI RBC.
5/ RBC for methylmercury
* Polycyclic aromatic hydrocarbon (PAH).

TABLE 4-2
Summary of Constituents Detected in Surficial
Soil Samples Collected at Quench Tower A
Coke Manufacturing Plant RFI
Sloss IndustriesCorporation

SAMPLE ID LAB ID SAMPLE DATE	USEPA RBC INGESTION SOIL RESIDENTIAL [1/]	960608-CO-01A-SL0001 (0.-0.1) 960006337 06/08/96	960608-CO-01A-SL0002 (0.-0.1) 960006338 06/08/96	960608-CO-01A-SL9002 960006343 06/08/96	960608-CO-01A-SL0003 (0.-0.1) 960006339 06/08/96
Volatile Organic Compounds (ug/kg):					
Methylene chloride	85,000	<5.0 R	<5.0 R	76 J	<5.0 UJ
Tetrachloroethene	12,000	<5.0 R	<5.0 R	<5.0 UJ	6.6 J
Semivolatile Organic Compounds (ug/kg):					
Benzo(a)anthracene	870	380	<330	<330	<330
Chrysene	87,000	<330	<330	<330	<330
Fluoranthene	3,100,000	1100	<330	620	390
Phenanthrene	NS	540	<330	410	<330
Pyrene	2,300,000	1100	<330	500	<330
Metals (mg/kg):					
Arsenic	0.43 [3/]	14	10	7.3	9.7
Barium	5,500	25	20	18	18
Chromium	230 [2/]	1.3	1.9	1.3	<1.0
Copper	3,100	7.3	6.2	6.1	5.1
Nickel	1,600	<4.0	4.1	6.3	<4.0
Lead	400	<5.0	7.6	<5.0	<5.0
Cyanide, Total (mg/kg):	1,600	<1.0	<1.0	<1.0	<1.0
Percent Solids		81	80	80	82

NS No Standard.
J Positive results have been classified as qualitative during data validation.
UJ Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
R Data classified as unusable.
1/ Source: USEPA Region III Risk-Based Concentrations (RBCs), April 13, 2000
2/ Chromium VI RBC.
3/ RBC for arsenic as a carcinogen.
[ ] Concentration exceeds EPA Residential RBC.
Note: Sample 960608-CO-01A-SL9002 is the duplicate for 960608-CO-01A-SL0002(0-0.1).

TABLE 4-3
Summary of Constituents Detected in Subsurface Soil Samples Collected at
Quench Tower A (SWMUs 1A, 2A, and 3A)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

		SWMU 1A		SWMU 2A	
SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL [1]	960610-CO-01A-SL0004 (2-4)	960611-CO-01A-SL0005 (2-4)	960610-CO-02A-SL0001 (2-4)	960610-CO-02A-SL0001 (16-18)
LAB ID		960006353	960006494	960006350	960006351
SAMPLE DATE		06/10/96	06/11/96	06/10/96	06/10/96
Volatile Organic Compounds (ug/kg):					
Acetone	7,800,000	980 J	360 J	1200 J	92 U
Methylene chloride	85,000	55 J	10 J	14 J	17
Semivolatile Organic Compounds (ug/kg):					
2-Methylphenol (o-Cresol)	3,900,000	<410	<370	1400	<400
3-Methylphenol (m-Cresol)	3,900,000	<410	<370	1700	<400
4-Methylphenol (p-Cresol)	390,000	<410	<370	1700	<400
Benzo(a)anthracene	870	<410	1400	6700	<400
Benzo (k) fluoranthene	8,700	<410	<370	<940	<400
Chrysene	87,000	<410	1200	5300	<400
Fluoranthene	3,100,000	480	2200	4800	<400
Phenol	47,000,000	<410	<370	2700	<400
Phenanthrene	NS	<410	1100	1400	<400
Pyrene	2,300,000	660	4300	10000	<400
Metals (mg/kg):					
Arsenic	0.43 [2]	19	12	14	13
Barium	5,500	250	18	93	200
Beryllium	160	2.8	1.8	1.6	1.6
Cadmium	39	3.2	10	1.4	<0.60
Chromium	230 [3]	14	<5.6	14	30
Copper	3,100	31	54	280	3.5
Mercury	7.8 [4]	<0.041	1.1	0.17	<0.040
Nickel	1,600	8.5	6	12	11
Lead	400	39	41	90	40
Zinc	23,000	78 U	130	63 U	36 U
Cyanide, Total (mg/kg)	1,600	7.8	2	27	<1.2
Percent Solids	--	80	90	70	83

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TABLE 4-3
Summary of Constituents Detected in Subsurface Soil Samples Collected at
Quench Tower A (SWMUs 1A, 2A, and 3A)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

		SWMU 2A	SWMU 3A		
SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL [1/]	960610-CO-02A-SL0002 (2-4)	960611-CO-03A-SL0001 (6-8)	960611-CO-03A-SL0002 (8-10)	960611-CO-03A-SL9002
LAB ID		960006352	960006495	960006496	960006497
SAMPLE DATE		06/10/96	06/11/96	06/11/96	06/11/96
Volatile Organic Compounds (ug/kg):					
Acetone	7,800,000	<67 UJ	380 J	690	790 J
Methylene chloride	85,000	43 J	10 J	<6.5	13 J
Semivolatile Organic Compounds (ug/kg):					
2-Methylphenol (o-Cresol)	3,900,000	850	<410	<430	<430
3-Methylphenol (m-Cresol)	3,900,000	1200	<410	<430	<430
4-Methylphenol (p-Cresol)	390,000	1200	<410	<430	<430
Benzo(a)anthracene	870	3900	<410	<430	<430
Benzo (k) fluoranthene	8,700	4000	<410	<430	<430
Chrysene	87,000	2900	<410	<430	<430
Fluoranthene	3,100,000	5500	<410	<430	<430
Phenol	47,000,000	1300	<410	<430	<430
Phenanthrene	NS	<440	<410	<430	<430
Pyrene	2,300,000	7100	<410	<430	<430
Metals (mg/kg):					
Arsenic	0.43 [2/]	24	10	9	96
Barium	5,500	110	45	65	42
Beryllium	160	1.7	1.8	3.4	1
Cadmium	39	0.80	<6.2	<6.5	<6.5
Chromium	230 [3/]	7.1	36	23	79
Copper	3,100	52	9.8	12	6.9
Mercury	7.8 [4/]	<0.044	0.99	<0.19	0.99
Nickel	1,600	31	10	21	9
Lead	400	29	24	26	17
Zinc	23,000	950	52	44	32
Cyanide, Total (mg/kg)	1,600	13	18	<1.3	2
Percent Solids	--	75	80	77	77

J Positive results have been classified as qualitative during data validation.
ND Not Detected. This constituent was not detected in site background soil samples.
UJ Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
U Classified as nondetected.
1/ Source: USEPA Region III, Risk-Based Concentrations (RBCs), April 13, 2000.
2/ RBC for arsenic as carcinogen.
3/ Chromium VI RBC.
4/ RBC for methylmercury.
Concentration Exceeds USEPA Residential RBC.
Note: Sample 960611-CO-03A-SL9002 is the duplicate for 960611-CO-03A-SL0002(8-10).

TABLE 4-4
Summary of Concentrations Detected in Quench Water Samples Collected at Quench Tower A (SWMU2A) and Quench Tower B (SWMU 2B)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	960607-CO-02A-PW0001	960605-CO-02B-PW0001	960605-CO-02B-PW9001
LAB ID	960006244	960006157	960006161
SAMPLE DATE	06/07/96	06/05/96	06/05/96
Volatile Organic Compounds (ug/L):			
1,2,3-Trichloropropane	1.3	<.5	1.2
m- and p-Xylenes	<.5	1.0	<.5
o-Xylene	<.5	0.6	0.6
Semivolatile Organic Compounds (ug/L):	ND	ND	ND
Metals, Dissolved (ug/L):			
Barium, Dissolved	200	190	200
Metals, Total (ug/L):			
Barium, Total	230	220	230

ND Not Detected. None of the constituents in this group were detected above their respective detection limits.

TABLE 4-5
Summary of Constituents Detected in Surficial
Soil Samples Collected at Quench Tower B
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL [1/]	960608-CO-01B-SL0001 (0.-0.1)	960608-CO-01B-SL0002 (0.-0.1)	960608-CO-01B-SL0003 (0.-0.1)
LAB ID		960006340	960006341	960006342
SAMPLE DATE		06/08/96	06/08/96	06/08/96
Volatile Organic Compounds (ug/kg)				
m- and p-Xylenes	160,000,000 [2/]	6.7 J	6.9 J	<5.0 UJ
Semivolatile Organic Compounds (ug/kg):				
2-Methylnaphthalene	NS	460	<330	<330
Anthracene	23,000,000	410	<330	<330
Benzo(a)anthracene	870	1200	<330	<330
Benzo(a)pyrene	87	550	<330	<330
Chrysene	87,000	1600	<330	<330
Fluoranthene	3,100,000	2000	<330	<330
Naphthalene	1,600,000	660	610	550
Phenanthrene	NS	1800	<330	<330
Pyrene	2,300,000	4300	<330	<330
Metals (mg/kg):				
Arsenic	0.43 [4/]	9.3	3.5	6.2
Barium	5,500	30	13	13
Chromium	230 [3/]	4.0	<1.0	3.5
Copper	3,100	15	3.8	4.8
Nickel	1,600	6.8	<4.0	<4.0
Lead	400	5.9	<5.0	<5.0
Cyanide, Total (mg/kg)	1,600	1.4	<1.0	<1.0
Percent Solids		84	86	84

J Positive results have been classified as qualitative during data validation.
UJ Analyte was not detected at or above the indicated concentration. and has been classified as qualitative.
NS No standard.
Concentration exceeds Residential RBC.

1/ Source: EPA Region III Risk-Based Concentrations (RBCs), April 13, 2000.
2/ RBC for m-xylene.
3/ RBC for Chromium VI.
4/ RBC for arsenic as a carcinogen.

TABLE 4-6
Summary of Constituents Detected in Subsurface Soil Samples
Collected at Quench Tower B (SWMUs 1B and 2B)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL [1/]	SWMU 1B 960613-CO-01B-SL0004 (4-6)	960613-CO-01B-SL0004 (8-10)	960613-CO-01B-SL0004 (12-14)	960614-CO-01B SL0005 (6-8)
LAB ID		960006593	960006592	960006594	960006755
SAMPLE DATE		06/13/96	06/13/96	06/13/96	06/14/96
Volatile Organic Compounds (ug/kg):					
2-Hexanone	3,100,000	<68	<62	<68	<62
Acetone	7,800,000	<68	<62	120	<62
Methylene chloride	85,000	<6.8	<6.2	<6.8	<6.2
Semivolatile Organic Compounds (ug/L):					
2-Methylnaphthalene	1,600,000	<450	<410	<440	<8100
Acenaphthene	4,700,000	<450	<410	<440	<8100
Acenaphthylene	NS	<450	<410	<440	<8100
Anthracene	23,000,000	<450	<410	<440	12000
Benzo(a)anthracene	870	<450	<410	<440	16000
Benzo(a)pyrene	87	<450	<410	<440	14000
Benzo (b) fluoranthene	870	<450	<410	<440	17000
Benzo (k) fluoranthene	8,700	<450	<410	<440	<8100
Benzo (g,h,i) perylene	NS	<450	<410	<440	<8100
Chrysene	87,000	<450	<410	<440	12000
Dibenzofuran	310,000	<450	<410	<440	11000
Fluorene	3,100,000	<450	<410	<440	20000
Fluoranthene	3,100,000	<450	<410	<440	52000
Indeno(1,2,3-cd)pyrene	870	<450	<410	<440	<8100
Naphthalene	1,600,000	<450	<410	<440	30000
Phenanthrene	NS	<450	<410	<440	70000
Pyrene	2,300,000	<450	<410	<440	54000

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TABLE 4-6
Summary of Constituents Detected in Subsurface Soil Samples
Collected at Quench Tower B (SWMUs 1B and 2B)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL [1]	SWMU 1B 960613-CO-01B-SL0004 (4-6)	960613-CO-01B-SL0004 (8-10)	960613-CO-01B-SL0004 (12-14)	960614-CO-01B SL0005 (6-8)
LAB ID		960006593	960006592	960006594	960006755
SAMPLE DATE		06/13/96	06/13/96	06/13/96	06/14/96
Metals (mg/kg):					
Silver	390	<1.4	2	<1.4	<1.2
Arsenic	0.43 [2]	10	9	9	4.2
Barium	5,500	18	30	93	20
Beryllium	160	1	1	3.8	0.74
Chromium	230 [3]	55	42	27	26
Copper	3,100	30	32000	16	17
Mercury	7.8 [4]	0.23	0.19	0.50	1.8
Nickel	1,600	18	44	28	8.4
Lead	400	8	1200	20	17
Zinc	23,000	51	1100	260	69
Cyanide, Total	1,600	3	2	<1.4	<1.2
Percent Solids	--	73	80	74	81

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TABLE 4-6
Summary of Constituents Detected in Subsurface Soil Samples
Collected at Quench Tower B (SWMUs 1B and 2B)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL [1/]	SWMU 1B 960614-CO-01B-SL9005	SWMU 1B 960614-CO-01B-SL0005 (9-11)	SWMU 2B 960619-CO-02B-SL0001 (2.5-3)	
LAB ID		960006756	960006754	960006939	
SAMPLE DATE		06/14/96	06/14/96	06/19/96	
Volatile Organic Compounds (ug/kg):					
2-Hexanone	3,100,000	<62	<64	82	J
Acetone	7,800,000	<62	<64	<66	UJ
Methylene chloride	85,000	<6.2	<6.4	7.1	J
Semivolatile Organic Compounds (ug/L):					
2-Methylnaphthalene	1,600,000	940	<420	<430	
Acenaphthene	4,700,000	<410	<420	2100	
Acenaphthylene	NS	940	<420	<430	
Anthracene	23,000,000	2300	<420	<430	
Benzo(a)anthracene	870	2500	<420	1800	
Benzo(a)pyrene	87	<410	<420	1600	
Benzo (b) fluoranthene	870	2000	<420	2400	
Benzo (k) fluoranthene	8,700	420	<420	<430	
Benzo (g,h,i) perylene	NS	470	<420	460	
Chrysene	87,000	1600	<420	1400	
Dibenzofuran	310,000	2000	<420	<430	
Fluorene	3,100,000	3600	<420	1800	
Fluoranthene	3,100,000	20000	<420	6000	
Indeno(1,2,3-cd)pyrene	870	980	<420	<430	
Naphthalene	1,600,000	3700	<420	1200	
Phenanthrene	NS	20000	<420	<430	
Pyrene	2,300,000	<4100	<420	6800	

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TABLE 4-6
Summary of Constituents Detected in Subsurface Soil Samples
Collected at Quench Tower B (SWMUs 1B and 2B)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

		SWMU 1B		SWMU 2B
SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL [1/]	960614-CO-01B-SL9005	960614-CO-01B-SL0005 (9-11)	960619-CO-02B-SL0001 (2.5-3)
LAB ID		960006756	960006754	960006939
SAMPLE DATE		06/14/96	06/14/96	06/19/96
Metals (mg/kg):				
Silver	390	<1.2	<1.3	<1.3
Arsenic	0.43 [2/]	6.2	11	8.0
Barium	5,500	12	18	63
Beryllium	160	0.62	1.4	2.2
Chromium	230 [3/]	47 J	41 J	39
Copper	3,100	4.7	6.0	13
Mercury	7.8 [4/]	1.1	1.8	0.33
Nickel	1,600	5.9	15	21
Lead	400	<6.2	<6.4	22
Zinc	23,000	25	31	63
Cyanide, Total	1,600	<1.2	<1.3	14
Percent Solids	--	81	78	76

1/ Source: EPA Region III Risk-Based Concentrations (RBCs), April 13, 2000.
2/ RBC for arsenic as a carcinogen.
3/ RBC for Chromium VI.
4/ RBC for methylmercury.
J - Positive results have been classified as qualitative during data validation.
UJ - Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
NS - No standard.
Concentration exceeds Residential RBC.
Note: Sample 960614-CO-01B-SL9005 is the duplicate of sample 960614-CO-01B-SL0005(6-8).

TABLE 4-7
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMU 5
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID LABSID SMPLDATE	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	960611-CO-05-SL0001 (1-3) 960006498 06/11/96	960611-CO-05-SL0001 (9-11) 960006499 06/12/96	960611-CO-05-SL0001 (11-13) 960006500 06/12/96	960612-CO-05-SL0002 (1-3) 960006501 06/12/96
Volatile Organic Comounds (ug/kg):					
1,1,2,2-Tetrachloroethane	3,200	4.0 U	3.0 U	3.2	2.2 U
Acetone	7,800,000	3200 J	86	<61	<61
Benzene	12,000	<6.0 UJ	<6.2	<6.1	<6.1
Carbon tetrachloride	4,900	<6.0 UJ	<6.2	<6.1	<6.1
Ethylbenzene	7,800,000	<6.0 UJ	<6.2	<6.1	<6.1
m- and p-Xylenes	160,000,000 [2/]	<6.0 UJ	<6.2	<6.1	<6.1
Methylene chloride	85,000	<6.0 UJ	<6.2	6	13
o-Xylene	160,000,000	<6.0 UJ	<6.2	<6.1	<6.1
Trichloroethene	58,000	<6.0 UJ	<6.2	<6.1	<6.1
Toluene	16,000,000	<6.0 UJ	<6.2	<6.1	<6.1
Semivolatile Organic Compounds (ug/kg):					
2-Methylnaphthalene	1,600,000	<400	<410	<400	2400
Acenaphthene	4,700,000	<400	<410	<400	4500
Acenaphthylene	NS	<400	<410	<400	<400
Anthracene	23,000,000	1200	<410	<400	6700
Benzo(a)anthracene	870	4800	<410	<400	7100
Benzo(a)pyrene	87	5100	<410	<400	5200
Benzo (b) fluoranthene	870	5100	<410	<400	5200
Benzo (k) fluoranthene	8,700	1100	<410	<400	1100
Benzo (g,h,i) perylene	NS	660	<410	<400	3200
Chrysene	87,000	4000	<410	<400	5600
Dibenzofuran	310,000	<400	<410	<400	4900
Dibenzo (a,h) anthracene	87	<400	<410	<400	<400
Fluorene	3,100,000	<400	<410	<400	7700
Fluoranthene	3,100,000	32000	<410	630	29000
Indeno(1,2,3-cd)pyrene	870	1700	<410	<400	<400
Naphthalene	1,600,000	<400	<410	<400	<20000
Phenanthrene	NS	5400	<410	<400	27000
Pyrene	2,300,000	22000	<410	<400	29000

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TABLE 4-7
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMU 5
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	960611-CO-05-SL0001 (1-3)	960611-CO-05-SL0001 (9-11)	960611-CO-05-SL0001 (11-13)	960612-CO-05-SL0002 (1-3)
LABSID		960006498	960006499	960006500	960006501
SMPLDATE		06/11/96	06/12/96	06/12/96	06/12/96
Metals (mg/kg):					
Arsenic	0.43 [3/]	20	8	7	7
Barium	5,500	230	200	150	120
Beryllium	160	3.4	3.4	2.6	2.6
Cadmium	39	7	<6.2	<6.1	<6.1
Chromium	230 [4/]	25	34	39	49
Copper	3,100	70	18	13	7.0
Mercury	7.8 [5/]	0.58	0.72	0.34	0.52
Nickel	1,600	10	25	18	8
Lead	400	220	30	150	39
Antimony	31	8 J	<6.2 R	<6.1 R	<6.1 R
Zinc	23,000	1300	58	55	44
Cyanide, Total (mg/kg):	1,600	38	<1.2	<1.2	<1.2
Percent Solids	--	83	80	82	82

Footnotes on page 6

TABLE 4-7
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMU 5
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID LABSID SMPLDATE	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	960612-CO-05-SL0002 (11-13) 960006502 06/12/96	960612-CO-05-SL0002 (15-17) 960006503 06/12/96	960613-CO-05-SL0004 (1-3) 960006590 06/13/96	960613-CO-05-SL0004 (7-9) 960006587 06/13/96
Volatile Organic Comounds (ug/kg):					
1,1,2,2-Tetrachloroethane	3,200	3.4 U	2.1 U	<0.58	<0.64
Acetone	7,800,000	110 J	<66 UJ	<58	<64
Benzene	12,000	<6.2 UJ	<6.6 UJ	<5.8	<6.4
Carbon tetrachloride	4,900	<6.2 UJ	<6.6 UJ	<5.8	9
Ethylbenzene	7,800,000	9 J	<6.6 UJ	57 J	23
m- and p-Xylenes	160,000,000 [2/]	<6.2 UJ	<6.6 UJ	370 J	150
Methylene chloride	85,000	16 J	<6.6 UJ	<5.8	10
o-Xylene	160,000,000	8 J	<6.6 UJ	350 J	100
Trichloroethene	58,000	<6.2 UJ	<6.6 UJ	<5.8	14
Toluene	16,000,000	<6.2 UJ	<6.6 UJ	16 J	<6.4
Semivolatile Organic Compounds (ug/kg):					
2-Methylnaphthalene	1,600,000	4800	780	<19000	<420
Acenaphthene	4,700,000	440	<430	<19000	<420
Acenaphthylene	NS	<410	<430	<19000	<420
Anthracene	23,000,000	1200	660	<19000	450
Benzo(a)anthracene	870	1500	1700	<19000	830
Benzo(a)pyrene	87	1200	2400	<19000	1300
Benzo (b) fluoranthene	870	1200	2200	<19000	700
Benzo (k) fluoranthene	8,700	<410	470	<19000	<420
Benzo (g,h,i) perylene	NS	<410	<430	<19000	<420
Chrysene	87,000	1000	1400	<19000	670
Dibenzofuran	310,000	2200	550	<19000	<420
Dibenzo (a,h) anthracene	87	<410	<430	<19000	<420
Fluorene	3,100,000	2600	750	<19000	460
Fluoranthene	3,100,000	5500	5500	<19000	1400
Indeno(1,2,3-cd)pyrene	870	<410	4100	<19000	<420
Naphthalene	1,600,000	26000	2000	<19000	2000
Phenanthrene	NS	9400	3200	<19000	2800
Pyrene	2,300,000	7400	4200	<19000	1400

Footnotes on page 6

TABLE 4-7
Summary of Constituents Detected in Subsurface Soil Samples Collected at SWMU 5
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID LABSID SMPLDATE	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	960612-CO-05-SL0002 (11-13) 960006502 06/12/96	960612-CO-05-SL0002 (15-17) 960006503 06/12/96	960613-CO-05-SL0004 (1-3) 960006590 06/13/96	960613-CO-05-SL0004 (7-9) 960006587 06/13/96
Metals (mg/kg):					
Arsenic	0.43 [3/]	8	3	7	9
Barium	5,500	120	93	130	140
Beryllium	160	1	1.6	2.0	4.2
Cadmium	39	<6.2	<6.6	<5.8	<6.4
Chromium	230 [4/]	8	16	28	59
Copper	3,100	<3.1	6.8	<2.9	14
Mercury	7.8 [5/]	0.10	0.14	0.15	0.18
Nickel	1,600	8	9	<4.6	19
Lead	400	25	10	12	20
Antimony	31	<6.2 R	<6.6 R	<5.8	59
Zinc	23,000	24	45	26	62
Cyanide, Total (mg/kg):	1,600	<1.2	<1.3	7	<1.3
Percent Solids	--	80	76	86	78

Footnotes on page 6

TABLE 4-7
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMU 5
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	960613-CO-05-SL0004 (9-11)	960613-CO-05-SL0005 (1-3)	960613-CO-05-SL0005 (5-7)	960613-CO-05-SL9005
LABSID		960006588	960006589	960006591	960006595
SMPLDATE		06/13/96	06/13/96	06/13/96	06/13/96
Volatile Organic Comounds (ug/kg):					
1,1,2,2-Tetrachloroethane	3,200	2.1 U	<0.60 UJ	2.1 U	<0.65
Acetone	7,800,000	<70	120 J	<66	77
Benzene	12,000	<7.0	75 J	42	<6.5
Carbon tetrachloride	4,900	<7.0	<6.0 UJ	<6.6	<6.5
Ethylbenzene	7,800,000	<7.0	430 J	18	<6.5
m- and p-Xylenes	160,000,000 [2/]	<7.0	110 J	10	<6.5
Methylene chloride	85,000	8	8.2 J	<6.6	<6.5
o-Xylene	160,000,000	<7.0	370 J	16	<6.5
Trichloroethene	58,000	<7.0	<6.0 UJ	<6.6	<6.5
Toluene	16,000,000	<7.0	<6.0 UJ	<6.6	<6.5
Semivolatile Organic Compounds (ug/kg):					
2-Methylnaphthalene	1,600,000	<460 UJ	3200	7400	<21000 R
Acenaphthene	4,700,000	<460 UJ	1600	7100	<21000 R
Acenaphthylene	NS	<460 UJ	<400	450	<21000 R
Anthracene	23,000,000	<460 UJ	3700	<22000	<21000 R
Benzo(a)anthracene	870	<460 UJ	5100	<22000	<21000 R
Benzo(a)pyrene	87	<460 UJ	<400	7800	<21000 R
Benzo (b) fluoranthene	870	<460 UJ	4600	6800	<21000 R
Benzo (k) fluoranthene	8,700	<460 UJ	590	1600	<21000 R
Benzo (g,h,i) perylene	NS	<460 UJ	470	3300	<21000 R
Chrysene	87,000	<460 UJ	3700	7600	<21000 R
Dibenzofuran	310,000	<460 UJ	3100	7200	<21000 R
Dibenzo (a,h) anthracene	87	<460 UJ	430	<430	<21000 R
Fluorene	3,100,000	<460 UJ	5800	22000	<21000 R
Fluoranthene	3,100,000	<460 UJ	34000	82000	78000 J
Indeno(1,2,3-cd)pyrene	870	<460 UJ	3000	7900	<21000 R
Naphthalene	1,600,000	<460 UJ	23000	51000	49000 J
Phenanthrene	NS	<460 UJ	22000	58000	53000 J
Pyrene	2,300,000	<460 UJ	<20000	22000	<21000 R

Footnotes on page 6

TABLE 4-7
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMU 5
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	960613-CO-05-SL0004 (9-11)	960613-CO-05-SL0005 (1-3)	960613-CO-05-SL0005 (5-7)	960613-CO-05-SL9005
LABSID		960006588	960006589	960006591	960006595
SMPLDATE		06/13/96	06/13/96	06/13/96	06/13/96
Metals (mg/kg):					
Arsenic	0.43 [3/]	8	10	8	22
Barium	5,500	79	73	88	82
Beryllium	160	2.7	2.0	3.6	2.7
Cadmium	39	<7.0	<6.0	<6.6	<6.5
Chromium	230 [4/]	10	17	30	95
Copper	3,100	18	10	3.8	5.3
Mercury	7.8 [5/]	0.21	0.12	0.14	0.62
Nickel	1,600	24	7	10	19
Lead	400	10	77	10	32
Antimony	31	<7.0	<6.0	<6.6	<6.5
Zinc	23,000	59	42	25	62
Cyanide, Total (mg/kg):	1,600	<1.4	1	<1.3	1
Percent Solids	--	71	83	76	77

1/ Source: EPA Region III Risk-Based Concentrations (RBCs), April 13, 2000.
2/ RBC for m-xylene
3/ RBC for arsenic as a carcinogen.
4/ RBC for chromium VI.
5/ RBC for methylmercury.
J - Positive results have been classified as qualitative during data validation.
R - Data classified as unuseable.
U - Classified as nondetected.
UJ - Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
NS - No standard.
☐ Concentration exceeds Residential RBC.
Note: Sample 960613-CO-05-SL9005 is the duplicate of 960613-CO-05-SL0005(5-7).

TABLE 4-8
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMUs 7, 8, and 9
Coke Manufacturing Plant RFI
Sloss Industries Corporation

		SWMU 7			
SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	960615-CO-07-SL0001 (4-6)	960615-CO-07-SL0001 (6-8)	960617-CO-07-SL0002 (4-6)	960617-CO-07-SL9002
LAB ID		960006799	960006800	960006802	960006804
SAMPLE DATE		06/15/96	06/15/96	06/17/96	06/17/96
Volatile Organic Compounds (ug/kg):					
1,1,2,2-Tetrachloroethane	3,200	5.1 J	<6.8	4.3 J	2.1
Acetone	7,800,000	99 J	82 J	<62	100 U
Benzene	12,000	150 J	120 J	<6.2	<6.0
Ethylbenzene	7,800,000	240 J	49 J	<6.2	<6.0
Ethyl methacrylate	7,000,000	<6.3 UJ	<6.8	11 J	<6.0
m- and p-Xylenes	160,000,000[2/]	370 J	84 J	<6.2	<6.0
Methylene chloride	85,000	<6.3 UJ	<6.8	<6.2	6.7
o-Xylene	160,000,000	290 J	49 J	<6.2	<6.0
Styrene	16,000,000	150	<6.8	<6.2	<6.0
Toluene	16,000,000	320 J	120 J	<6.2	<6.0
Semivolatile Organic Compounds (ug/kg):					
2-Methylnaphthalene	1,600,000	46000	920	<410	<390
2-Methylphenol (o-Cresol)	3,900,000	<21000	<440	<410	<390
3-Methylphenol (m-Cresol)	3,900,000	<21000	<440	<410	<390
4-Methylphenol (p-Cresol)	390,000	<21000	<440	<410	<390
Anthracene	23,000,000	30000	<440	<410	<390
Benzo(a)anthracene	870	29000	490	<410	<390
Benzo(a)pyrene	87	24000	510	<410	<390
Benzo (b) fluoranthene	870	23000	590	<410	<390
Chrysene	87,000	22000	<440	<410	<390
Dibenzofuran	310,000	33000	530	<410	<390
2,4-Dimethylphenol	1,600,000	<21000	580	<410	<390
Fluorene	3,100,000	52000	740	<410	<390
Fluoranthene	3,100,000	94000	1900	<410	<390
Naphthalene	1,600,000	200000	6400	<410	<390
Phenol	47,000,000	<21000	570	<410	<390

TABLE 4-8
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMUs 7, 8, and 9
Coke Manufacturing Plant RFI
Sloss Industries Corporation

		SWMU 7			
SAMPLE ID	USEPA RBC INGESTION SOIL	960615-CO-07-SL0001 (4-6)	960615-CO-07-SL0001 (6-8)	960617-CO-07-SL0002 (4-6)	960617-CO-07-SL9002
LAB ID	RESIDENTIAL[1/]	960006799	960006800	960006802	960006804
SAMPLE DATE		06/15/96	06/15/96	06/17/96	06/17/96
Phenanthrene	NS	150000	2600	<410	<390
Pyrene	2,300,000	75000	730	<410	<390
Footnotes on page 4					
Metals (mg/kg):					
Arsenic	0.43[3/]	9.4	5.3	36	8.3
Barium	5,500	150	110	100	100
Beryllium	160	4.2	3.0	4.0	2.4
Cadmium	39	7.5	<6.8	<6.2	<6.0
Chromium	230[4/]	18	30	110	64
Copper	3,100	11	18	4.2	3.3
Mercury	7.8[5/]	0.54	0.31	0.33	3.9
Nickel	1,600	12	27	22	15
Lead	400	20	8.8	51	32
Zinc	23,000	51	93	56	40
Cyanide, Total (mg/kg):	1,600	35	<1.4	<1.2	<1.2
Percent Solids	--	79	74	81	84

Footnotes on page 4

TABLE 4-8
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMUs 7, 8, and 9
Coke Manufacturing Plant RFI
Sloss Industries Corporation

		SWMU 7	SWMU 8	SWMU 9	
SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	960617-CO-07-SL0002 (6-8)	960617-CO-08-SL0001 (2-4)	960614-CO-09-SL0001 (4-6)	960614-CO-09-SL0001 (6-8)
LAB ID		960006803	960006805	960006749	960006751
SAMPLE DATE		06/17/96	06/17/96	06/14/96	06/14/96
Volatile Organic Compounds (ug/kg):					
1,1,2,2-Tetrachloroethane	3,200	2.7	3.0	<0.63	<0.70
Acetone	7,800,000	<62	<62	94	<70
Benzene	12,000	<6.2	28	14	<7.0
Ethylbenzene	7,800,000	<6.2	<6.2	<6.3	<7.0
Ethyl methacrylate	7,000,000	6.7	<6.2	<6.3	<7.0
m- and p-Xylenes	160,000,000[2/]	<6.2	15	<6.3	<7.0
Methylene chloride	85,000	<6.2	<6.2	<6.3	<7.0
o-Xylene	160,000,000	<6.2	11	6.4	<7.0
Styrene	16,000,000	<6.2	<6.2	<6.3	<7.0
Toluene	16,000,000	<6.2	15	<6.3	<7.0
Semivolatile Organic Compounds (ug/kg):					
2-Methylnaphthalene	1,600,000	<410	1900	<420	<460
2-Methylphenol (o-Cresol)	3,900,000	<410	590	<420	<460
3-Methylphenol (m-Cresol)	3,900,000	<410	950	<420	<460
4-Methylphenol (p-Cresol)	390,000	<410	890	<420	<460
Anthracene	23,000,000	<410	<410	<420	<460
Benzo(a)anthracene	870	<410	<410	<420	<460
Benzo(a)pyrene	87	<410	<410	<420	<460
Benzo (b) fluoranthene	870	<410	<410	<420	<460
Chrysene	87,000	<410	<410	<420	<460
Dibenzofuran	310,000	<410	<410	<420	<460
2,4-Dimethylphenol	1,600,000	<410	<410	<420	<460
Fluorene	3,100,000	<410	<410	<420	<460
Fluoranthene	3,100,000	<410	<410	1400	<460
Naphthalene	1,600,000	<410	8100	1300	<460
Phenol	47,000,000	<410	2200	<420	<460

TABLE 4-8
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMUs 7, 8, and 9
Coke Manufacturing Plant RFI
Sloss Industries Corporation

		SWMU 7	SWMU 8	SWMU 9	
SAMPLE ID	USEPA RBC INGESTION SOIL	960617-CO-07-SL0002 (6-8)	960617-CO-08-SL0001 (2-4)	960614-CO-09-SL0001 (4-6)	960614-CO-09-SL0001 (6-8)
LAB ID	RESIDENTIAL[1/]	960006803	960006805	960006749	960006751
SAMPLE DATE		06/17/96	06/17/96	06/14/96	06/14/96
Phenanthrene	NS	<410	620	<420	<460
Pyrene	2,300,000	<410	<410	420	<460
Footnotes on page 4					
Metals (mg/kg):					
Arsenic	0.43[3/]	10	16	15	8.0
Barium	5,500	210	79	160	240
Beryllium	160	2.3	2.6	3.2	8.9
Cadmium	39	<6.2	<6.2	<6.3	<7.0
Chromium	230[4/]	23	44	58 J	59 J
Copper	3,100	3.7	6.1	6.8	20
Mercury	7.8[5/]	0.88	2.4	1.2	1.7
Nickel	1,600	14	14	15	39
Lead	400	30	35	200	22
Zinc	23,000	37	48	63	60
Cyanide, Total (mg/kg):	1,600	<1.2	<1.2	8.1	<1.4
Percent Solids	--	81	80	79	71

1/ Source: EPA Region III Risk-Based Concentrations (RBCs), April 13, 2000.
2/ RBC for M-xylene.
3/ RBC for Arsenic as a carcinogen.
4/ RBC for Chromium VI.
5/ RBC for methylmercury.
J - Positive results have been classified as qualitative during data validation.
U - Classified as undetected.
UJ - Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
NS - No standard.
Note: Sample 9606017-CO-07-SL9002 is the duplicate of 960617-CO-07-SL0002(4-6).
☐ Concentration exceeds Residential RBC.

TABLE 4-9
Summary of Constituents Detected in Suficial
Soil Samples Collected at SWMUs 10, 11, and 12
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	SWMU 10 960618-CO-10-SL0001 (2-4)	SWMU 10 960618-CO-10-SL9001	SWMU 10 960618-CO-10-SL0002 (2-4)	SWMU 11 960614-CO-11-SL0001 (2-4)
LAB ID		960006828	960006829	960006827	960006752
SAMPLE DATE		06/18/96	06/18/96	06/18/96	06/14/96
Volatile Organic Compounds (ug/kg):					
Acetone	7,800,000	150 U	76 U	100 U	<66
Benzene	12,000	4400 J	6900 J	1600 J	29
Ethylbenzene	7,800,000	2100 J	2400 J	<1500	<6.6
m- and p-Xylenes	160,000,000[2/]	4100 J	4700 J	<1500	<6.6
Methylene chloride	85,000	<6.1 UJ	<6.0 UJ	7.2 J	<6.6
o-Xylene	160,000,000	2600 J	2900 J	<1500	7.6
Toluene	16,000,000	4400 J	5500 J	120 J	<6.6
Semivolatile Organic Compounds (ug/kg):					
1,2,4-Trichlorobenzene	780,000	<400	<20000	<400	<8700
2-Methylnaphthalene	1,600,000	23000	46000	660	<8700
Acenaphthene	4,700,000	1500	<20000	<400	<8700
Acenaphthylene	NS	2900	<20000	<400	<8700
Anthracene	23,000,000	3300	<20000	<400	<8700
Benzo(a)anthracene	870	3000	<20000	<400	<8700
Benzo(a)pyrene	87	2700	<20000	<400	<8700
Benzo (b) fluoranthene	870	3400	<20000	<400	<8700
Benzo (k) fluoranthene	8,700	1000	<20000	<400	<8700
Benzo (g,h,i) perylene	NS	<400	<20000	<400	<8700
Chrysene	87,000	2700	<20000	<400	<8700
Dibenzofuran	310,000	4900	<20000	<400	<8700
Dibenzo (a,h) anthracene	87	400	<20000	<400	<8700
Fluorene	3,100,000	6200	19000	<400	8800
Fluoranthene	3,100,000	<20000	28000	<400	21000
Indeno(1,2,3-cd)pyrene	870	2400	<20000	<400	<8700
Naphthalene	1,600,000	160000	300000	2900	9900
Phenanthrene	NS	<20000	43000	<400	26000
Pyrene	2,300,000	<20000	<20000	<400	20000

Footnotes on page 4

TABLE 4-9
Summary of Constituents Detected in Suficial
Soil Samples Collected at SWMUs 10, 11, and 12
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	SWMU 10 960618-CO-10-SL0001 (2-4)	SWMU 10 960618-CO-10-SL9001	SWMU 10 960618-CO-10-SL0002 (2-4)	SWMU 11 960614-CO-11-SL0001 (2-4)
LAB ID		960006828	960006829	960006827	960006752
SAMPLE DATE		06/18/96	06/18/96	06/18/96	06/14/96
Metals (mg/kg):					
Arsenic	0.43[3/]	7.2	8.9	6.5	10
Barium	5,500	80	87	110	46
Beryllium	160	0.73	1.3	1.6	2.2
Chromium	230[4/]	29	48	44	32 J
Copper	3,100	7.9	9.4	13	45
Mercury	7.8[5/]	0.21	0.55	0.29	1.0
Nickel	1,600	10	14	17	16
Lead	400	34	37	32	25
Zinc	23,000	46	61	59	160
Cyanide, Total (mg/kg):	1,600	<1.2	<1.2	<1.2	<1.3
Percent Solids	--	82	83	83	76

Footnotes on page 4

TABLE 4-9
Summary of Constituents Detected in Suficial
Soil Samples Collected at SWMUs 10, 11, and 12
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	SWMU 11 960614-CO-11-SL0002 (2-4)	SWMU 12 960607-CO-12-SL0001 (0.5-1.5)	SWMU 12 960607-CO-12-SL0002 (0.5-1.5)	SWMU 12 960607-CO-12-SL9002
LAB ID		960006753	960006241	960006242	960006243
SAMPLE DATE		06/14/96	06/07/96	06/07/96	06/07/96
Volatile Organic Compounds (ug/kg):					
Acetone	7,800,000	<65	<50	130	120
Benzene	12,000	83	<5.0	<5.0	9.4
Ethylbenzene	7,800,000	<6.5	6.6	<5.0	8.4
m- and p-Xylenes	160,000,000[2/]	<6.5	<5.0	<5.0	<5.0
Methylene chloride	85,000	<6.5	<5.0	<5.0	<5.0
o-Xylene	160,000,000	<6.5	<5.0	<5.0	<5.0
Toluene	16,000,000	6.9	<5.0	<5.0	<5.0
Semivolatile Organic Compounds (ug/kg):					
1,2,4-Trichlorobenzene	780,000	<8600	3700	<330	<330
2-Methylnaphthalene	1,600,000	19000	1400	1100	400
Acenaphthene	4,700,000	130000	1900	<330	<330
Acenaphthylene	NS	<8600	<330	1600	670
Anthracene	23,000,000	120000	2000	570	340
Benzo(a)anthracene	870	130000	4900	2500	2000
Benzo(a)pyrene	87	86000	4700	7800	3400
Benzo (b) fluoranthene	870	120000	5200	7800	2900
Benzo (k) fluoranthene	8,700	21000	4500	5300	3600
Benzo (g,h,i) perylene	NS	36000	3000	4700	1800
Chrysene	87,000	97000	6000	4600	3100
Dibenzofuran	310,000	95000	1400	<330	<330
Dibenzo (a,h) anthracene	87	<8600	1400	2000	1100
Fluorene	3,100,000	300000	2000	<330	330
Fluoranthene	3,100,000	800000	9800	2600	2700
Indeno(1,2,3-cd)pyrene	870	58000	3300	5500	2300
Naphthalene	1,600,000	82000	<330	6400	1700
Phenanthrene	NS	900000	7500	1200	800
Pyrene	2,300,000	490000	9400	7000	4700

Footnotes on page 4

TABLE 4-9
Summary of Constituents Detected in Suficial
Soil Samples Collected at SWMUs 10, 11, and 12
Coke Manufacturing Plant RFI
Sloss Industries Corporation

		SWMU 11	SWMU 12		
SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	960614-CO-11-SL0002 (2-4)	960607-CO-12-SL0001 (0.5-1.5)	960607-CO-12-SL0002 (0.5-1.5)	960607-CO-12-SL9002
LAB ID		960006753	960006241	960006242	960006243
SAMPLE DATE		06/14/96	06/07/96	06/07/96	06/07/96
Metals (mg/kg):					
Arsenic	0.43[3/]	8.4	96	220	89
Barium	5,500	99	81	170	78
Beryllium	160	1.8	1.2	3.7	1.4
Chromium	230[4/]	52 J	46	92	29
Copper	3,100	17	7.0	11	5.8
Mercury	7.8[5/]	0.77	<0.033	0.048	0.065
Nickel	1,600	16	7.5	18	7.1
Lead	400	39	27	120	30
Zinc	23,000	60	34	65	28
Cyanide, Total (mg/kg):	1,600	<1.3	5.4	<1.0	<1.0
Percent Solids	--	77	84	85	85

1/ Source: EPA Region III Risk-Based Concentrations (RBC), April 13, 2000.
2/ RBC for m-xylene.
3/ RBC for arsenic as a carcinogen.
4/ RBC for chromium VI.
5/ RBC for methylmercury.
J - Positive results have been classified as qualitative during data validation.
UJ - Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
NS - No standard.
Note: Sample 960618-CO-10-SL9001 is the duplicate of 960618-CO-10-SL0001 (2-4) and sample 960607-CO-12-SL9002 is the duplicate of 960607-CO-12-SL0002(0.5-1.5).
☐ Concentration exceeds Residential RBC.

TABLE 4-10
Summary of Constituents Detected
in Soil Samples Collected at SWMU 6
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL RESIDENTIAL[1/]	960615-CO-06-SL0001 (0-1)	960615-CO-06-SL0001 (1-2)	960615-CO-06-SL9001	960615-CO-06-SL0001 (6-8)	960615-CO-06-SL0001 (12-14)
LAB ID		960006798	960006797	960006801	960006796	960006795
SAMPLE DATE		06/15/96	06/15/96	06/15/96	06/15/96	06/15/96
Volatile Organic Compounds (ug/kg):						
1,1,2,2-Tetrachloroethane	3,200	<0.62 UJ	3.0	2.3 J	2.2	4.0
Acetone	7,800,000	<62 UJ	<63	71 J	<62	<64
m- and p-Xylenes	160,000,000[2/]	6.7 J	<6.3	<6.3	<6.2	<6.4
Semivolatile Organic Compounds (ug/kg):						
Benzo (b) fluoranthene	870	6500 J	<420	<420	<410	<420
Chrysene	87,000	4400 J	<420	<420	<410	<420
Fluoranthene	3,100,000	12000 J	<420	<420	<410	<420
Naphthalene	1,600,000	4300 J	<420	<420	<410	<420
Pyrene	2,300,000	10000 J	<420	<420	<410	<420
Metals (mg/kg):						
Arsenic	0.43[3/]	15	10	7.8	7.8	13
Barium	5,500	78	28	91	120	41
Beryllium	160	0.74	0.89	1.4	0.86	3.2
Chromium	230[4/]	9.5 J	54 J	86	26 J	12 J
Copper	3,100	15	7.1	9.9	5.2	17
Mercury	7.8[5/]	0.32	0.28	0.26	0.30	0.26
Nickel	1,600	15	12	15	7.6	33
Lead	400	8.4	11	62	43	13
Zinc	23,000	52	48	57	31	63
Cyanide, Total (mg/kg):	1,600	1.4	<1.3	<1.3	<1.2	<1.3
Percent Solids	--	81	79	79	81	78

1/ Source: EPA Region III Risk-Based Concentrations (RBCs), April 13, 2000.
2/ RBC for m-xylene.
3/ RBC for arsenic as a carcinogen.
4/ RBC for Chromium VI.
5/ RBC for methylmercury.

J - Positive results have been classified as qualitative during data validation.
UJ - Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
NS - No standard.
Note: Sample 960615-CO-06-SL9001 is the duplicate of 960615-CO-06-SL0001(1-2).

TABLE 5-1
Occurrence of Constituents in Surficial Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	Frequency Detects / Total	Range of SQLs Min – Max	Range of Detects Min – Max	Average Detect	Mean	UCL	TEF	EPC	
Carcinogenic PAHs (µg/kg)									
Benzo(a)anthracene	4 / 8	330	380 - 4,900	2,200	1,800	19,000	0.1	490	[a]
Benzo(b)fluoranthene	3 / 8	330	5,200 - 7,800	6,500	3,900	260,000	0.1	780	[a]
Benzo(k)fluoranthene	2 / 8	330	4,500 - 5,300	4,900	2,000	45,000	0.01	53	[a]
Benzo(a)pyrene	3 / 8	330	550 - 7,800	4,400	2,500	61,000	1.0	7,800	[a]
Chrysene	4 / 8	330	1,600 - 6,000	4,200	3,400	110,000	0.001	6.0	[a]
Dibenzo(a,h)anthracene	2 / 8	330	1,400 - 2,000	1,700	860	5,600	1.0	2,000	[a]
Indeno(1,2,3-cd)pyrene	2 / 8	330	3,300 - 5,500	4,400	1,800	34,000	0.1	550	[a]
Non-Carcinogenic PAHs (µg/kg)									
Acenaphthene	1 / 8	330	1,900	1,900	590	3,100	NAP	1,900	
Acenaphthylene	1 / 8	330	1,600	1,600	560	2,600	NAP	1,600	
Anthracene	3 / 8	330	410 - 2,000	990	740	3,400	NAP	2,000	
Benzo(g,h,i)perylene	2 / 8	330	3,000 - 4,700	3,900	1,600	26,000	NAP	4,700	
Fluoranthene	6 / 8	330	620 - 12,000	4,700	5,200	130,000	NAP	12,000	
Fluorene	2 / 8	330	330 - 2,000	1,200	640	3,200	NAP	2,000	
2-Methylnaphthalene	3 / 8	330	460 - 1,400	990	680	2,600	NAP	1,400	
Naphthalene	5 / 8	330	550 - 6,400	2,500	1,800	22,000	NAP	6,400	
Phenanthrene	5 / 8	330 - 4,100	410 - 7,500	2,300	2,000	17,000	NAP	7,500	
Pyrene	6 / 8	330	500 - 10,000	5,400	7,400	270,000	NAP	10,000	
VOCs (µg/kg)									
Acetone	1 / 8	50	130	130	37	64	NAP	64	
Benzene	1 / 8	5.0	9.4	9.4	3.4	5.0	NAP	5.0	
Bromomethane	1 / 8	5.0	7.3	7.3	3.2	4.3	NAP	4.3	
Ethylbenzene	2 / 8	5.0	6.6 - 8.4	7.5	3.8	5.9	NAP	5.9	
Methylene chloride	1 / 8	5.0	76	76	8.1	48	NAP	48	
m- and p-Xylenes	3 / 8	5.0	6.7 - 6.9	6.8	4.1	6.6	NAP	6.6	
Dibenzofuran	1 / 8	330	1,400	1,400	530	2,400	NAP	1,400	

Footnotes appear on page 2.

SVOCs (µg/kg)

TABLE 5-1
Occurrence of Constituents in Surficial Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	Frequency Detects / Total	Range of SQLs Min – Max	Range of Detects Min – Max	Average Detect	Mean	UCL	TEF	EPC
Di-n-butylphthalate	4 / 8	330	770 - 1,800	1,200	1,100	4,800	NAP	1,800
1,2,4-Trichlorobenzene	1 / 8	330	3,700	3,700	790	6,500	NAP	3,700
Inorganics (mg/kg)								
Arsenic, Total	8 / 8	NA	3.5 - 220	47	47	500	NAP	220
Barium, Total	8 / 8	NA	13 - 170	54	56	180	NAP	170
Beryllium, Total	3 / 8	0.50	0.74 - 3.7	1.9	0.82	3.2	NAP	3.2
Chromium, Total	7 / 8	1.0	1.3 - 92	23	26	1000	NAP	92
Copper, Total	8 / 8	NA	3.8 - 15	8.8	8.9	14	NAP	14
Cyanide, Total	3 / 8	1.0	1.4 - 5.4	2.7	1.3	3.6	NAP	3.6
Lead, Total	5 / 8	5.0	5.9 - 120	34	21	190	NAP	120
Mercury, Total	2 / 8	0.033	0.065 - 0.32	0.19	0.051	0.23	NAP	0.23
Nickel, Total	5 / 8	4.0	6.3 - 18	11	8.0	24	NAP	18
Zinc, Total	8 / 8	NA	14 - 65	36	37	59	NAP	59

Data distributions are assumed to be lognormal (USEPA, 1995).

[a] The EPCs for the carcinogenic PAHs have been converted to an equivalent benzo(a)pyrene concentration by multiplication with the TEF.

EPC - Exposure point concentration; lesser of the UCL and the maximum detected concentration.
Mean Arithmetic average of the total number of samples, using proxy concentrations for non-detects.
µg/kg Micrograms per kilogram.
mg/kg Milligrams per kilogram.
NA Not available.
NAP Not applicable.
PAHs Polycyclic aromatic hydrocarbons.
SQLs Practical sample quantitation limits for the non-detects.
SVOCs Semivolatile organic compounds.
TEF Benzo(a)pyrene toxicity equivalency factor for carcinogenic PAHs (USEPA, 1995).
UCL The upper 95 percent one-tailed confidence interval on the mean for lognormally distributed data (Gilbert, 1987).
VOCs Volatile organic compounds.

TABLE 5-2
Occurrence of Constituents in Total Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	Frequency Detects / Total	Range of SQLs Min – Max	Range of Detects Min – Max	Average Detect	Mean	UCL	TEF	EPC	
Carcinogenic PAHs (µg/kg)									
Benzo(a)anthracene	19 / 47	330 - 21,000	380 - 130,000	12,000	3,700	8,500	0.1	850	[a]
Benzo(b)fluoranthene	16 / 47	330 - 19,000	590 - 120,000	13,000	3,200	7,400	0.1	740	[a]
Benzo(k)fluoranthene	11 / 47	330 - 21,000	420 - 21,000	3,700	1,100	1,900	0.01	19	[a]
Benzo(a)pyrene	15 / 47	330 - 19,000	510 - 86,000	11,000	2,600	5,600	1.0	5,600	[a]
Chrysene	19 / 47	330 - 19,000	670 - 97,000	9,700	3,300	7,200	0.001	7.2	[a]
Dibenzo(a,h)anthracene	4 / 47	330 - 4,000	400 - 2,000	1,100	450	590	1.0	590	[a]
Indeno(1,2,3-cd)pyrene	9 / 47	330 - 21,000	980 - 58,000	9,700	1,500	2,900	0.1	290	[a]
Non-Carcinogenic PAHs (µg/kg)									
Acenaphthene	8 / 47	330 - 21,000	440 - 130,000	19,000	1,300	2,500	NAP	2,500	
Acenaphthylene	4 / 47	330 - 5,800	450 - 2,900	1,500	480	660	NAP	660	
Anthracene	13 / 47	330 - 21,000	410 - 120,000	14,000	2,100	4,500	NAP	4,500	
Benzo(g,h,i)perylene	9 / 47	330 - 21,000	460 - 36,000	5,800	1000	1,800	NAP	1,800	
Fluoranthene	27 / 47	330 - 19,000	390 - 800,000	46,000	20,000	70,000	NAP	70,000	
Fluorene	15 / 47	330 - 19,000	330 - 300,000	30,000	3,900	10,000	NAP	10,000	
2-Methylnaphthalene	15 / 47	330 - 19,000	460 - 46,000	9,100	2,000	4,100	NAP	4,100	
Naphthalene	20 / 47	330 - 20,000	550 - 300,000	38,000	12,000	43,000	NAP	43,000	
Phenanthrene	21 / 47	330 - 19,000	410 - 900,000	64,000	15,000	54,000	NAP	54,000	
Pyrene	23 / 47	330 - 20,000	420 - 490,000	34,000	15,000	50,000	NAP	50,000	
VOCs (µg/kg)									
Acetone	20 / 47	50 - 70	71 - 3,200	420	130	200	NAP	200	
Benzene	11 / 47	5.0 - 7.1	9.4 - 6,900	820	31	71	NAP	71	
Bromomethane	1 / 47	5.0 - 7.1	7.3	7.3	3.2	3.3	NAP	3.3	
Carbon tetrachloride	1 / 47	5.0 - 7.1	9.0	9.0	3.2	3.3	NAP	3.3	
Ethylbenzene	10 / 47	5.0 - 1,500	6.6 - 2,400	320	23	48	NAP	48	
Ethyl methacrylate	2 / 47	5.0 - 7.1	6.7 - 11	8.9	3.3	3.5	NAP	3.5	
2-Hexanone	1 / 47	50 - 71	82	82	31	33	NAP	33	

Footnotes appear on page 3.

TABLE 5-2
Occurrence of Constituents in Total Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	Frequency Detects / Total	Range of SQLs Min – Max	Range of Detects Min – Max	Average Detect	Mean	UCL	TEF	EPC
VOCs continued (µg/kg)								
Methylene chloride	17 / 47	5.0 - 7.0	6.0 - 76	19	7.5	9.8	NAP	9.8
Styrene	1 / 47	5.0 - 300	150	150	4.9	6.4	NAP	6.4
Tetrachloroethene	1 / 47	5.0 - 7.1	6.6	6.6	3.1	3.3	NAP	3.3
1,1,2,2-Tetrachloroethane	18 / 47	0.50 - 6.8	2.1 - 5.1	3.1	1.7	2.6	NAP	2.6
Toluene	7 / 47	5.0 - 7.1	6.9 - 5,500	870	15	28	NAP	28
Trichloroethene	1 / 47	5.0 - 7.1	14	14	3.2	3.4	NAP	3.4
m- and p-Xylenes	11 / 47	5.0 - 1,500	6.7 - 4,700	530	33	77	NAP	77
o-Xylene	11 / 47	5.0 - 1,500	6.4 - 2,900	370	31	72	NAP	72
SVOCs (µg/kg)								
Dibenzofuran	11 / 47	330 - 19,000	530 - 95,000	15,000	1,900	4,000	NAP	4,000
Di-n-butylphthalate	10 / 47	330 - 5,800	770 - 2,900	1,600	710	1,000	NAP	1,000
2,4-Dimethylphenol	1 / 47	330 - 1,160	580	580	250	280	NAP	280
2-Methylphenol (o-Cresol)	3 / 47	330 - 2,800	590 - 1,400	950	340	420	NAP	420
3-Methylphenol (m-Cresol)	3 / 47	330 - 2,800	950 - 1,700	1,300	360	450	NAP	450
4-Methylphenol (p-Cresol)	3 / 47	330 - 2,800	890 - 1,700	1,300	360	450	NAP	450
Phenol	4 / 47	330 - 5,400	570 - 2,700	1,700	480	660	NAP	660
1,2,4-Trichlorobenzene	1 / 47	330 - 7,400	3,700	3,700	460	640	NAP	640
Inorganics (mg/kg)								
Antimony	2 / 47	5.0 - 7.1	8.0 - 59	34	3.7	4.2	NAP	4.2
Arsenic	47 / 47	NA	3.0 - 220	19	16	20	NAP	20
Barium	47 / 47	NA	13 - 250	97	100	140	NAP	140
Beryllium	41 / 47	0.50 - 0.50	0.74 - 8.9	2.4	2.4	3.2	NAP	3.2
Cadmium	6 / 47	0.50 - 7.0	0.80 - 10	5.0	3.5	5.1	NAP	5.1
Chromium	44 / 47	1.0 - 5.6	1.3 - 110	37	48	80	NAP	80
Copper	45 / 47	2.9 - 3.1	3.5 - 32,000	730	41	79	NAP	79

Footnotes appear on page 3.

TABLE 5-2
Occurrence of Constituents in Total Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	Frequency Detects / Total	Range of SQLs Min – Max	Range of Detects Min – Max	Average Detect	Mean	UCL	TEF	EPC
Inorganics - continued (mg/kg)								
Cyanide	18 / 47	1.0 - 1.4	1.0 - 38	10	3.3	5.5	NAP	5.5
Lead	42 / 47	5.0 - 6.4	5.9 - 1,200	71	52	84	NAP	84
Mercury	37 / 47	0.033 - 0.044	0.065 - 3.9	0.72	0.82	1.7	NAP	1.7
Nickel	42 / 47	4.0 - 4.6	6.0 - 44	17	16	20	NAP	20
Silver	1 / 47	1.0 - 1.4	2.0	2.0	0.63	0.67	NAP	0.67
Zinc	47 / 47	NA	14 - 1,300	130	93	130	NAP	130

Data distributions are assumed to be lognormal (USEPA, 1995).

[a] The EPCs for the carcinogenic PAHs have been converted to an equivalent benzo(a)pyrene concentration by multiplication with the TEF.

EPC	Exposure point concentration; lesser of the UCL and the maximum detected concentration.
Mean	Arithmetic average of the total number of samples, using proxy concentrations for non-detects.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram.
NA	Not available.
NAP	Not applicable.
PAHs	Polycyclic aromatic hydrocarbons.
SQLs	Practical sample quantitation limits for the non-detects.
SVOCs	Semivolatile organic compounds.
TEF	Benzo(a)pyrene toxicity equivalency factor for carcinogenic PAHs (USEPA, 1995).
UCL	The upper 95 percent one-tailed confidence interval on the mean for lognormally distributed data (Gilbert, 1987).
VOCs	Volatile organic compounds.

TABLE 5-3
Occurrence of Constituents in Process Water
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	Frequency Detects / Total	Range of SQLs Min – Max	Range of Detects Min – Max	Average Detect	Mean	UCL	EPC
VOCs (µg/L)							
Toluene	2 / 3	0.5	1.9 - 2.1	2.0	2.1	1,300,000	2.1
1,2,3-Trichloropropane	2 / 3	0.5	1.2 - 1.3	1.3	1.1	3,300	1.3
m- and p-Xylenes	1 / 3	0.5	1.0	1.0	0.55	200	1.0
o-Xylene	2 / 3	0.5	0.60 - 0.60	0.60	0.51	5.3	0.60
Inorganics (mg/L)							
Barium, Dissolved	3 / 3	NA	0.19 - 0.20	0.20	0.20	0.21	0.20
Barium, Total	3 / 3	NA	0.22 - 0.23	0.23	0.23	0.24	0.23

Data distributions are assumed to be lognormal (USEPA, 1995).

EPC	Exposure point concentration; lesser of the UCL and the maximum detected concentration.
Mean	Arithmetic average of the total number of samples, using proxy concentrations for non-detects.
µg/L	Micrograms per liter.
mg/L	Milligrams per liter.
NA	Not available.
SQLs	Practical sample quantitation limits for the non-detects.
UCL	The upper 95 percent one-tailed confidence interval on the mean for lognormally distributed data (Gilbert, 1987).
VOCs	Volatile organic compounds.

Table 5-4
Selection of Constituents of Potential Concern in Surficial Soils
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituents	Maximum Concentration	Background Concentration	Risk-Based Screening Value *		COC?	COC Basis
Carcinogenic PAHs (µg/kg)						
Benzo(a)anthracene	4,900	NAP	870		YES	A, C
Benzo(b)fluoranthene	7,800	NAP	870		YES	A, C
Benzo(k)fluoranthene	5,300	NAP	8,700		YES	C
Benzo(a)pyrene	7,800	NAP	87		YES	A, C
Chrysene	6,000	NAP	87,000		YES	C
Dibenzo(a,h)anthracene	2,000	NAP	87		YES	A, C
Indeno(1,2,3-cd)pyrene	5,500	NAP	870		YES	A, C
Non-Carcinogenic PAHs (µg/kg)						
Acenaphthene	1,900	NAP	470,000		no	B
Acenaphthylene	1,600	NAP	160,000	[a]	no	B
Anthracene	2,000	NAP	2,300,000		no	B
Benzo(g,h,i)perylene	4,700	NAP	160,000	[a]	no	B
Fluoranthene	12,000	NAP	310,000		no	B
Fluorene	2,000	NAP	310,000		no	B
2-Methylnaphthalene	1,400	NAP	160,000		no	B
Naphthalene	6,400	NAP	160,000		no	B
Phenanthrene	7,500	NAP	160,000	[a]	no	B
Pyrene	10,000	NAP	230,000		no	B
VOCs (µg/kg)						
Acetone	130	NAP	780,000		no	B
Benzene	9.4	NAP	12,000		no	B
Bromomethane	7.3	NAP	11,000		no	B
Ethylbenzene	8.4	NAP	780,000		no	B
Methylene chloride	76	NAP	85,000		no	B
m- and p-Xylenes	6.9	NAP	16,000,000		no	B
SVOCs (µg/kg)						
Dibenzofuran	1,400	NAP	31,000		no	B
Di-n-butylphthalate	1,800	NAP	780,000		no	B
1,2,4-Trichlorobenzene	3,700	NAP	78,000		no	B
Inorganics (mg/kg)						
Arsenic	220	11	0.43		YES	A
Barium	170	52	550		no	B
Beryllium	3.7	0.58	16		no	B
Chromium	92	30	23	[b]	YES	A

Footnotes appear on page 2.
Inorganics (mg/kg) (continued)

Table 5-4
Selection of Constituents of Potential Concern in Surficial Soils
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituents	Maximum Concentration	Background Concentration	Risk-Based Screening Value *		COC?	COC Basis
Copper	15	8.3	310		no	B
Cyanide	5.4	NAP	160		no	B
Lead	120	12	400	[c]	no	B
Mercury	0.32	0.034	0.78	[d]	no	B
Nickel	18	8.1	160		no	B
Zinc	65	31	2,300		no	B

* The risk-based screening value (carcinogenic risk=10^{-6}; non-carcinogenic hazard quotient=0.1) is based on residential exposure to surface soil (USEPA, 2000).

[a] The risk-based screening value for naphthalene is used as a surrogate.

[b] The risk-based screening value for hexavalent chromium is reported.

[c] The USEPA Office of Solid Waste recommends that soil lead levels less than 400 mg/kg are generally safe for residential use.

[d] The risk-based screening value for methylmercury is reported.

A Greater than the risk-based screening value.

B Less than the risk-based screening value.

C The chemical is a member of a chemical class which contains other COCs.

COC Constituent of potential concern.

µg/kg Micrograms per kilogram.

mg/kg Milligrams per kilogram.

NAP Not applicable.

PAHs Polycyclic aromatic hydrocarbons.

SVOCs Semivolatile organic compounds.

VOCs Volatile organic compounds.

TABLE 5-5
Selection of Constituents of Potential Concern in Total Soils
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituents	Maximum Detected Concentration	Background Concentration	Risk-Based Screening Value*	COC?	COC Basis
Carcinogenic PAHs (µg/kg)					
Benzo(a)anthracene	130,000	NAP	7,800	YES	A, C
Benzo(b)fluoranthene	120,000	NAP	7,800	YES	A, C
Benzo(k)fluoranthene	21,000	NAP	78,000	YES	C
Benzo(a)pyrene	86,000	NAP	780	YES	A, C
Chrysene	97,000	NAP	780,000	YES	C
Dibenzo(a,h)anthracene	2,000	NAP	780	YES	A, C
Indeno(1,2,3-cd)pyrene	58,000	NAP	7,800	YES	A, C
Non-Carcinogenic PAHs (µg/kg)					
Acenaphthene	130,000	NAP	12,000,000	no	B
Acenaphthylene	2,900	NAP	4,100,000 [a]	no	B
Anthracene	120,000	NAP	61,000,000	no	B
Benzo(g,h,i)perylene	36,000	NAP	4,100,000 [a]	no	B
Fluoranthene	800,000	NAP	8,200,000	no	B
Fluorene	300,000	NAP	8,200,000	no	B
2-Methylnaphthalene	46,000	NAP	4,100,000	no	B
Naphthalene	300,000	NAP	4,100,000	no	B
Phenanthrene	900,000	NAP	4,100,000 [a]	no	B
Pyrene	490,000	NAP	6,100,000	no	B
VOCs (µg/kg)					
Acetone	3,200	NAP	20,000,000	no	B
Benzene	6,900	NAP	100,000	no	B
Bromomethane	7.3	NAP	290,000	no	B
Carbon tetrachloride	9.0	NAP	44,000	no	B
Ethylbenzene	2,400	NAP	20,000,000	no	B
Ethyl methacrylate	11	NAP	18,000,000	no	B
2-Hexanone	82	NAP	8,200,000	no	B
Methylene chloride	76	NAP	760,000	no	B
Styrene	150	NAP	41,000,000	no	B
Tetrachloroethene	6.6	NAP	110,000	no	B
1,1,2,2-Tetrachloroethane	5.1	NAP	29,000	no	B
Toluene	5,500	NAP	41,000,000	no	B
Trichloroethene	14	NAP	520,000	no	B
m- and p-Xylenes	4,700	NAP	410,000,000	no	B
o-Xylene	2,900	NAP	410,000,000	no	B
SVOCs (µg/kg)					
Dibenzofuran	95,000	NAP	820,000	no	B
Di-n-butylphthalate	2,900	NAP	20,000,000	no	B
2,4-Dimethylphenol	580	NAP	4,100,000	no	B
2-Methylphenol (o-Cresol)	1,400	NAP	10,000,000	no	B

Footnotes appear on page 2.

TABLE 5-5
Selection of Constituents of Potential Concern in Total Soils
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituents	Maximum Detected Concentration	Background Concentration	Risk-Based Screening Value*		COC?	COC Basis
3-Methylphenol (m-Cresol)	1,700	NAP	10,000,000		no	B
4-Methylphenol (p-Cresol)	1,700	NAP	1,000,000		no	B
Phenol	2,700	NAP	120,000,000		no	B
1,2,4-Trichlorobenzene	3,700	NAP	2,000,000		no	B
Inorganics (mg/kg)						
Antimony	59	NA	82		no	B
Arsenic	220	8.8	3.8		YES	A
Barium	250	65	14,000		no	B
Beryllium	8.9	1.1	410		no	B
Cadmium	10	NA	100		no	B
Chromium	110	28	610	[b]	no	B
Copper	32,000	14	8,200		YES	A
Cyanide	38	NA	4,100		no	B
Lead	1,200	11	400	[c]	YES	A
Mercury	3.9	0.038	20	[d]	no	B
Nickel	44	18	4,100		no	B
Silver	2.0	NA	1,000		no	B
Zinc	1,300	37	61,000		no	B

* The risk-based screening value (carcinogenic risk=10^{-6}; non-carcinogenic hazard quotient=0.1) is based on industrial exposure to total soil (USEPA, 2000).

[a] The risk-based screening value for naphthalene is used as a surrogate.
[b] The risk-based screening value for hexavalent chromium is reported.
[c] The USEPA Office of Solid Waste recommends that soil lead levels less than 400 mg/kg are generally safe for residential use.
[d] The risk-based screening value for methylmercury is reported.

A Greater than the risk-based screening value.
B Less than the risk-based screening value.
C The chemical is a member of a chemical class which contains other COCs.

COC Constituent of potential concern.
µg/kg Micrograms per kilogram.
mg/kg Milligrams per kilogram.
NA Not available.
NAP Not applicable.
PAHs Polycyclic aromatic hydrocarbons.
VOCs Volatile organic compounds.
SVOCs Semivolatile organic compounds.

TABLE 5-6
Selection of Constituents of Potential Concern in Process Water
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituents	Maximum Detected Concentration	Background Concentration	Risk-Based Screening Value*	COC?	COC Basis
VOCs (µg/L)					
Toluene	2.1	NAP	75	no	B
1,2,3-Trichloropropane	1.3	NAP	0.0053	YES	A
m- and p-Xylenes	1.0	NAP	1,200	no	B
o-Xylene	0.60	NAP	1,200	no	B
Inorganics (mg/L)					
Barium, Total	0.23	NAP	0.26	no	B

* The risk-based screening value (carcinogenic risk=10^{-6}; non-carcinogenic hazard quotient=0.1) is based on residential ingestion of tap water (USEPA, 2000).

A Greater than the risk-based screening value.
B Less than the risk-based screening value.
COC Constituent of potential concern.
µg/L Micrograms per liter.
mg/L Milligrams per liter.
NAP Not applicable.
VOCs Volatile organic compounds.

TABLE 5-7
Oral Reference Doses, Inhalation Reference Concentrations, Target Sites, and Confidence Levels for Constituents of Potential Concern
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	RfDo (mg/kg/day)		RfC (mg/m³)		Target Sites		Confidence Level/ Uncertainty Factor	
	Subchronic	Chronic	Subchronic	Chronic	Oral	Inhalation	Oral	Inhalation
PAHs								
Benzo(a)anthracene	3.0E-01	3.0E-02 *	NA	NA	kidney	NA	low/3000	NA
Benzo(b)fluoranthene	3.0E-01	3.0E-02 *	NA	NA	kidney	NA	low/3000	NA
Benzo(k)fluoranthene	3.0E-01	3.0E-02 *	NA	NA	kidney	NA	low/3000	NA
Benzo(a)pyrene	3.0E-01	3.0E-02 *	NA	NA	kidney	NA	low/3000	NA
Chrysene	3.0E-01	3.0E-02 *	NA	NA	kidney	NA	low/3000	NA
Dibenzo(a,h)anthracene	3.0E-01	3.0E-02 *	NA	NA	kidney	NA	low/3000	NA
Indeno(1,2,3-cd)pyrene	3.0E-01	3.0E-02 *	NA	NA	kidney	NA	low/3000	NA
VOC								
1,2,3-Trichloropropane	6.0E-02	6.0E-03	NA	4.9E-03 **	WB, liver, kidney, blood	NA	low/1000	NA
Inorganics								
Arsenic	3.0E-04	3.0E-04	NA	NA	skin, vascular	NA	medium/3	NA
Chromium VI	2.0E-02	3.0E-03	3.0E-04	1.0E-04	NR	lung	low/300	medium/300
Copper	3.7E-02	3.7E-02	NA	NA	gastrointestinal tract	NA	NA	NA
Lead	NA	NA	NA	NA	CNS	NA	NA	NA

References: Unless otherwise noted, chronic values are from IRIS (2000); subchronic values are from HEAST (USEPA, 1997a).
* Pyrene used as a surrogate.
** Reference: National Center for Environmental Assessment (USEPA, 2000).

CNS Central nervous system.
mg/kg/day Milligrams per kilogram per day.
mg/m³ Milligrams per cubic meter.
NA Not available.
PAHs Polycyclic aromatic hydrocarbons.
RfC Inhalation reference concentration.
RfDo Oral reference dose.
VOC Volatile organic compound.
WB Whole body (includes increased mortality and changes to body weight).

TABLE 5-8
Oral Cancer Slope Factors, Inhalation Unit Risks, Tumor Sites, and USEPA Cancer Classifications for Constituents of Potential Concern
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	Oral CSF $(mg/kg/day)^{-1}$		Inhalation Unit Risk $(\mu g/m^3)^{-1}$		Tumor site		USEPA Classification
					Oral	Inhalation	
PAHs							
Benzo(a)anthracene	7.3E+00	*	8.8E-04	*	stomach	respiratory tract	B2
Benzo(b)fluoranthene	7.3E+00	*	8.8E-04	*	stomach	respiratory tract	B2
Benzo(k)fluoranthene	7.3E+00	*	8.8E-04	*	stomach	respiratory tract	B2
Benzo(a)pyrene	7.3E+00	I	8.8E-04	N	stomach	respiratory tract	B2
Chrysene	7.3E+00	*	8.8E-04	*	stomach	respiratory tract	B2
Dibenzo(a,h)anthracene	7.3E+00	*	8.8E-04	*	stomach	respiratory tract	B2
Indeno(1,2,3-cd)pyrene	7.3E+00	*	8.8E-04	*	stomach	respiratory tract	B2
VOC							
1,2,3-Trichloropropane	2.0E+00	N	NA		multiple sites	NA	B2
Inorganics							
Arsenic	1.5E+00	I	4.3E-03	I	skin	respiratory tract	A
Chromium VI	NAP		1.2E-02	I	NA	lung	A
Lead	NA		NA		NA	NA	B2

References:
H USEPA, 1997a.
I IRIS, 2000.
N USEPA, 2000.

* Benzo(a)pyrene used as a surrogate, using the benzo(a)pyrene TEFs to calculate equivalent benzo(a)pyrene concentrations for each.
A Known human carcinogen.
B2 Probable human carcinogen; sufficient evidence in animals and inadequate data in humans.
CSF Cancer slope factor.
$(\mu g/m^3)^{-1}$ Inverse of micrograms per cubic meter.
$(mg/kg/day)^{-1}$ Inverse of milligrams per kilogram per day.
NA Not available.
NAP Not applicable; carcinogenic only by inhalation.
PAHs Polycyclic aromatic hydrocarbons.
VOC Volatile organic compound.

TABLE 5-9
Adjusted Toxicity Values Used to Assess Dermal Exposure for Constituents of Potential Concern
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	RfDo (mg/kg/day) Subchronic	RfDo (mg/kg/day) Chronic	CSFo (kg-day/mg)	Oral Absorption Efficiency	[ref]	RfDa (mg/kg/day) Subchronic	RfDa (mg/kg/day) Chronic	CSFa (kg-day/mg)
PAHs								
Benzo(a)anthracene	3.0E-01	3.0E-02	7.3E+00	0.85	a	2.6E-01	2.6E-02	8.6E+00
Benzo(b)fluoranthene	3.0E-01	3.0E-02	7.3E+00	0.85	a	2.6E-01	2.6E-02	8.6E+00
Benzo(k)fluoranthene	3.0E-01	3.0E-02	7.3E+00	0.85	a	2.6E-01	2.6E-02	8.6E+00
Benzo(a)pyrene	3.0E-01	3.0E-02	7.3E+00	0.85	a	2.6E-01	2.6E-02	8.6E+00
Chrysene	3.0E-01	3.0E-02	7.3E+00	0.85	a	2.6E-01	2.6E-02	8.6E+00
Dibenzo(a,h)anthracene	3.0E-01	3.0E-02	7.3E+00	0.85	a	2.6E-01	2.6E-02	8.6E+00
Indeno(1,2,3-cd)pyrene	3.0E-01	3.0E-02	7.3E+00	0.85	a	2.6E-01	2.6E-02	8.6E+00
VOC								
1,2,3-Trichloropropane	6.0E-02	6.0E-03	2.0E+00	0.80	b	4.8E-02	4.8E-03	2.5E+00
Inorganics								
Arsenic	3.0E-04	3.0E-04	1.5E+00	0.95	a	2.9E-04	2.9E-04	1.6E+00
Chromium VI	2.0E-02	3.0E-03	NAP	0.02	a	4.0E-04	6.0E-05	NAP
Copper	3.7E-02	3.7E-02	NC	0.60	a	2.2E-02	2.2E-02	NC
Lead	NA	NA	NA	0.15	a	NA	NA	NA

References: a ATSDR, 1997. b USEPA, 1995.

CSF	Cancer slope factor for oral exposure (CSFo) and adjusted for dermal exposure (CSFa).
kg-day/mg	Kilograms-day per milligram.
mg/kg/day	Milligrams per kilogram per day.
NA	Not available.
NAP	Not applicable.
NC	Not evaluated as a carcinogen.
PAHs	Polycyclic aromatic hydrocarbons.
RfD	Reference dose for oral exposure (RfDo) and adjusted for dermal exposure (RfDa).
VOC	Volatile organic compound.

TABLE 5-10
Physical and Chemical Parameters for Constituents of Potential Concern
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	Diffusivity in Air (cm^2/sec)	Henry's Law Constant ($atm\text{-}m^3/mol$) (25 °C)	Koc (mL/g)	Dermal Absorption Efficiency
PAHs				
Benzo(a)anthracene	0.04564	8.00E-06	1,400,000	0.03
Benzo(b)fluoranthene	0.04392	1.20E-05	550,000	0.03
Benzo(k)fluoranthene	0.04392	4.20E-08	4,400,000	0.03
Benzo(a)pyrene	0.04653	2.40E-06	398,000 - 1,900,000	0.03
Chrysene	0.04531	3.15E-07	240,000	0.03
Dibenzo(a,h)anthracene	0.05707	7.33E-09	1,700,000	0.03
Indeno(1,2,3-cd)pyrene	0.05728	2.96E-20	31,000,000	0.03
VOC				
1,2,3-Trichloropropane	0.07532	2.21E-04	63.1	0.01
Inorganics				
Arsenic	—	—	—	0.001
Chromium VI	—	—	—	0.001
Copper	—	—	—	0.001
Lead	—	—	—	0.0006

References: ATSDR, 1997; HSDB, 2000; Lyman, 1990; Montgomery and Welkom, 1990; USEPA, 1995.

$atm\text{-}m^3/mol$	Atmospheres-cubic meters per mole.
°C	Degrees Celsius.
cm^2/sec	Square centimeters per second.
Koc	Organic carbon partition coefficient.
mL/g	Milliliters per gram.
PAHs	Polycyclic aromatic hydrocarbons.
VOC	Volatile organic compound.

TABLE 5-11
Exposure Assumptions
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Parameter	(units)	Site Worker – Soil		Site Worker – Process Water		Excavation Worker – Soil		Trespasser (Age 7 - 16 years) – Soil	
Body Weight	(kg)	70	[a]	70	[a]	70	[a]	45	[b]
Exposure Frequency	(days/year)	250	[a]	12	[c]	5 day/wk	[c]	24	[c]
Exposure Duration	(years)	25	[a]	25	[a]	12 weeks	[c]	10	[c]
Exposure Time	(hours/day)	–		1	[c]	–		–	
Ingestion Rate of Soil	(mg/day)	50	[a]	–		480	[a]	50	[c]
Breathing Rate	(m^3/day)	20	[a]	20	[a]	20	[a]	14	[b]
Exposed Skin Surface Area	(cm^2)	3,160	[b]	3,160	[b]	3,160	[b]	4,000	[b]
Soil Adherence Rate	(mg/cm^2/day)	0.01	[b]	–		0.11	[b]	0.05	[b]

cm^2	Square centimeters.	[a]	USEPA (1995, 1991b).
day/wk	Days per week.	[b]	USEPA (1997b).
kg	Kilograms.	[c]	Professional judgment (see text).
m^3/day	Cubic meters per day.		
mg/cm^2/day	Milligrams per square centimeter per day.		
mg/day	Milligrams per day.		

Table 5-12
Risk Equations for Worker and Trespasser Exposure to Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

ROUTE-SPECIFIC RISKS:

Oral:

$$\begin{matrix} ELCR_o \text{ or} \\ HQ_o \end{matrix} = \frac{EPC_S \times IR_S \times EF \times EP}{UC_1 \times BW \times (AP_C \text{ or } AP_{NC}) \times [(1/CSF_0) \text{ or } RfD_0]}$$

Dermal:

$$\begin{matrix} ELCR_d \text{ or} \\ HQ_d \end{matrix} = \frac{EPC_S \times SSA \times SAR \times ABS \times EF \times EP}{UC_1 \times BW \times (AP_C \text{ or } AP_{NC}) \times [(1/CSF_a) \text{ or } RfD_a]}$$

Inhalation:

$$\begin{matrix} ELCR_i \text{ or} \\ HQ_i \end{matrix} = \frac{EPC_S \times (1/VF + 1/PEF) \times EF \times EP}{(AP_C \text{ or} AP_{NC}) \times [(UC_2/UR_i) \text{ or } RfC]}$$

where:

$$VF = Q/C \times \frac{(3.1416 \times á \times T)^{1/2}}{2 \times Dei \times Pa \times Kas} \times UC_3$$

$$PEF = Q/C \times \frac{3{,}600 \text{ sec/ hr}}{RPF \times (1-G) \times (Um/Ut)^3 \times F_x}$$

$$\alpha = \frac{Dei \times Pa}{Pa + [\rho s \times (1 - Pa)/Kas]}$$

$$Dei = Di \times (Pa^{3.33}/Pt^2)$$

$$K_{as} = H/(RT \times K_d)$$

CANCER RISK:

$$ELCR = ELCR_o + ELCR_d + ELCR_i$$

NON-CANCER RISK:

$$HI = HQ_o + HQ_d + HQ_i$$

Table 5-12
Risk Equations for Worker and Trespasser Exposure to Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

where:

α	Alpha; calculation intermediate (cm^2/sec).
ABS	Dermal absorption efficiency.
AP_C	Averaging period for cancer effects (25,550 days); 70 yrs × 365 days/year.
AP_{NC}	Averaging period for non-cancer effects (days).
BW	Body weight (kg).
CSF	Cancer slope factor for oral (CSF_o) or dermal (adjusted to an absorbed dose, CSF_a) exposure (kg-day/mg; inverse of mg/kg/day).
Dei	Effective diffusivity (cm^2/sec).
Di	Diffusivity in air (cm^2/sec).
EF	Exposure frequency (days/year).
ELCR	Excess lifetime cancer risk (unitless).
EPCs	Exposure point concentration in soil (mg/kg).
EP	Exposure period (years).
F_X	Function of Ut/Um (0.000152) (unitless); $F_X = 0.18 \times [8x^3 + 12x] \times \exp[-(x^2)]$, where $x = 0.886 \times (Ut/Um)$.
Foc	Fraction organic carbon in soil (0.02).
G	Fraction of vegetative cover (unitless); conservatively assumed as zero.
H	Henry's Law Constant (atm-m^3/mol).
HI	Hazard index (unitless); sum of the HQs.
HQ	Hazard quotient (unitless).
IR_S	Ingestion rate of soil (mg/day).
Kas	Soil-air partition coefficient (g soil/cm^3 air).
Kd	Soil-water partition coefficient (cm^3/g or mL/g). Kd is calculated as Foc × Koc for organics.
Koc	Organic carbon partition coefficient (cm^3/g or mL/g); average of range in Table 5-10.
Pa	Air-filled soil porosity (0.20) (unitless).
PEF	Particulate emission factor (m^3/kg).
Pt	Total soil porosity (0.35) (unitless).
ρs	True soil or particle density (2.65 g/cm^3).
Q/C	Emission flux per unit concentration (75.0 g/m^2/sec)/(kg/m^3) (USEPA, 1996b).
RfC	Subchronic reference concentration for inhalation exposure (mg/m^3).
RfD	Subchronic reference dose for oral (RfD_o) or dermal (adjusted to an absorbed dose, RfD_a) intake (mg/kg/day).
RPF	Respirable particle fraction (0.036 g/m^2/hr) (USEPA, 1996b).
RT	Product of the ideal gas constant (8.206×10^{-5} atm-m^3/mol/K) and the Kelvin temperature (298 K at 25 °C) = 0.02445 atm-m^3/mol.
SAR	Soil adherence rate (mg/cm^2/day).
SSA	Exposed skin surface area (cm^2).
T	Exposure interval (7.9×10^8 sec).
UC_1	Unit conversion #1 (10^6 mg/kg).
UC_2	Unit conversion #2 (0.001 mg/µg).
UC_3	Unit conversion #3 (0.0001 m^2/cm^2).
Um	Wind speed (3.13 m/sec).
UR_i	Unit cancer risk for inhalation exposure (m^3/µg).
Ut	Equivalent threshold value of windspeed at 10 meters (12.8 m/sec).
VF	Volatilization factor (m^3/kg).

Table 5-12
Risk Equations for Worker and Trespasser Exposure to Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE CALCULATION: Benzo(a)pyrene, Site Worker exposure to benzo(a)pyrene in surface soil.

$$x = 0.886 \times \left[(12.8 \text{ m/sec}) / (3.13 \text{ m/sec}) \right] = 3.62$$

$$F_X = 0.18 \times \left[(8 \times 3.62^3) + (12 \times 3.62) \right] \times \exp\left[-(3.62^2) \right] = 0.000152$$

$$PEF = \left[\frac{75.0 \text{ g/m}^2\text{/sec}}{\text{kg/m}^3} \right] \times \frac{(3{,}600 \text{ sec/hr})}{(0.036 \text{ g/m}^2\text{/hr}) \times (1-0) \times [(3.13 \text{ m/sec}) / (12.8 \text{ m/sec})]^3 \times (0.000152)}$$
$$= 3.38 \times 10^{12} \text{ m}^3\text{/kg}$$

$$Kas = \frac{(2.40 \times 10^{-6} \text{ atm-m}^3\text{/mol})}{(0.02445 \text{ atm} \cdot \text{m}^3\text{/mol}) \times (1{,}149{,}000 \text{ cm}^3\text{/g}) \times (0.02)} = 4.27 \times 10^{-9} \text{ g/cm}^3$$

$$Dei = (0.04653 \text{ cm}^2\text{/sec}) \times [(0.2)^{3.33}/(0.35)^2] = 0.00179 \text{ cm}^2\text{/sec}$$

$$\alpha = \frac{(0.00179 \text{ cm}^2\text{/sec}) \times 0.2}{0.2 + [(2.65 \text{ g/cm}^3) \times (1-0.2)/(4.27 \times 10^{-9} \text{ g/cm}^3)]} = 7.20 \times 10^{-13} \text{ cm}^2\text{/sec}$$

$$VF = \frac{75.0 \text{ g/m}^2\text{/sec}}{\text{kg/m}^3} \times \frac{[3.1416 \times (7.20 \times 10^{-13} \text{cm}^2\text{/sec}) \times (7.9 \times 10^8 \text{ sec})]^{1/2}}{2 \times (0.00179 \text{ cm}^2\text{/sec}) \times 0.2 \times (4.27 \times 10^{-9} \text{g/cm}^3)} \times (10^{-4} \text{m}^2\text{/cm}^2)$$

$$= 1.04 \times 10^8 \text{ m}^3\text{/kg}$$

Cancer Risk:

$$ELCR_o = \frac{(7.8 \text{ mg/kg}) \times (50 \text{ mg/day}) \times (250 \text{ days/yr}) \times (25 \text{ yrs})}{(10^6 \text{ mg/kg}) \times (70 \text{ kg}) \times (25{,}550 \text{ days}) \times 1/(7.3 \text{ kg} \cdot \text{day/mg})}$$
$$= 9.9 \times 10^{-6}$$

$$ELCR_d = \frac{(7.8 \text{ mg/kg}) \times (3{,}160 \text{ cm}^2) \times (0.01 \text{ mg/cm}^2\text{/day}) \times (0.03) \times (250 \text{ days/yr}) \times (25 \text{ yrs})}{(10^6 \text{ mg/kg}) \times (70 \text{ kg}) \times (25{,}550 \text{ days}) \times 1/(8.6 \text{ kg} \cdot \text{day/mg})}$$
$$= 2.2 \times 10^{-7}$$

Table 5-12
Risk Equations for Worker and Trespasser Exposure to Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

$$ELCR_i = \frac{(7.8\ mg/kg) \times [(1/1.04 \times 10^8\ m^3/kg) + (1/3.38 \times 10^{12}\ m^3/kg)] \times (250\ days/yr) \times (25\ yrs)}{(25{,}550\ days) \times [(0.001\ mg/\mu g) / (8.8 \times 10^{-4}\ m^3/\mu g)]}$$

$$= 1.6 \times 10^{-8}$$

$$ELCR = (9.9 \times 10^{-6}) + (2.2 \times 10^{-7}) + (1.6 \times 10^{-8}) = 1.0 \times 10^{-5}$$

Non-Cancer Risk:

$$HQ_o = \frac{(7.8\ mg/kg) \times (50\ mg/day) \times (250\ days/yr) \times (25yrs)}{(10^6\ mg/kg) \times (70\ kg) \times (9{,}125\ days) \times (3.0 \times 10^{-2}\ mg/kg/day)}$$

$$= 1.3 \times 10^{-4}$$

$$HQ_d = \frac{(7.8\ mg/kg) \times (3{,}160\ cm^2) \times (0.01\ mg/cm^2/day) \times (0.03) \times (250\ days/yr) \times (25\ yrs)}{(10^6\ mg/kg) \times (70\ kg) \times (9{,}125\ days) \times (2.6 \times 10^{-2}\ mg/kg/day)}$$

$$= 2.8 \times 10^{-6}$$

$$HQ_i = \frac{(7.8\ mg/kg) \times [(1/1.04 \times 10^8\ m^3/kg) + (1/3.38 \times 10^{12}\ m^3/kg)] \times (250\ days/yr) \times (25\ yrs)}{(9{,}125\ days) \times NA}$$

$$= NA$$

$$HI = (1.3 \times 10^{-4}) + (2.8 \times 10^{-6}) + NA = 1.3 \times 10^{-4} = 0.00013$$

TABLE 5-13
Risk Calculations for Site Worker Exposure to Surficial Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	EPCs		CANCER RISK: Route-Specific Risks Oral	Dermal	Inhalation	CANCER RISK: Calculated Risk	NON-CANCER RISK: Route-Specific Risks Oral	Dermal	Inhalation	NON-CANCER RISK: Calculated Risk
PAHs (µg/kg)			ELCRo	ELCRd	ELCRi	ELCR	HQo	HQd	HQi	HI
Benzo(a)anthracene	490	*	6.3E-07	1.4E-08	1.7E-09	6.4E-07	8.0E-06	1.8E-07	NA	8.2E-06
Benzo(b)fluoranthene	780	*	9.9E-07	2.2E-08	5.1E-09	1.0E-06	1.3E-05	2.8E-07	NA	1.3E-05
Benzo(k)fluoranthene	53	*	6.8E-08	1.5E-09	7.2E-12	6.9E-08	8.6E-07	1.9E-08	NA	8.8E-07
Benzo(a)pyrene	7,800	*	9.9E-06	2.2E-07	1.6E-08	1.0E-05	1.3E-04	2.8E-06	NA	1.3E-04
Chrysene	6.0	*	7.7E-09	1.7E-10	9.7E-12	7.8E-09	9.8E-08	2.2E-09	NA	1.0E-07
Dibenzo(a,h)anthracene	2,000	*	2.6E-06	5.7E-08	2.1E-10	2.6E-06	3.3E-05	7.3E-07	NA	3.3E-05
Indeno(1,2,3-cd)pyrene	550	*	7.0E-07	1.6E-08	3.5E-14	7.2E-07	9.0E-06	2.0E-07	NA	9.2E-06
Inorganics (mg/kg)										
Arsenic	220	*	5.8E-05	3.9E-08	6.8E-11	5.8E-05	3.6E-01	2.3E-04	NA	3.6E-01
Chromium	92	*	NAP	NAP	8.0E-11	8.0E-11	1.5E-02	4.7E-04	1.9E-07	1.5E-02
					TOTAL ELCR	**7E-05**			**TOTAL HI**	**0.4**

* EPC is equal to the maximum detected concentration.

ELCR	Excess lifetime cancer risk.
EPCs	Exposure point concentration in surface soil (Table 5-1).
HI	Hazard index (sum of the HQs).
HQ	Hazard quotient.
mg/kg	Milligrams per kilogram.
µg/kg	Micrograms per kilogram.
PAHs	Polycyclic aromatic hydrocarbons.
NA	Not available.
NAP	Not applicable.

TABLE 5-14
Risk Calculations for Site Worker Exposure to Total Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	EPCs	CANCER RISK				NON-CANCER RISK			
		Route-Specific Risks			Calculated	Route-Specific Risks			Calculated
		Oral	Dermal	Inhalation	Risk	Oral	Dermal	Inhalation	Risk
PAHs (µg/kg)		ELCRo	ELCRd	ELCRi	ELCR	HQo	HQd	HQi	HI
Benzo(a)anthracene	850	1.1E-06	2.4E-08	2.9E-09	1.1E-06	1.4E-05	3.1E-07	NA	1.4E-05
Benzo(b)fluoranthene	740	9.4E-07	2.1E-08	4.8E-09	9.7E-07	1.2E-05	2.7E-07	NA	1.2E-05
Benzo(k)fluoranthene	19	2.4E-08	5.4E-10	2.8E-12	2.5E-08	3.1E-07	6.9E-09	NA	3.2E-07
Benzo(a)pyrene	5,600	7.1E-06	1.6E-07	1.2E-08	7.3E-06	9.1E-05	2.0E-06	NA	9.3E-05
Chrysene	7.2	9.2E-09	2.0E-10	1.2E-11	9.4E-09	1.2E-07	2.6E-09	NA	1.2E-07
Dibenzo(a,h)anthracene	590	7.5E-07	1.7E-08	6.2E-11	7.7E-07	9.6E-06	2.1E-07	NA	9.8E-06
Indeno(1,2,3-cd)pyrene	290	3.7E-07	8.3E-09	1.8E-14	3.8E-07	4.7E-06	1.1E-07	NA	4.8E-06
Inorganics (mg/kg)									
Arsenic	20	5.2E-06	3.5E-09	6.2E-12	5.2E-06	3.3E-02	2.1E-05	NA	3.3E-02
Copper	79	NC	NC	6.9E-11	6.9E-11	1.0E-03	1.1E-06	NA	1.0E-03
Lead	84	NA	NA	NA	NA	NA	NA	NA	NA
				TOTAL ELCR	2E-05			TOTAL HI	0.03

ELCR	Excess lifetime cancer risk.	µg/kg	Micrograms per kilogram.
EPCs	Exposure point concentration in total soil (Table 5-2).	PAHs	Polycyclic aromatic hydrocarbons.
HI	Hazard index (sum of the HQs).	NA	Not available.
HQ	Hazard quotient.	NC	Not a suspected carcinogen.
mg/kg	Milligrams per kilogram.		

TABLE 5-15
Risk Calculations for Excavation Worker Exposure to Total Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	EPCs	CANCER RISK				NON-CANCER RISK			
		Route-Specific Risks			Calculated	Route-Specific Risks			Calculated
		Oral	Dermal	Inhalation	Risk	Oral	Dermal	Inhalation	Risk
		ELCRo	ELCRd	ELCRi	ELCR	HQo	HQd	HQi	HI
PAHs (µg/kg)									
Benzo(a)anthracene	850	1.0E-07	2.6E-09	2.2E-11	1.0E-07	1.4E-05	3.5E-07	NA	1.4E-05
Benzo(b)fluoranthene	740	8.7E-08	2.2E-09	3.7E-11	8.9E-08	1.2E-05	3.0E-07	NA	1.2E-05
Benzo(k)fluoranthene	19	2.2E-09	5.7E-11	2.E-14	2.3E-09	3.1E-07	7.8E-09	NA	3.2E-07
Benzo(a)pyrene	5,600	6.6E-07	1.7E-08	9.E-11	6.8E-07	9.1E-05	2.3E-06	NA	9.4E-05
Chrysene	7.2	8.5E-10	2.2E-11	9.1E-14	8.7E-10	1.2E-07	2.9E-09	NA	1.2E-07
Dibenzo(a,h)anthracene	590	6.9E-08	1.8E-09	4.8E-13	7.1E-08	9.6E-06	2.4E-07	NA	9.9E-06
Indeno(1,2,3-cd)pyrene	290	3.4E-08	8.7E-10	1.9E-16	3.5E-08	4.7E-06	1.2E-07	NA	4.9E-06
Inorganics (mg/kg)									
Arsenic	20	4.8E-07	3.7E-10	2.2E-10	4.8E-07	3.3E-01	2.4E-04	NA	3.3E-01
Copper	79	NC	NC	NC	NC	1.0E-02	1.3E-05	NA	1.0E-02
Lead	84	NA	NA	NA	NA	NA	NA	NA	NA
				TOTAL ELCR	**1E-06**			**TOTAL HI**	**0.3**

ELCR Excess lifetime cancer risk.
EPCs Exposure point concentration in total soil (Table 5-2).
HI Hazard index (sum of the HQs).
HQ Hazard quotient.
mg/kg Milligrams per kilogram.
µg/kg Micrograms per kilogram.
NA Not available.
NC Not a suspected carcinogen.
PAHs Polycyclic aromatic hydrocarbons.

TABLE 5-16
Risk Calculations for Trespasser Exposure to Surficial Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	EPCs		CANCER RISK: Route-Specific Risks Oral	Dermal	Inhalation	CANCER RISK: Calculated Risk	NON-CANCER RISK: Route-Specific Risks Oral	Dermal	Inhalation	NON-CANCER RISK: Calculated Risk
PAHs (µg/kg)			ELCRo	ELCRd	ELCRi	ELCR	HQo	HQd	HQi	HI
Benzo(a)anthracene	490	*	3.7E-08	5.3E-09	5.2E-11	4.3E-08	1.2E-06	1.7E-07	NA	1.4E-06
Benzo(b)fluoranthene	780	*	5.9E-08	8.4E-09	1.6E-10	6.8E-08	1.9E-06	2.7E-07	NA	2.2E-06
Benzo(k)fluoranthene	53	*	4.0E-09	5.7E-10	2.2E-13	4.6E-09	1.3E-07	1.8E-08	NA	1.5E-07
Benzo(a)pyrene	7,800	*	5.9E-07	8.4E-08	5.0E-10	6.8E-07	1.9E-05	2.7E-06	NA	2.2E-05
Chrysene	6.0	*	4.6E-10	6.5E-11	3.0E-13	5.2E-10	1.5E-08	2.1E-09	NA	1.7E-08
Dibenzo(a,h)anthracene	2,000	*	1.5E-07	2.2E-08	6.5E-12	1.7E-07	4.9E-06	6.9E-07	NA	5.6E-06
Indeno(1,2,3-cd)pyrene	550	*	4.2E-08	5.9E-09	1.1E-15	4.8E-08	1.3E-06	1.9E-07	NA	1.5E-06
Inorganics (mg/kg)										
Arsenic	220	*	3.4E-06	1.5E-08	2.1E-12	3.5E-06	5.4E-02	2.2E-04	NA	5.4E-02
Chromium	92	*	NAP	NAP	2.5E-12	2.5E-12	2.2E-03	4.5E-04	1.5E-08	2.7E-03
					TOTAL ELCR	**4E-06**			**TOTAL HI**	**0.06**

* EPC is equal to the maximum detected concentration.

ELCR Excess lifetime cancer risk.
EPCs Exposure point concentration in surface soil (Table 5-1).
HI Hazard index (sum of the HQs).
HQ Hazard quotient.
mg/kg Milligrams per kilogram.
µg/kg Micrograms per kilogram.
PAHs Polycyclic aromatic hydrocarbons.
NA Not available.
NAP Not applicable.

TABLE 5-17
Risk Calculations for Trespasser Exposure to Total Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	EPCs	CANCER RISK				NON-CANCER RISK			
		Route-Specific Risks			Calculated	Route-Specific Risks			Calculated
		Oral	Dermal	Inhalation	Risk	Oral	Dermal	Inhalation	Risk
PAHs (µg/kg)		ELCRo	ELCRd	ELCRi	ELCR	HQo	HQd	HQi	HI
Benzo(a)anthracene	850	1.4E-07	2.3E-08	9.0E-11	1.6E-07	4.4E-06	7.5E-07	NA	5.2E-06
Benzo(b)fluoranthene	740	1.2E-07	2.0E-08	1.5E-10	1.4E-07	3.9E-06	6.5E-07	NA	4.5E-06
Benzo(k)fluoranthene	19	3.1E-09	5.2E-10	8.1E-14	3.6E-09	9.9E-08	1.7E-08	NA	1.2E-07
Benzo(a)pyrene	5,600	9.1E-07	1.5E-07	3.6E-10	1.1E-06	2.9E-05	4.9E-06	NA	3.4E-05
Chrysene	7.2	1.2E-09	2.0E-10	3.6E-13	1.4E-09	3.8E-08	6.3E-09	NA	4.4E-08
Dibenzo(a,h)anthracene	590	9.6E-08	1.6E-08	1.9E-12	1.1E-07	3.1E-06	5.2E-07	NA	3.6E-06
Indeno(1,2,3-cd)pyrene	290	4.7E-08	8.0E-09	5.8E-16	5.5E-08	1.5E-06	2.6E-07	NA	1.8E-06
Inorganics (mg/kg)									
Arsenic	20	6.7E-07	3.4E-09	1.9E-13	6.7E-07	1.0E-02	5.2E-05	NA	1.0E-02
Copper	79	NC	NC	NC	NC	3.3E-04	2.7E-06	NA	3.4E-04
Lead	84	NC	NC	NC	NC	NA	NA	NA	NA
				TOTAL ELCR	**2E-06**			**TOTAL HI**	**0.01**

ELCR	Excess lifetime cancer risk.	µg/kg	Micrograms per kilogram.
EPCs	Exposure point concentration in total soil (Table 5-2).	PAHs	Polycyclic aromatic hydrocarbons.
HI	Hazard index.	NA	Not available.
HQ	Hazard quotient.	NC	Not a suspected carcinogen.
mg/kg	Milligrams per kilogram.		

TABLE 5-18
Risk Equations for Site Worker Exposure to Process Water
Coke Manufacturing Plant RFI
Sloss Industries Corporation

ROUTE-SPECIFIC RISKS:

Dermal:

$$ELCR_d \text{ or } HQ_d = \frac{EPC_{GW} \times SSA \times PC \times ET_d \times EF \times EP}{BW \times (AP_C \text{ or } AP_{NC}) \times (1{,}000\,cm^3/L) \times [(1/CSF_a) \text{ or } RfD_a]}$$

Inhalation:

$$ELCR_i \text{ or } HQ_i = \frac{EPC_{GW} \times VF_W \times EF \times EP}{(AP_C \text{ or } AP_{NC}) \times [(0.001\,mg/\mu g)/UR_i \text{ or } RfC]}$$

CANCER RISK:

$$ELCR = ELCR_d + ELCR_i$$

NON-CANCER RISK:

$$HI = HQ_d + HQ_i$$

where:

AP_C	Averaging period for cancer effects (25,550 days).
AP_{NC}	Averaging period for non-cancer effects (days); EP × 365 days/year.
BW	Body weight (kg).
EPC_{GW}	Constituent concentration in groundwater (mg/L).
CSF	Cancer slope factor for dermal (oral CSF is adjusted to an absorbed dose, CSF_a) exposure (kg-day/mg; inverse of mg/kg/day).
EF	Exposure frequency (days/year).
ELCR	Excess lifetime cancer risk for dermal ($ELCR_d$), inhalation ($ELCR_i$) or total (ELCR) exposure (unitless).
EP	Exposure period (years).
ET_d	Exposure time for dermal contact (hours/day).
HI	Hazard index (unitless); sum of the HQs.
HQ	Hazard quotient (unitless).
PC	Permeability constant (cm/hour).
RfC	Reference concentration for inhalation exposure (mg/m^3).
RfD	Reference dose for dermal (oral RfD is adjusted to an absorbed dose, RfD_a) exposure (mg/kg/day).
SSA	Exposed skin surface area (cm^2).
UR_i	Unit cancer risk for inhalation exposure ($m^3/\mu g$).
VF_W	Volatilization factor for volatile organic compounds (VOCs) from household tap water (0.5 L/m^3) (USEPA, 1991c).

TABLE 5-18
Risk Equations for Site Worker Exposure to Process Water
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE CALCULATION: 1,2,3-Trichloropropane

Cancer Risk:

$$ELCR_d = \frac{(0.0013\,mg/L) \times (3{,}160\,cm^2) \times (0.017\,cm/hr) \times (1\,hr/day) \times (12\,day/yr) \times (25\,yrs)}{(70\,kg) \times (25{,}550\,days) \times (1{,}000\,cm^3/L) \times 1/(2.5\,kg\text{-}day/mg)}$$

$$= 2.9 \times 10^{-8}$$

$$ELCR_i = \frac{(0.0013\,mg/L) \times (0.85\,L/m^3) \times (1\,hr/day) \times (350\,days/yr) \times (25\,yrs)}{(24\,hr/day) \times (25{,}550\,days) \times [(0.001\,mg/\mu g)/(NA\ \ m^3/\mu g)]}$$

$$= NA$$

$$ELCR = (2.9 \times 10^{-8}) + (NA) = 2.9 \times 10^{-8}$$

Non-Cancer Risk:

$$HQ_d = \frac{(0.0013\,mg/L) \times (3{,}160\,cm^2) \times (0.071\,cm/hr) \times (1\,hr/day) \times (12\,days/yr) \times (25\,yrs)}{(70\,kg) \times (9{,}125\,days) \times (1{,}000\,cm^3/L) \times (0.0048\,mg/kg/day)}$$

$$= 0.0000068$$

$$HQ_i = \frac{(0.0013\,mg/L) \times (0.85\,L/m^3) \times (1\,hr/day) \times (250\,days/yr) \times (25\,yrs)}{(24\,hr/day) \times (9{,}125\,days) \times (0.0049\ \ mg/m^3)}$$

$$= 0.00031$$

$$HI = 0.0000068 + 0.00031 = 0.00031$$

TABLE 5-19
Risk Calculations for Site Worker Exposure to Process Water
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	EPCw (µg/L)		CANCER RISK: Route-Specific Risks Dermal	CANCER RISK: Route-Specific Risks Inhalation	CANCER RISK: Calculated Risk	NON-CANCER RISK: Route-Specific Risks Dermal	NON-CANCER RISK: Route-Specific Risks Inhalation	NON-CANCER RISK: Calculated Risk
			ELCRd	ELCRi	ELCR	HQd	HQi	HI
VOCs								
1,2,3-Trichloropropane	1.3	*	2.9E-08	NA	2.9E-08	6.8E-06	3.1E-04	3.2E-04
				TOTAL ELCR	**3E-08**		**TOTAL HI**	**0.0003**

* EPC is equal to the maximum detected concentration.

ELCR	Excess lifetime cancer risk.	µg/L	Micrograms per liter.
EPCw	Constituent concentration in process water.	NA	Not available; insufficient toxicity data.
HI	Hazard index (sum of the HQs).	VOCs	Volatile organic compounds.
HQ	Hazard quotient.		

TABLE 5-20
Calculation of Risk-Based Remedial Goal Option for Lead
Coke Manufacturing Plant RFI
Sloss Industries Corporation

$$RGO_{lead} = \frac{\left(PbB_{adult,central,goal} - PbB_{adult,0}\right) \times AT}{BKSF \times IR_S \times AF_S \times EF_S}$$

where:

$$PbB_{adult,central,goal} = \frac{PbB_{fetal,0.95,goal}}{GSD_{i,adult}^{1.645} \times R_{fetal/maternal}}$$

where:

AF_s	Absolute gastrointestinal absorption fraction (0.12).
AT	Averaging time (365 days/year).
BKSF	Biokinetic slope factor (0.4 µg/dL per µg/day).
EF_s	Exposure frequency (250 days/year).
$GSD_{i,adult}$	Geometric standard deviation (1.8).
IR_s	Ingestion rate for soil (0.05 g/day).
$PbB_{adult,o}$	Typical blood lead concentration in adults in the absence of site exposures (2 µg/dL).
$PbB_{adult,central,goal}$	Goal for central blood lead concentrations that have site exposures (µg/dL).
$PbB_{fetal,0.95,goal}$	Goal for the 95th percentile blood lead concentrations among fetuses born to woman having exposures to site soils (10 µg/dL).
$R_{fetal/maternal}$	Constant of proportionality between fetal blood lead concentration at birth and maternal blood lead concentration (0.9).
RGO_{lead}	Risk-based remedial goal option for lead in soil (µg/g = mg/kg).

Calculation

$$PbB_{adult,central,goal} = \frac{10\ \mu g/dL}{1.8^{1.645} \times 0.9} = 4.225\ \mu g/dL$$

$$RGO_{lead} = \frac{(4.225\ \mu g/dL - 2\ \mu g/dL) \times 365\ days/year}{0.4\ \frac{\mu g/dL}{\mu g/day} \times 0.05\ g/day \times 0.12 \times 250\ days/year}$$

$$= 1{,}350\ \mu g/g = 1{,}350\ mg/kg$$

TABLE 5-21
Risk-Based Remedial Goal Options for Surficial Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	EPCs		RGOs – Site Worker Scenario TCR = 10^{-6}	RGOs – Site Worker Scenario TCR = 10^{-5}	RGOs – Site Worker Scenario TCR = 10^{-4}	RGOs – Trespasser Scenario TCR = 10^{-6}	RGOs – Trespasser Scenario TCR = 10^{-5}	RGOs – Trespasser Scenario TCR = 10^{-4}	Minimum RGO (TCR = 10^{-6})
PAHs (µg/kg)									
Benzo(a)anthracene	4,900	[a]	7,600	76,000	760,000	110,000	1,100,000	11,000,000	7,600
Benzo(b)fluoranthene	7,800	[a]	7,600	76,000	760,000	110,000	1,100,000	11,000,000	7,600
Benzo(k)fluoranthene	5,300	[a]	77,000	770,000	7,700,000	1,200,000	12,000,000	120,000,000	77,000
Benzo(a)pyrene	7,800	[a]	770	7,700	77,000	11,000	110,000	1,100,000	770
Chrysene	6,000	[a]	770,000	7,700,000	77,000,000	11,000,000	110,000,000	1,100,000,000	770,000
Dibenzo(a,h)anthracene	2,000	[a]	770	7,700	77,000	12,000	120,000	1,200,000	770
Indeno(1,2,3-cd)pyrene	5,500	[a]	7,700	77,000	770,000	120,000	1,200,000	12,000,000	7,700
Inorganics (mg/kg)									
Arsenic	220		3.8	38	380	64	640	6,400	3.8
Chromium	92		1.2E+06	1.2E+07	1.2E+08	3.7E+07	3.7E+08	3.7E+09	1.2E+06

[a] The EPCs for the carcinogenic PAHs have been converted back to constituent-specific concentrations by dividing by the TEF values shown on Table 5-1.

ELCR Excess lifetime cancer risk.
EPCs Exposure point concentration in surface soil.
HI Hazard index.
HQ Hazard quotient.
mg/kg Milligrams per kilogram.
µg/kg Micrograms per kilogram.
NA Not available.
PAHs Polycyclic aromatic hydrocarbons.
RGO Remedial goal option for soil.
TEF Benzo(a)pyrene toxicity equivalency factor.

TABLE 5-22
Risk-Based Remedial Goal Options for Total Soil
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	EPCs	RGOs – Site Worker Scenario			RGOs – Trespasser Scenario			Minimum RGO
		TCR = 10^{-6}	TCR = 10^{-5}	TCR = 10^{-4}	TCR = 10^{-6}	TCR = 10^{-5}	TCR = 10^{-4}	(TCR = 10^{-6})
PAHs (µg/kg)								
Benzo(a)anthracene	8,500	7,600	76,000	760,000	83,000	830,000	8,300,000	7,600
Benzo(b)fluoranthene	7,400	7,600	76,000	760,000	83,000	830,000	8,300,000	7,600
Benzo(k)fluoranthene	1,900	77,000	770,000	7,700,000	830,000	8,300,000	83,000,000	77,000
Benzo(a)pyrene	5,600	770	7,700	77,000	8,300	83,000	830,000	770
Chrysene	7,200	770,000	7,700,000	77,000,000	8,300,000	83,000,000	830,000,000	770,000
Dibenzo(a,h)anthracene	590	770	7,700	77,000	8,300	83,000	830,000	770
Indeno(1,2,3-cd)pyrene	2,900	7,700	77,000	770,000	83,000	830,000	8,300,000	7,700
Inorganics (mg/kg)								
Arsenic	20	3.8	38	380	41	410	4,100	3.8
Copper	79	1.2E+06	1.2E+07	1.2E+08	NC	NC	NC	NC
Lead	84	NA	NA	NA	NC	NC	NC	NA

[a] The EPCs for the carcinogenic PAHs have been converted back to constituent-specific concentrations by dividing by the TEF values shown on Table 5-2.

ELCR Excess lifetime cancer risk.
EPCs Exposure point concentration in total soil.
HI Hazard index.
HQ Hazard quotient.
mg/kg Milligrams per kilogram.
µg/kg Micrograms per kilogram.
NA Not available.
PAHs Polycyclic aromatic hydrocarbons.
RGO Remedial goal option for soil.
TEF Benzo(a)pyrene toxicity equivalency factor.

TABLE 5-23
Comparison of SWMU-Related Concentrations With Risk-Based Remedial Goal Options
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Constituent	RGO			Maximum Detected Concentration									
	TCR = 10^{-6}	TCR = 10^{-5}	TCR = 10^{-4}	QT A	QT B	SWMU 5	SWMU 6	SWMU 7	SWMU 8	SWMU 9	SWMU 10	SWMU 11	SWMU 12
PAHs (µg/kg)													
Benzo(a)anthracene	7,600	76,000	760,000	6,700	1,800	7,100	—	[illegible]	—	—	3,000	[illegible]	4,900
Benzo(b)fluoranthene	7,600	76,000	760,000	—	2,400	5,200	6,500	[illegible]	—	—	3,400	[illegible]	[illegible]
Benzo(k)fluoranthene	77,000	770,000	7,700,000	4,000	—	1,100	—	—	—	—	1,000	21,000	5,300
Benzo(a)pyrene	770	7,700	77,000	—	[illegible]	[illegible]	—	[illegible]	—	—	[illegible]	[illegible]	[illegible]
Chrysene	770,000	7,700,000	77,000,000	5,300	—	5,600	4,400	22,000	—	—	2,700	97,000	6,000
Dibenzo(a,h)anthracene	770	7,700	77,000	—	—	430	—	—	—	—	400	—	[illegible]
Indeno(1,2,3-cd)pyrene	7,700	77,000	770,000	—	—	4,100	—	—	—	—	2,400	[illegible]	5,500
Inorganics (mg/kg)													
Arsenic	3.8	38	380	[illegible]									
Chromium	1.2E+06	1.2E+07	1.2E+08	36	55	59	26	30	44	59	48	52	92
Copper	NC	NC	NC	280	—	—	17	18	6	20	13	—	11
Lead	---------	1,350 [a]	---------	90	—	—	—	—	35	200	—	39	—

[a] The RGO for lead is not cancer risk-based; the value shown was calculated in Table 5-20.

Exceedance Notes:

[illegible] Denotes that the maximum detected concentration exceeds the RGO based on TCR = 10^{-6}.

[illegible] Denotes that the maximum detected concentration exceeds the RGO based on TCR = 10^{-5}.

[illegible] Denotes that the maximum detected concentration exceeds the RGO based on TCR = 10^{-4}.

mg/kg Milligrams per kilogram.
RGO Remedial goal option based on carcinogenic risk.
SWMU Solid waste management unit.
TCR Target cancer risk.
— Concentration not detected at this SWMU.

TABLE 5-24
Input Probability Distribution Functions for Monte Carlo Simulation Random Variables
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Random Variable	Input Probability Distribution Function	Reference
BW	CUMULATIVE (min 44, max 107; 5% at 52.3; 15% at 57.6; 50% at 68.7; 85% at 84.4; 95% at 97); Correlated with SSA (0.85)	[a]
EF	(5/7) × NORMAL (mean 250, SD 70, max 365) = NORMAL (mean 180, SD 50, max 260)	[b]
EP	CUMULATIVE (min 0, max 50; 10% at 0.66; 20% at 1.45; 30% at 2.43; 40% at 3.71; 50% at 5.46; 60% at 8.15; 70% at 13.14; 80% at 23.81; 90% at 31.31; 8.9; 95% at 36.56; 99% at	[c]
EPC	RANDOM (measured concentration data)	–
G	TRIANGULAR (min 0, likliest 0.5, max 1)	–
IR_S	0.5 × CUMULATIVE (min 0, max 216; 67% at 17; 83% at 148) = CUMULATIVE (min 0, max 108; 67% at 8.5; 83% at 74)	[a]
SAR	LOGNORMAL (mean 0.0064, SD 0.0055)	–
SSA	NORMAL (mean 2993, SD 111, min 2217, max 4161); correlated with BW (0.85)	[d]

References

–	Professional judgment.
[a]	AIHC (1994).
[b]	Chrostowski et al. (1991).
[c]	Burmaster (2000).
[d]	USEPA (1997b).

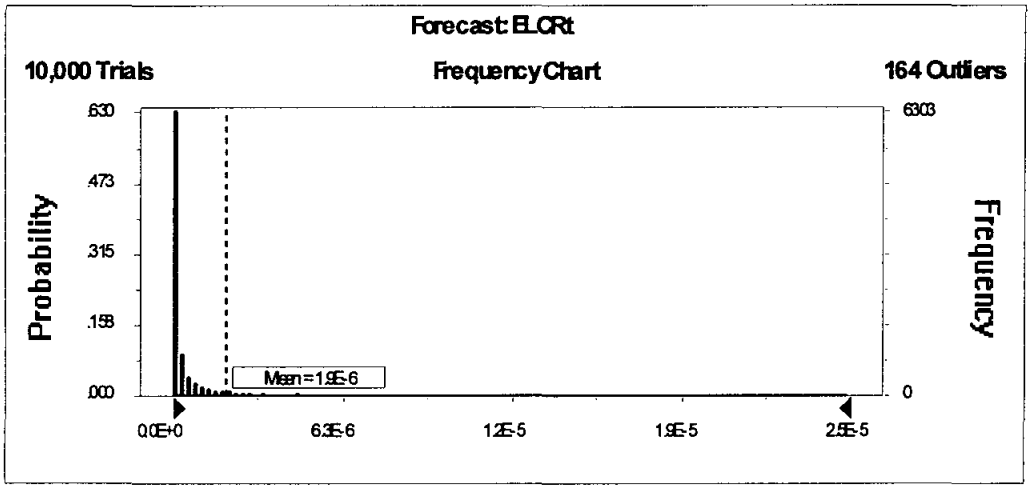
Definitions

BW	Body weight (kilograms).
EF	Exposure frequency (days/year).
EPC	Exposure point concentration (mg/kg).
EP	Exposure period (years).
G	Fraction of vegetative cover (unitless).
IR_S	Ingestion rate of soil (mg/day).
SAR	Soil adherence rate ($mg/cm^2/day$).
SSA	Exposed skin surface area (cm^2).

TABLE 5-25
Results of Monte Carlo Simulation of Total Cancer Risk for Site Worker Exposure
Coke Manufacturing Plant RFI
Sloss Industries Corporation

Exposure Scenario	Cancer Risk (Total ELCR)		
	Median	Mean	95% *
Site Worker			
Surface Soil Exposure	1E-07	2E-06	7E-06

Output Probability Distribution for Total ELCR:



* 95th percentiles of the predicted risk probability distribution.

ELCR Excess lifetime cancer risk.

TABLE 6-1
Summary of RFI Recommendations
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SWMU No.	Name	Recommendation	Concern
1A	Quench Tower A and Sump	NFA	None
2A	Quench Tower A Pump Basins	NFA	None
3A	Old Quench Tower Settling Basins	NFA	None
1B	Quench Tower B and Sump	NFA	None
2B	Quench Tower B Pump Basin	NFA	None
5	Coal Tar Storage Area Drain System	FA	Determine presence/absence of PAHs in groundwater
6	Spill Area Around Diesel Tank	NFA	None
7	Coal Tar Collection Sump in No. 1 Pump House	FA	Determine presence/absence of PAHs in groundwater and further delineate PAH soil contamination
8	Flushing Liquor Decanter	NFA	None
9	Flushing Liquor Decanter Sump	NFA	None
10	Coal Tar Decanter for No. 3 and No. 4 Coke Batteries	NFA	Determine presence/absence of VOCs, SVOCs, and PP metals in groundwater downgradient of SWMUs 10 and 11
11	Coal Tar Decanter for No. 5 Coke Battery	NFA	Determine presence/absence of VOCs, SVOCs, and PP metals in groundwater downgradient of SWMUs 10 and 11
12	Coal Tar Decanter for No. 1 and No. 2 Coke Batteries	NFA	None

FA Further Action
NFA No Further Action

APPENDIX A

SUMP INSPECTION RECORDS

APPENDIX A.1

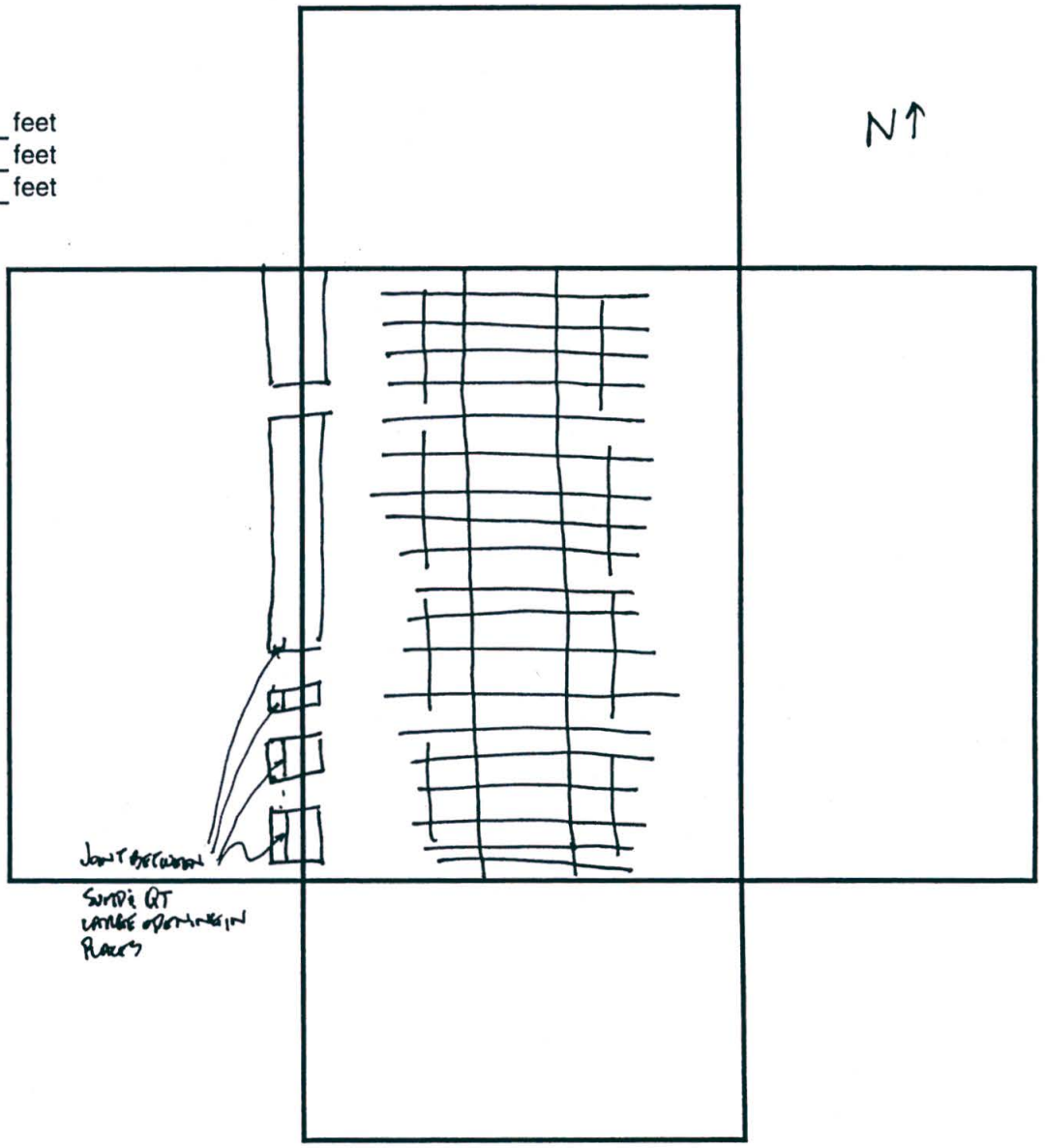
QUENCH TOWER A AND SUMP (SWMU 1A)

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a **heidemij** company

SUMP SURFACE DRAWING

Date: 6/6/96
Client: Sloss Industries
Project No.: TF0320.014
Location: Birmingham, Alabama
Sump: SWMU-1A QUENCH TOWER

Sump Length: 64 feet
Sump Width: 25 feet
Sump Depth : NA feet



Observations:

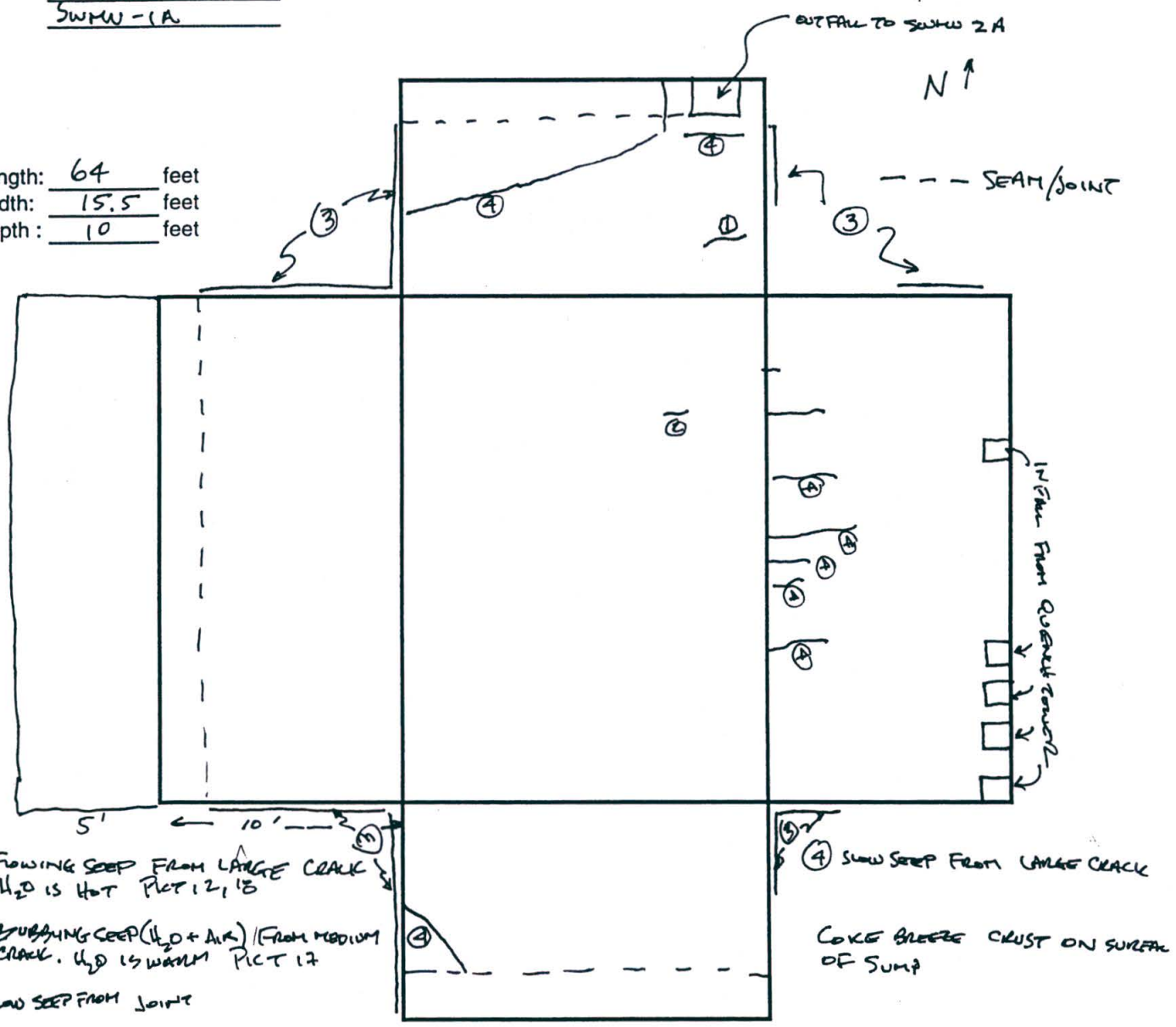
E SIDE OF TRACKS Row 6 5-7
W SIDE OF TRACKS Row 6 1-4
OUTFALL TO SUMP "

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a **heidemij** company

SUMP SURFACE DRAWING

Date: 6/6/96
Client: Sloss Industries
Project No.: TF0320.014
Location: Birmingham, Alabama
Sump: SWMU-1A

Sump Length: 64 feet
Sump Width: 15.5 feet
Sump Depth : 10 feet



① FLOWING SEEP FROM LARGE CRACK H_2O IS HOT PICT 12, 18

② BUBBLING SEEP (H_2O + AIR) FROM MEDIUM CRACK. H_2O IS WARM PICT 17

③ SLOW SEEP FROM JOINT

④ SLOW SEEP FROM LARGE CRACK

COKE BREEZE CRUST ON SURFACE OF SUMP

Observations:

N	Row 5'	9-10
S	"	~~9-10~~ 11-12
E	"	4-8
W	"	13-16
BOTTOM	"	17-22

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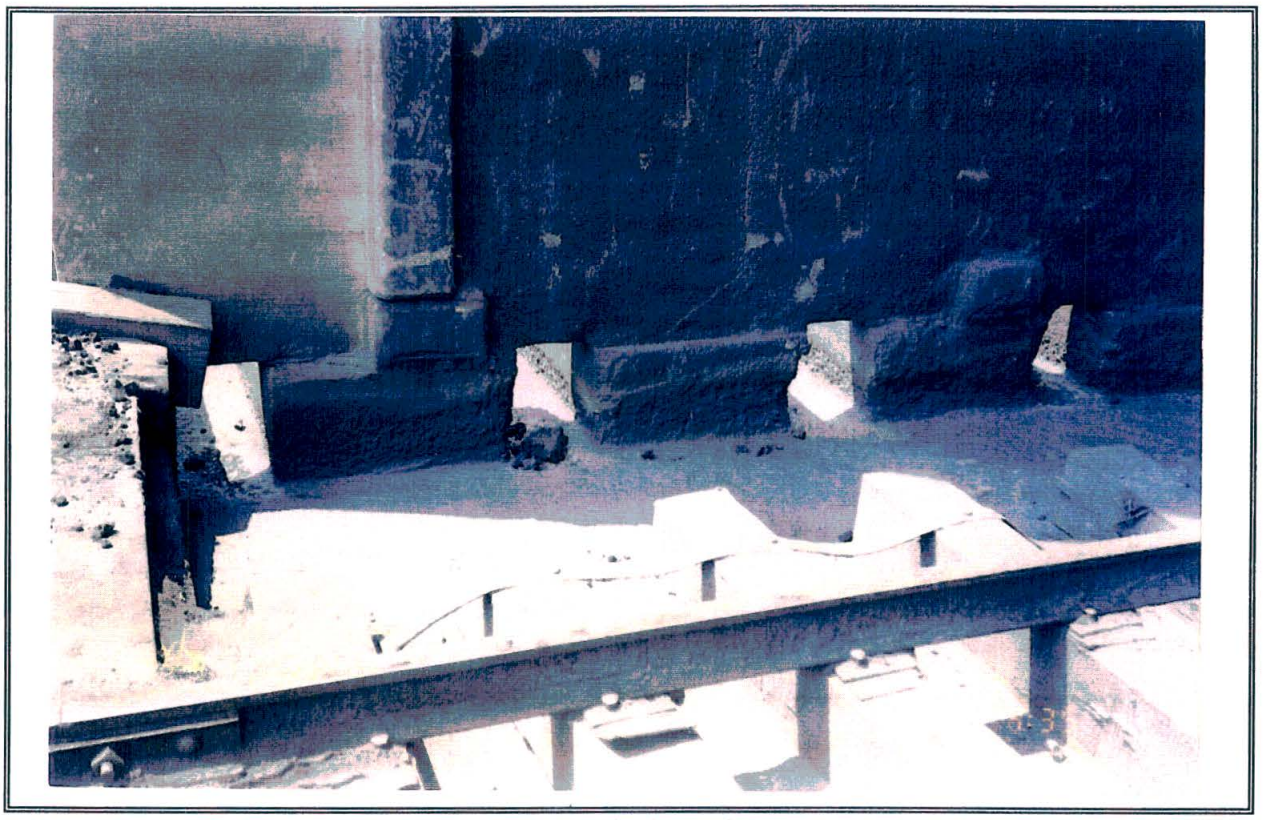
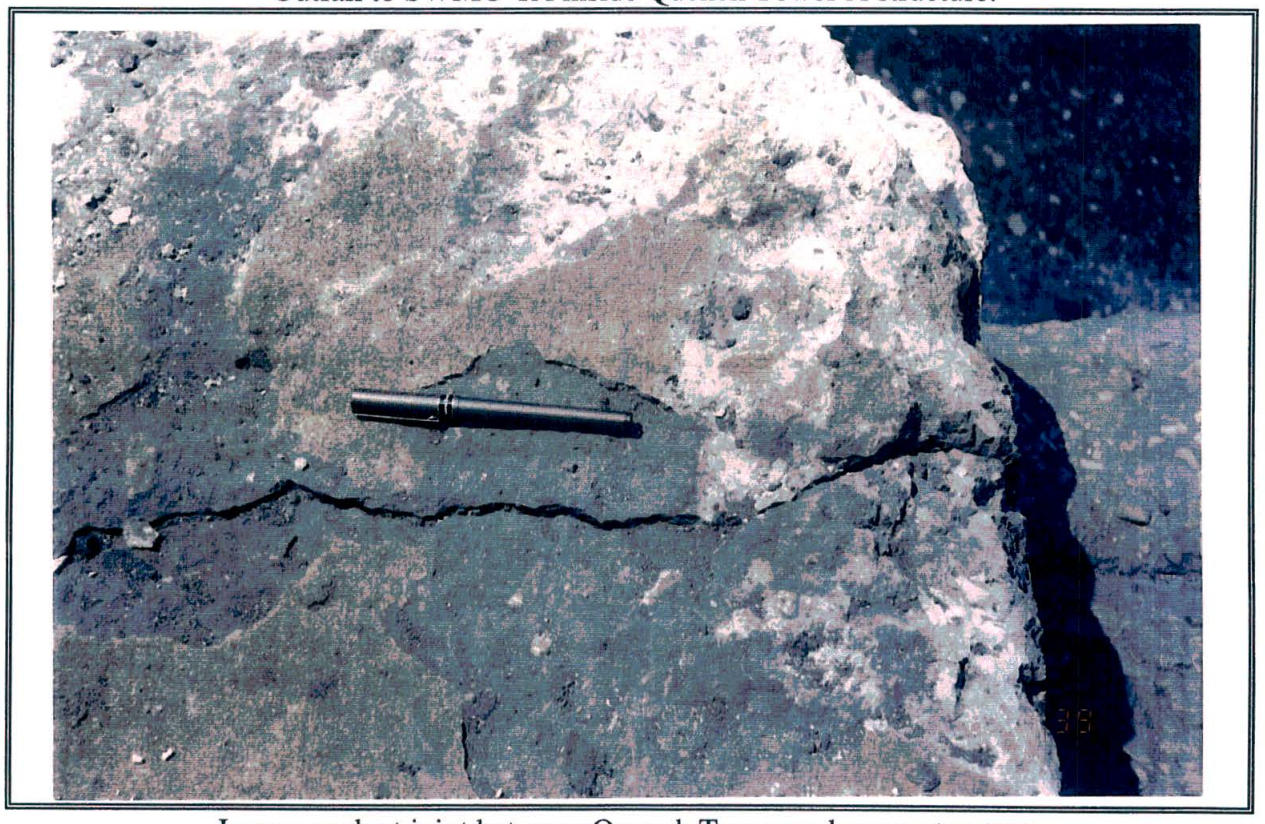


Outfall to SWMU 1A inside Quench Tower A structure.



Large crack at joint between Quench Tower and sump structure.

West Side of Quench Tower A structure looking north.

North wall of SWMU 1A with damp northwest corner joint and flowing seep beneath outfall to SWMU 2A

South wall of SWMU 1A with damp southeast and southwest corner joints.

Base of SWMU 1A looking north.

East Wall of SWMU 1A with minor damp medium cracks at the base (looking north).

APPENDIX A.2

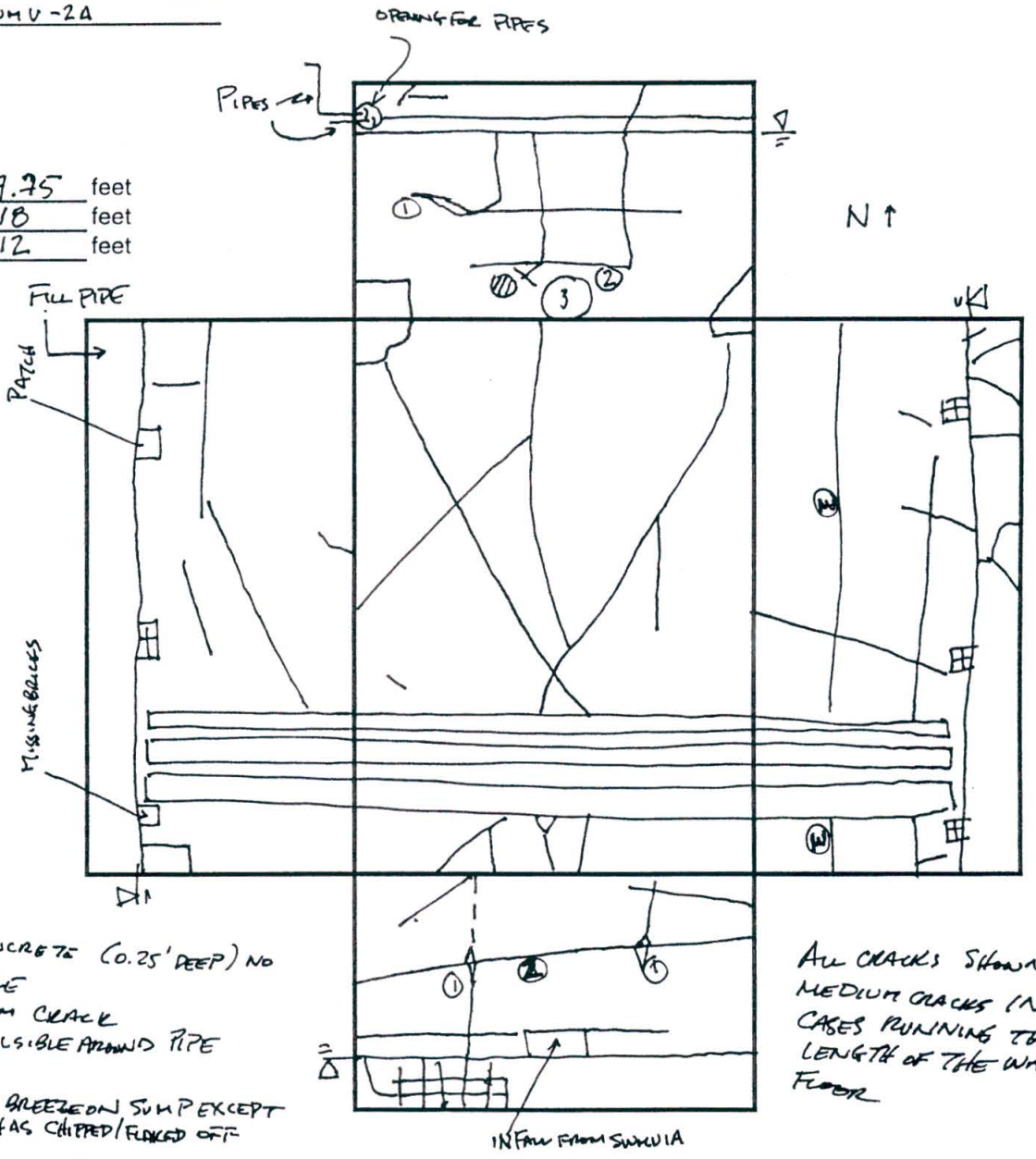
QUENCH TOWER A PUMP BASIN (SWMU 2A)

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a **heidemij** company

SUMP SURFACE DRAWING

Date: 6/6/96
Client: Sloss Industries
Project No.: TF0320.014
Location: Birmingham, Alabama
Sump: SUMP V-2A

Sump Length: 17.75 feet
Sump Width: 18 feet
Sump Depth : 12 feet



① CHIPPED CONCRETE (0.25' DEEP) NO CRACK VISIBLE
② H_2O SEEP FROM CRACK
③ NO CORROSION VISIBLE AROUND PIPE

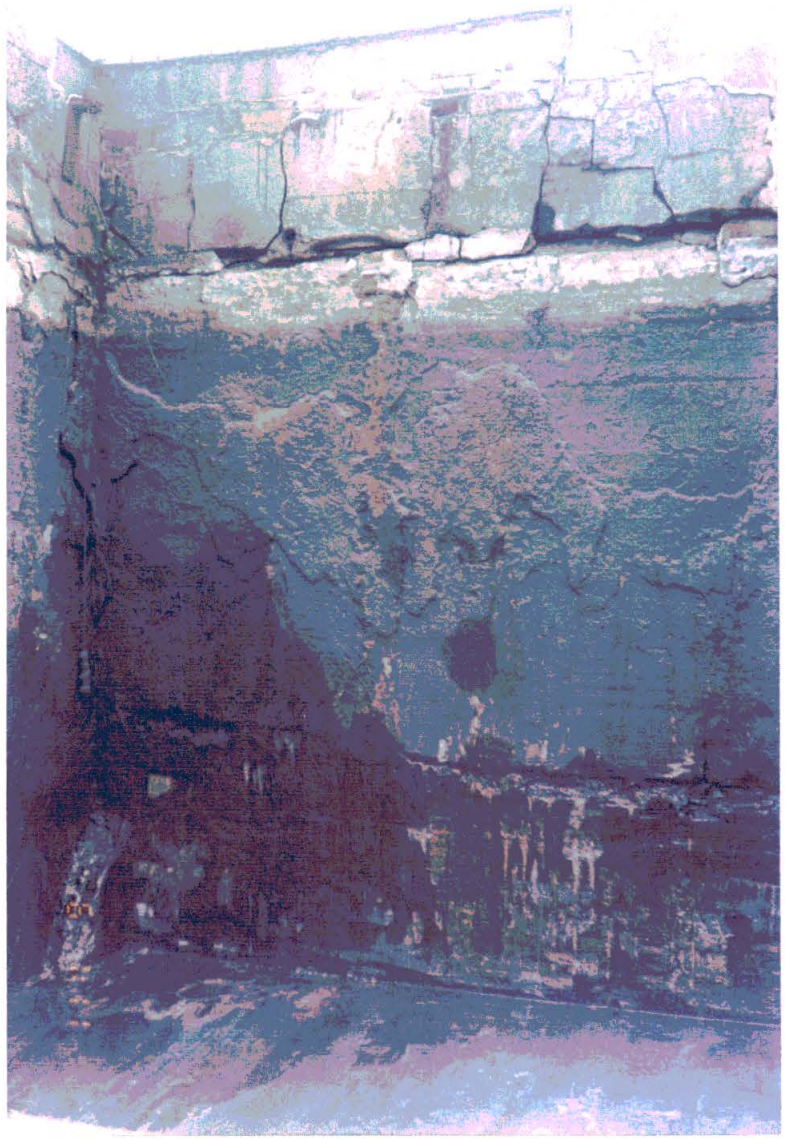
CRUST OF COKE BREEZE ON SUMP EXCEPT WHERE IT HAS CHIPPED/FLAKED OFF

ALL CRACKS SHOWN ARE MEDIUM CRACKS IN MOST CASES RUNNING THE FULL LENGTH OF THE WALL OR FLOOR

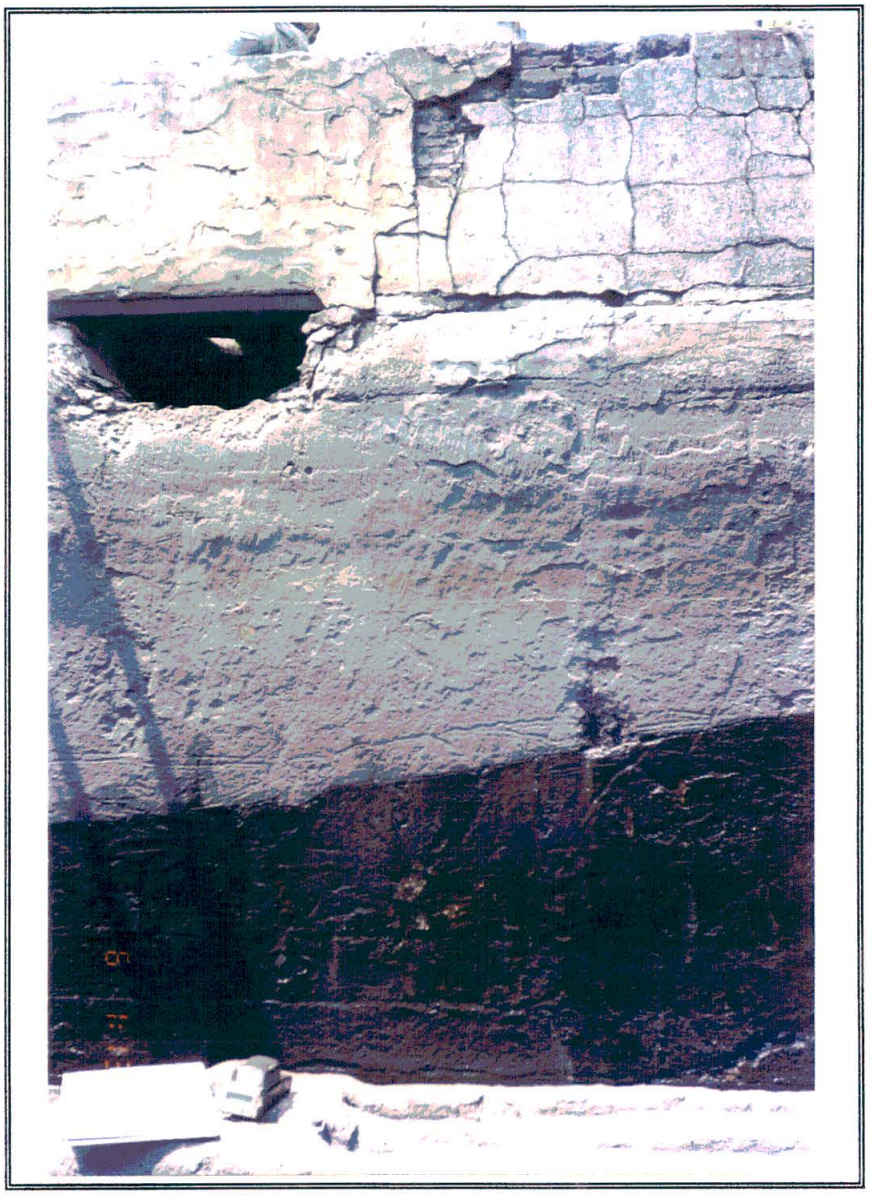
Observations:

N	Row 4	4-6	15
S	"	10-12	16
E	"	1-3	14, 17
W	"	7-9	13
BOTTOM	"	18-24	

North wall of SWMU 2A. Observe seep from horizontal crack above outfall to pumphouse and damp corner joint.



East wall of SWMU 24. Observe seep from horizontal crack and large cracks above maximum water depth.



South wall of SWMU 2A looking south. Observe seep from large crack running length of wall.

West wall of SWMU 2A. Observe water discharging from infall to SWMU 2A.

APPENDIX A.3

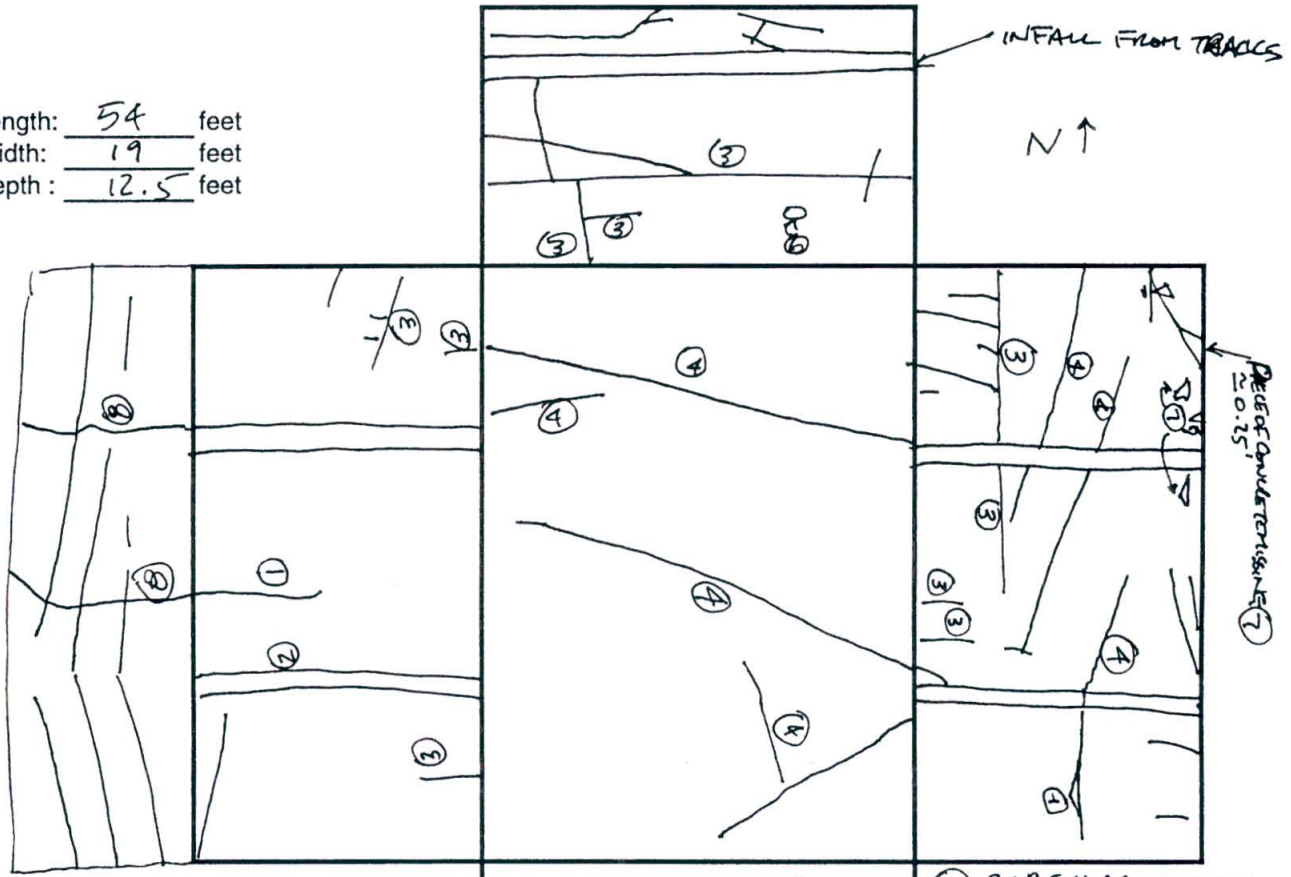
OLD QUENCH TOWER A SETTLING BASIN (SWMU 3A)

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a **heidemij** company

SUMP SURFACE DRAWING

Date: 6/6/96
Client: Sloss Industries
Project No.: TF0320.014
Location: Birmingham, Alabama
Sump: SWMU-3A

Sump Length: 54 feet
Sump Width: 19 feet
Sump Depth : 12.5 feet



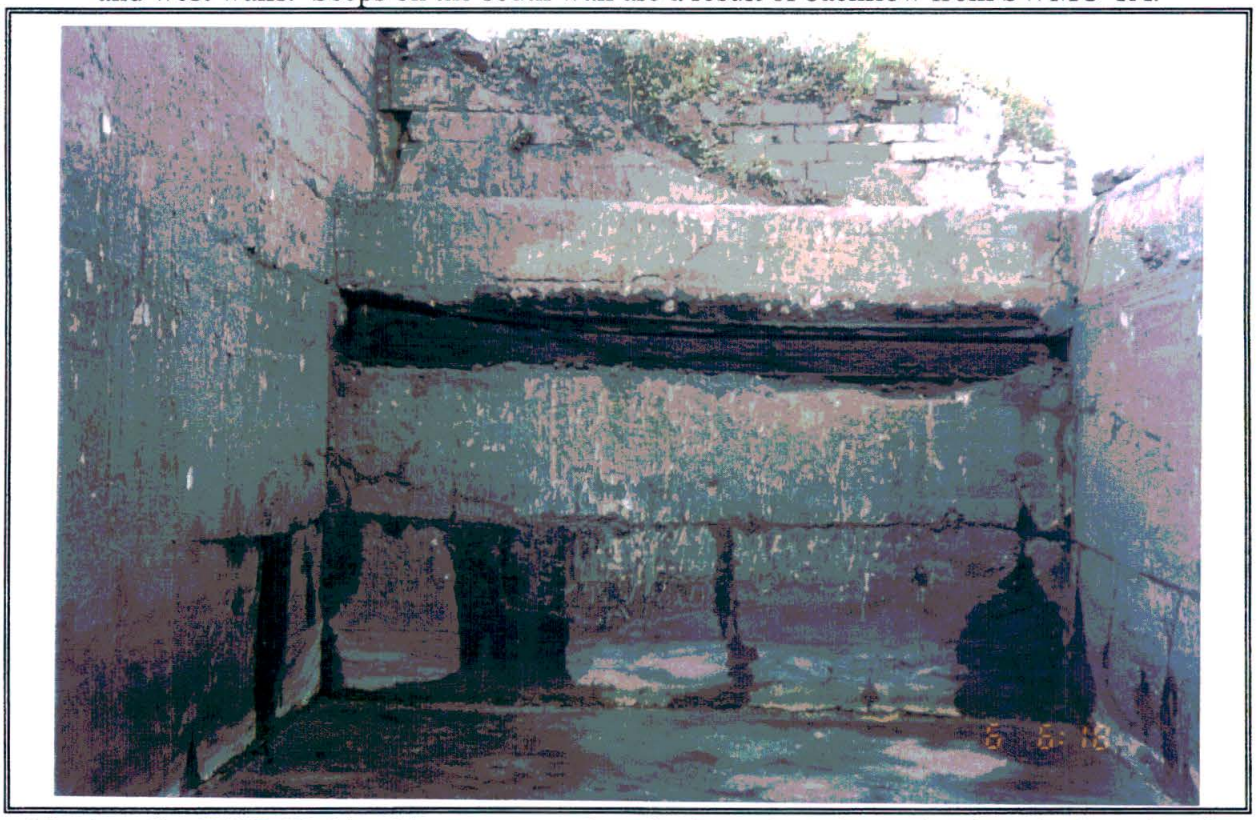
① SEEP FROM LARGE CRACK (2 GPM) SOMEWHERE ALONG CRACK
② SEEP ALONG JOINT
③ SEEP FROM MEDIUM CRACK
④ NONSEEP MEDIUM CRACK
⑤ SEEP FROM LARGE CRACK W/SOME CORROSION
⑥ CIRCULAR CORROSION AREA W/SEEP (0.25'x0.25')
⑦ CONCRETE MISSING
⑧ LARGE CRACK NO SEEP

OUTFALL TO SWMU 2A

Observations:

N	ROLL 7	8-11
S	"	1
E	"	12-17
W	"	2-7, 24, 25
BOTTOM	"	18, 19, 20-22

SWMU 3A looking south. Observe numerous seeps occurring from lower portion of the east and west walls. Seeps on the south wall are a result of backflow from SWMU 1A.



North wall of SWMU 3A. Observe seeps from horizontal crack running length of northwall.

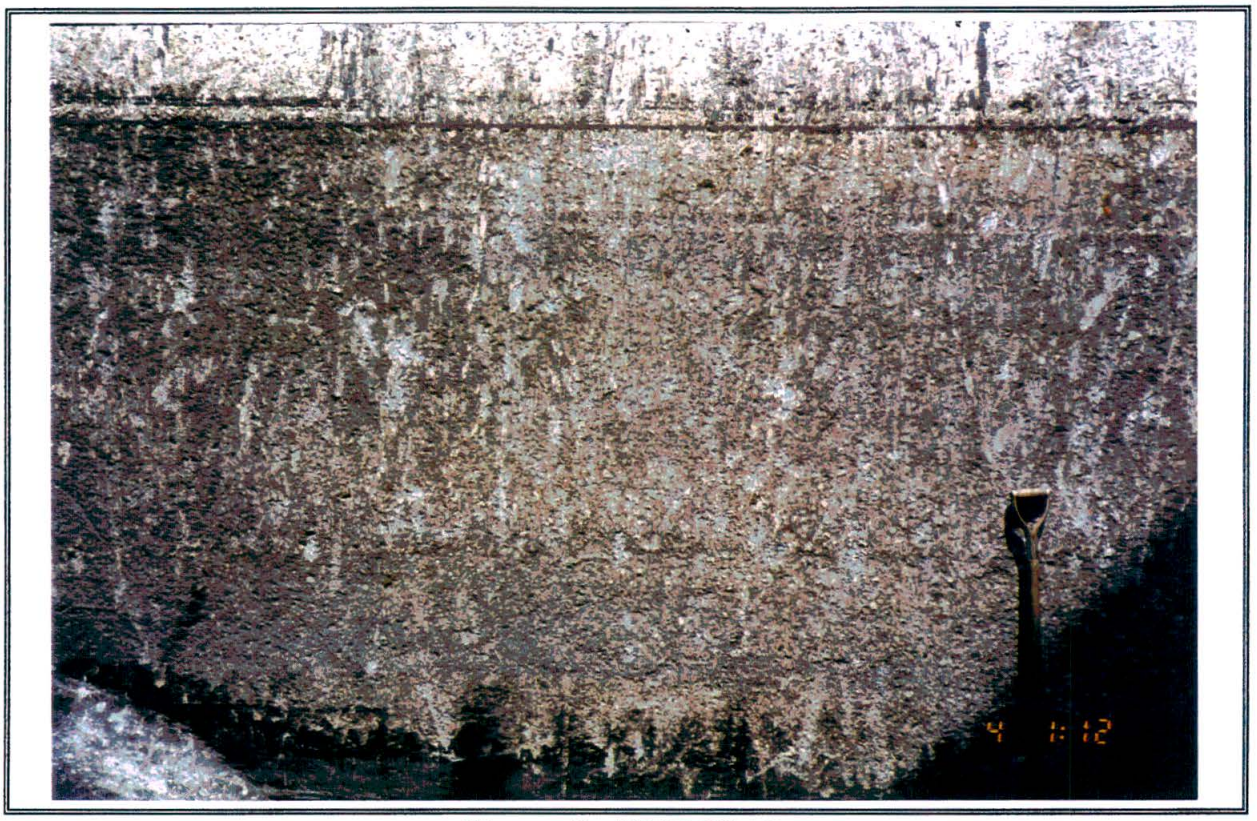
Large crack on west wall of SWMU 3A that continues from base of sump to top. Observe seep from crack near base of sump.

West side of Quench Tower B structure. Observe channels developed in base of structure.

Large cracks in outfall structure from Quench Tower B to SWMU 1B.

Cracks running length of base of SWMU 1B looking south.

North wall of SWMU 1B. Notice infall from Quench Tower B at northeast end of north wall.



West wall of SWMU 1B.

Outfall to SWMU 2B on south wall of SWMU 1B. Observe cracks and surrounding outfall.

APPENDIX A.4

QUENCH TOWER B AND SUMP (SWMU 1B)

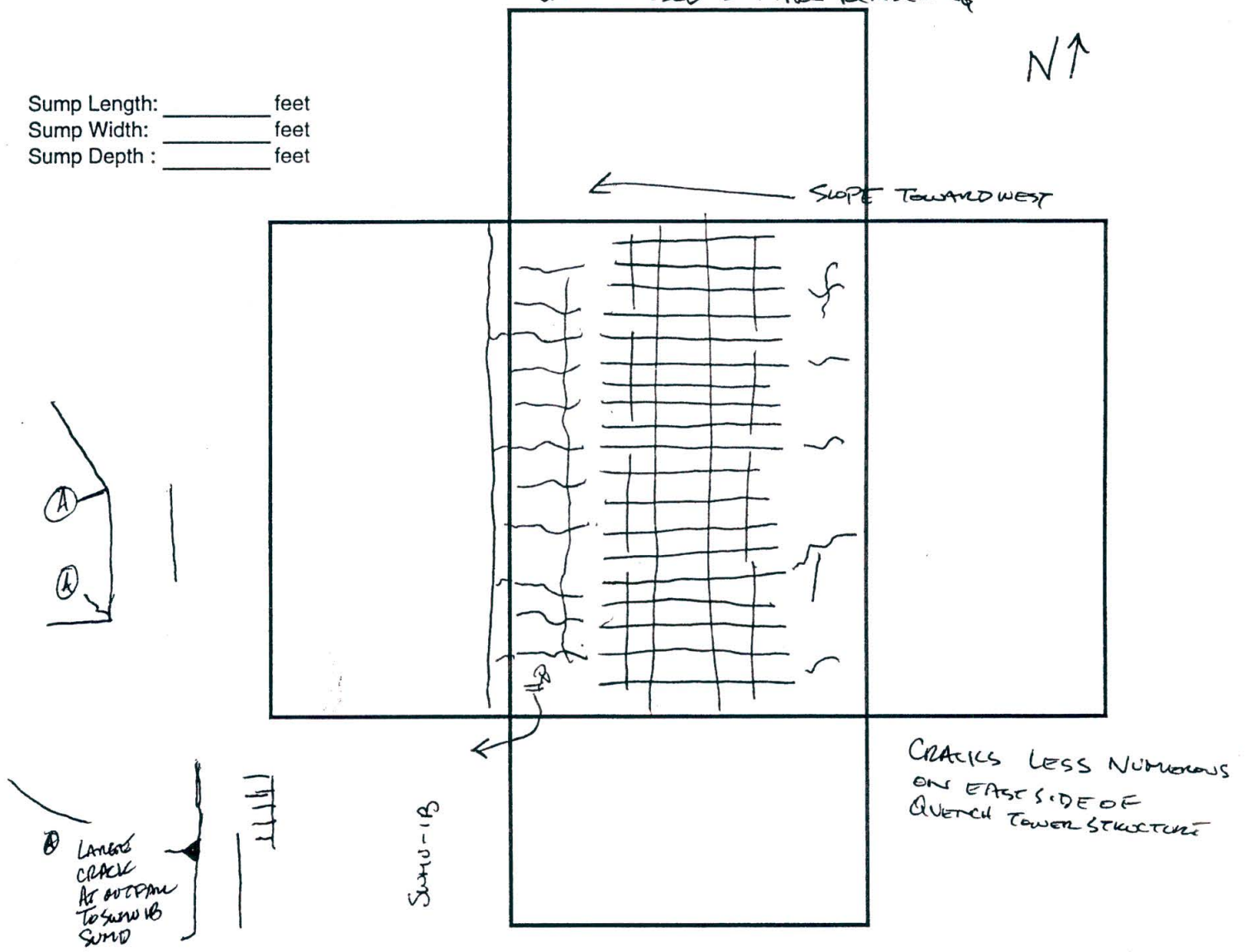
GERAGHTY & MILLER, INC.
Environment and Infrastructure
a **heidemij** company

SUMP SURFACE DRAWING

Date: 6/4/96
Client: Sloss Industries
Project No.: TF0320.014
Location: Birmingham, Alabama
Sump: SWHU 1B - QUENCH TOWER

Sump Length: _____ feet
Sump Width: _____ feet
Sump Depth : _____ feet

GENERALIZED SURFACE RENDERING



Observations:

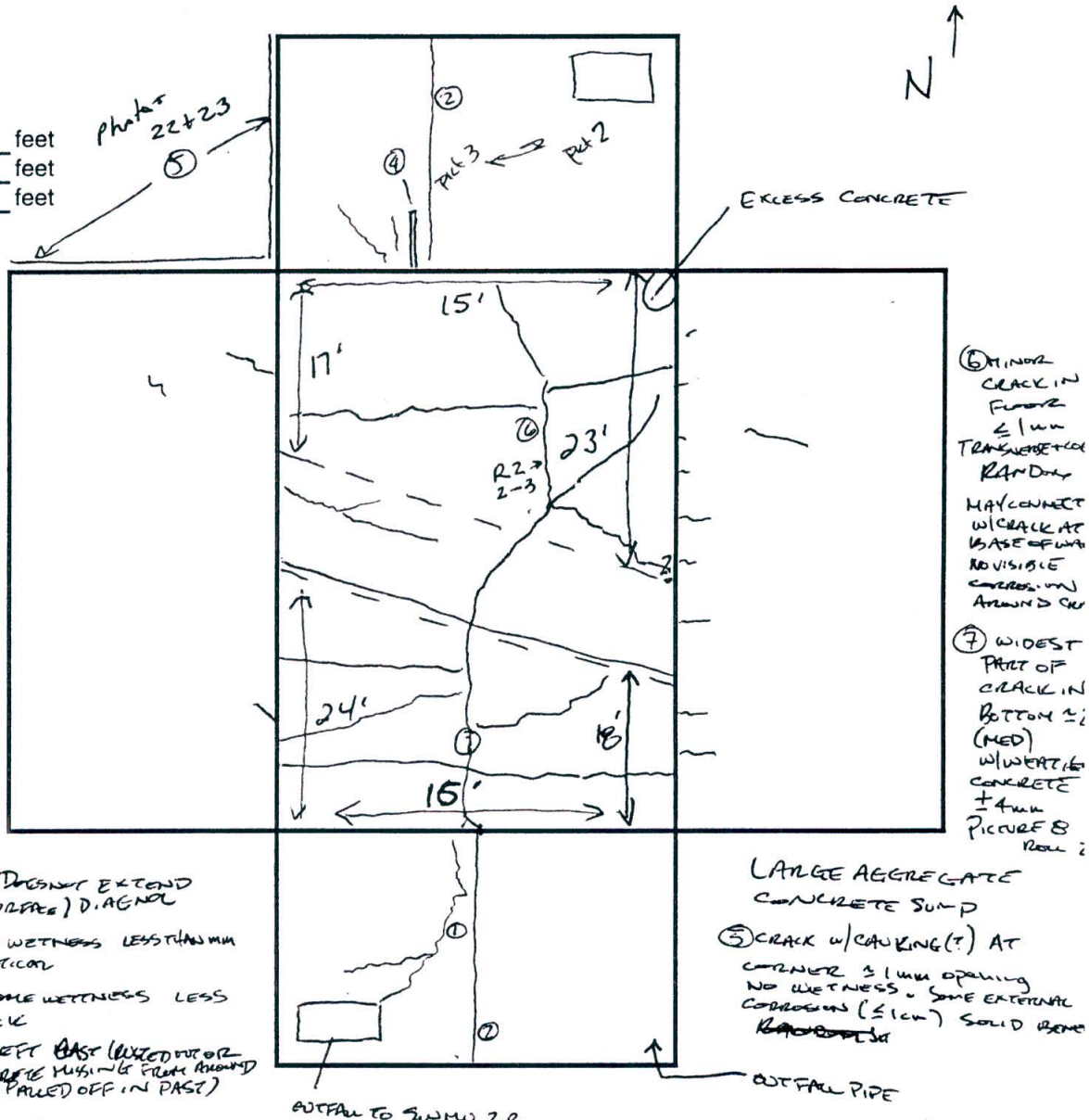
PICTURES ROLL 3 1-13
NUMEROUS CRACKS (MEDIUM) IN FLOOR APPEAR TO HAVE BEEN FORMED OR ENHANCED BY WATER FLOWING TO SWHU-1B SUMP.
SOME CRACK CONTINUE IN CONCRETE TILE JOINT BETWEEN WALLS & FLOOR

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a **heidemij** company

SUMP SURFACE DRAWING

Date: 6/4/96
Client: Sloss Industries
Project No.: TF0320.014
Location: Birmingham, Alabama
Sump: SWMU - 1B

Outside
Sump Length: 54 feet
Sump Width: 19 feet
Sump Depth : 10.5 feet



Observations:

N WALL	Photos	12-15	Roll 1
E WALL	Photos	4-11	"
S WALL	Photos	1-3	"
W WALL	Photos	16-21	"
FLOOR	24 Photos	Roll 1	Roll 2 1 → 11

SUMP COATED IN MOST AREAS W/ COAL TAR EPOXY
NUMEROUS MINOR RANDOM CRACKS AT BASE OF SUMP WALLS

APPENDIX A.5

QUENCH TOWER B PUMP BASIN (SWMU 2B)

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a **heidemij** company

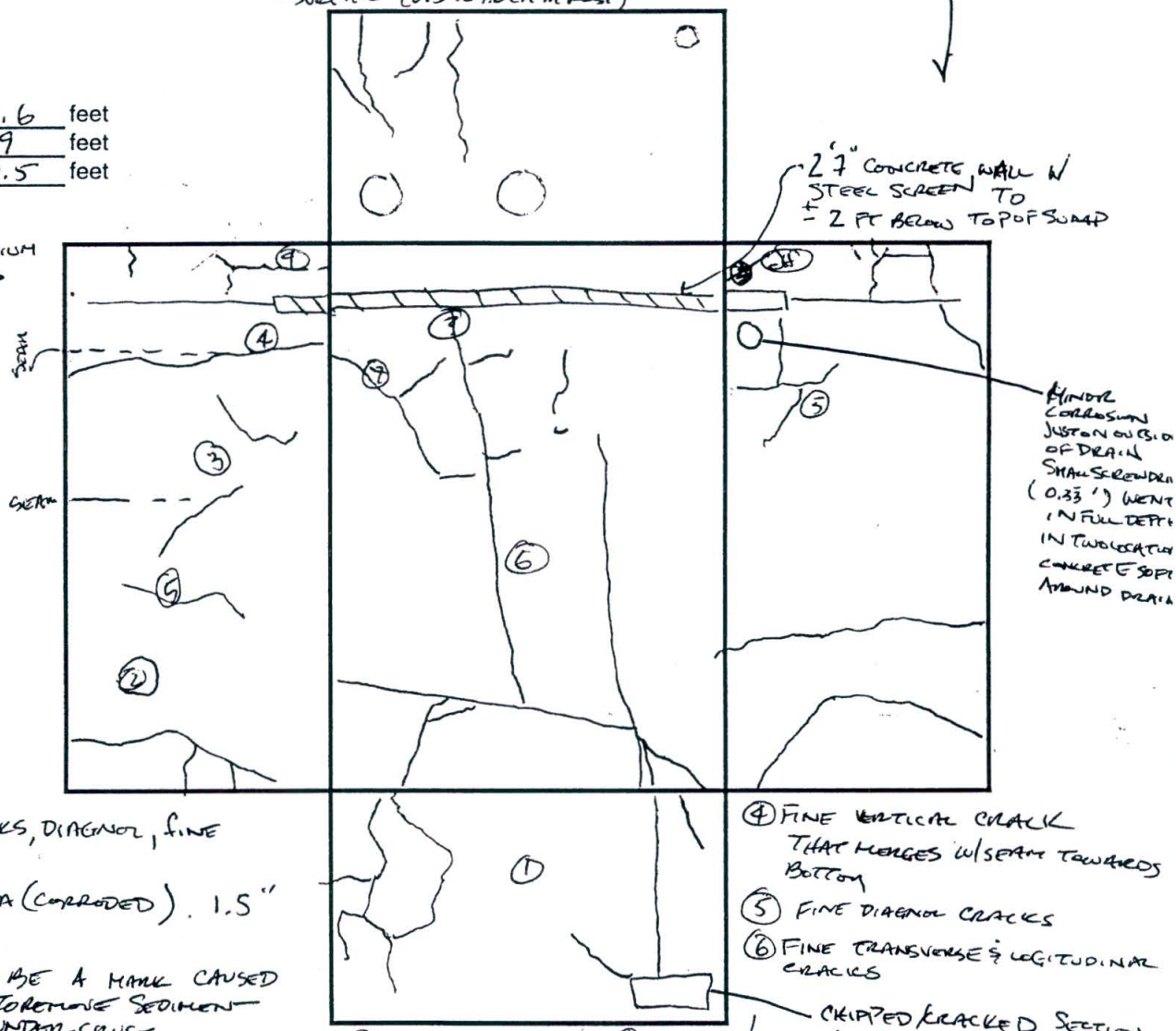
SUMP SURFACE DRAWING

Date: 6/4/96
Client: Sloss Industries
Project No.: TF0320.014
Location: Birmingham, Alabama
Sump: SWMU 2-B

CRACKS OBSCURED BY CRUST ON SUMP
SPOTS OF SUMP HAVE SOFT CONCRETE ON SURFACE (0.5 TO 1.0 CM AT MOST)

N

Sump Length: 22.6 feet
Sump Width: 19 feet
Sump Depth : 10.5 feet



① RANDOM CRACKS, DIAGNOL, FINE

② PITTED AREA (CORRODED) 1.5" DEEP

③ APPEARS TO BE A MARK CAUSED BY BUCKET TO REMOVE SEDIMENT — NO CRACK UNDER CRUST

④ FINE VERTICAL CRACK THAT MERGES W/SEAM TOWARDS BOTTOM

⑤ FINE DIAGNOL CRACKS

⑥ FINE TRANSVERSE & LOGITUDINAL CRACKS

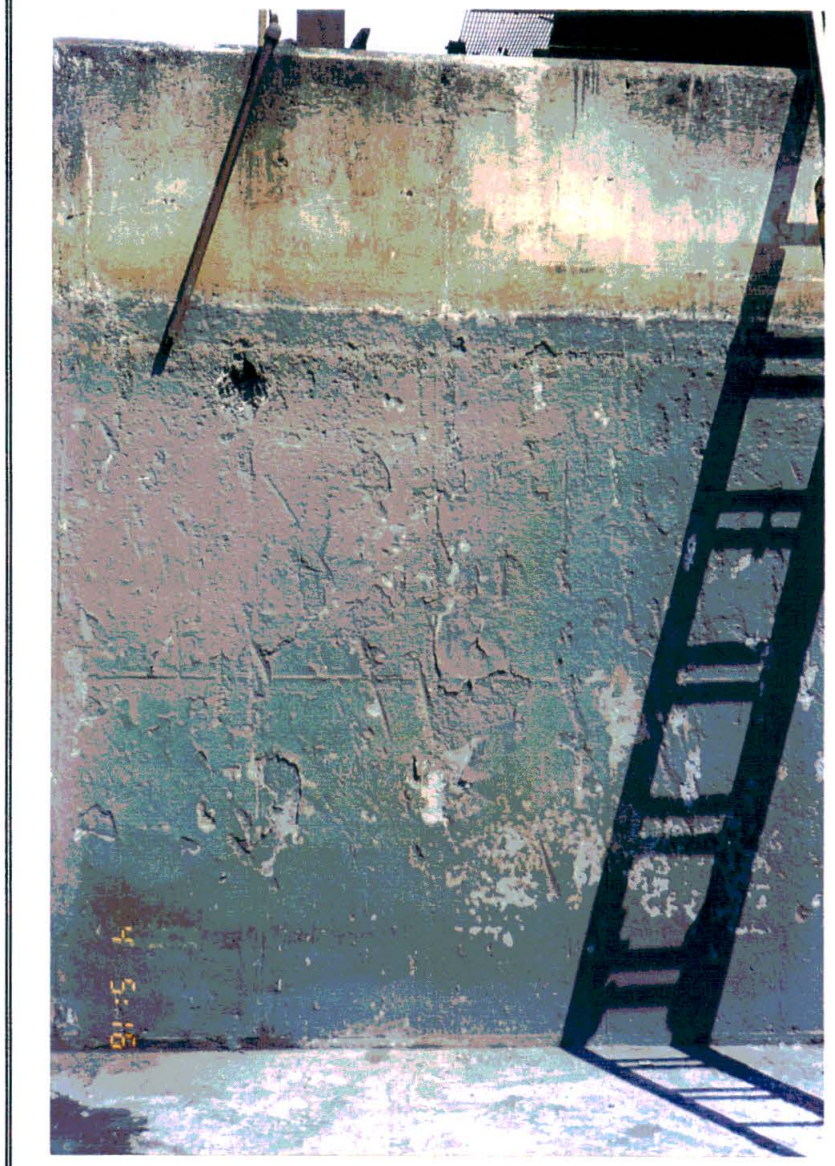
⑦ LARGEST CRACK W/IN ⑥ AREA CRACK W/CONCRETE AROUND CRACK

CHIPPED/CRACKED SECTION AT TOP OF INFALL FROM SWMU 2B (0.5' AT TOP) REBAR EXPOSED AT TOP

Observations:

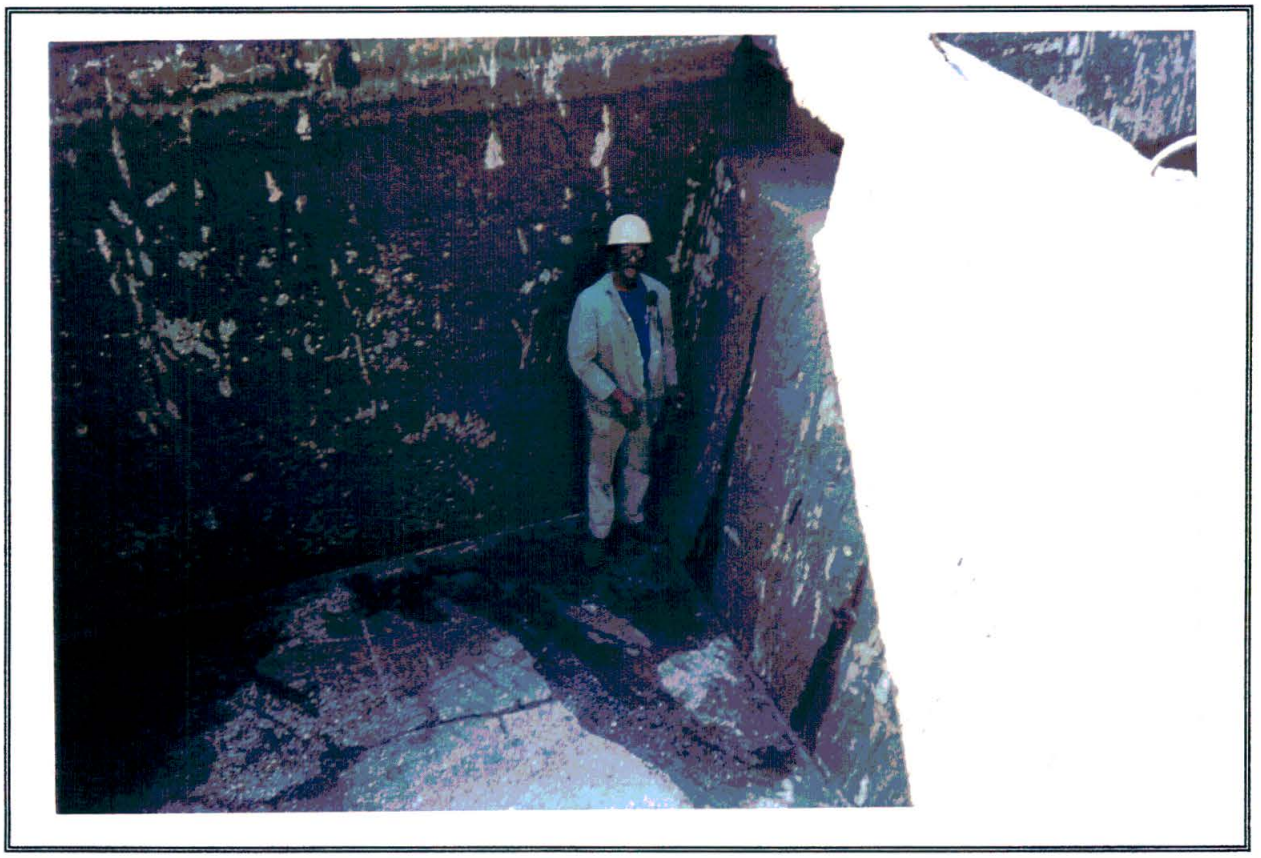
N SIDE	14-17	Roll 2		
E SIDE	18,19	Roll 2	Row 3	19-20
S SIDE	23,24	Roll 2	Roll 3	15-18
W SIDE	20-22	Roll 2	Roll 3	14 [illegible] 21
Bottom	12,13	Roll 2		

Cracks running length of base of SWMU 2B looking west.



East wall of SWMU 2B. Observe area of corrosion near fill pipe.

North wall of SWMU 2B. Dampness on wall from fill pipe.



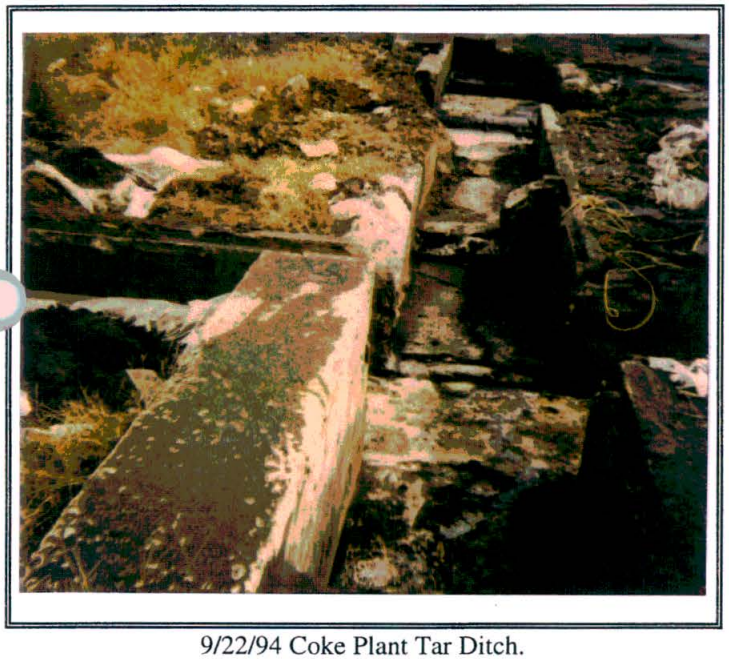
Seeps present on wall separating SWMU 2B and 1B (north wall of SWMU 2B).

APPENDIX A.6

COAL TAR STORAGE AREA DRAIN SYSTEM (SWMU 5)

9/20/94 Coke Plant Tar Ditch.

9/21/94 Coke Plant Tar Ditch.



9/22/94 Coke Plant Tar Ditch.

9/28/94 Coke Plant Tar Ditch.

Old Tar Tank Ditch.

9/15/94 Coke Plant Tar Ditch with clean fill dirt in it.

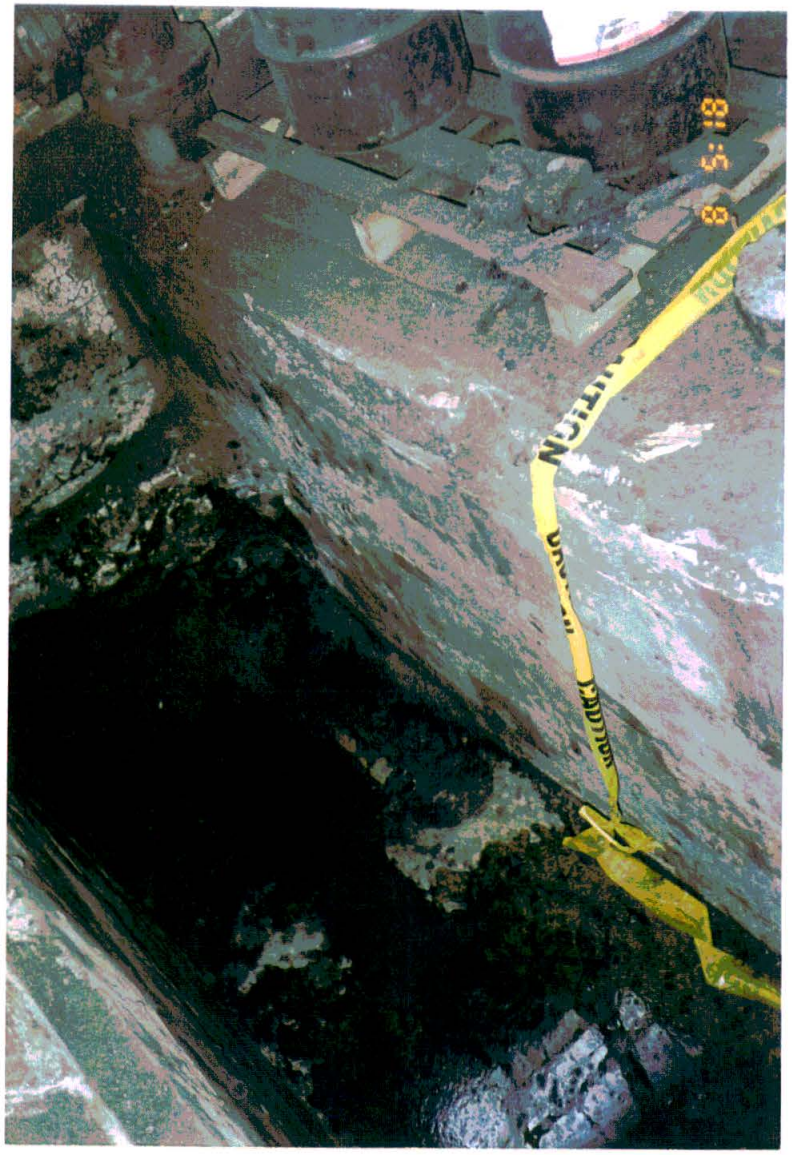
9/20/94 Coke Plant Tar Ditch.

9/21/94 Coke Plant Tar Ditch.

10/12/94 Coke Plant Tar Ditch - rainy weather.

APPENDIX A.7

COAL TAR COLLECTION SUMP IN NO. 1 PUMP HOUSE (SWMU 7)



North end of northern section of SWMU 7.

Southern section of SWMU 7 looking south.

North end of southern section of SWMU 7.

West wall of SWMU 7. Observe outfall to SWMU 9.

South wall of southern section of SWMU 7.

South end of north section of SWMU 7 with oily substance present in water entering from area surrounding pipe on west wall.

APPENDIX A.8

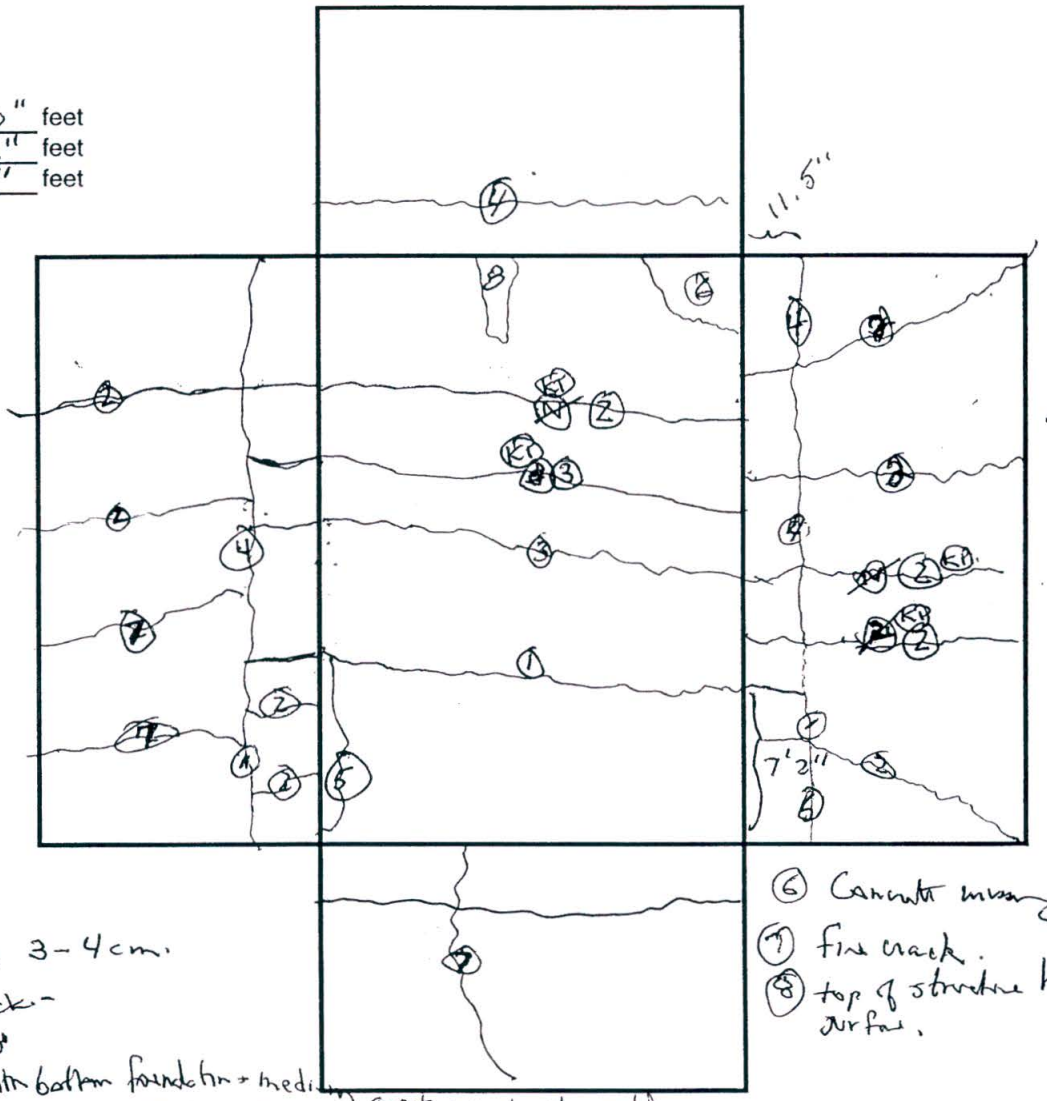
FLUSHING LIQUOR DECANTER (SWMU 8)

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a **heidemij** company

SUMP SURFACE DRAWING

Date: 10/29/96
Client: Sloss Industries
Project No.: TF0320.014
Location: Birmingham, Alabama
~~Sump~~: SWMU 8
Foundation

Sump Length: 39' 10" feet
Sump Width: 7'9½" feet
Sump ~~Depth~~ Height: 3'6" feet



N

① Large crack 3-4 cm.
② medium crack.
③ ~~Long~~ medium to large crack.
④ Join of top with bottom foundation = medium crack except where noted
⑤ Foundation offset 4" to west
⑥ Concrete missing
⑦ Fine crack.
⑧ top of structure has pitted surface.

Observations:
① Note - crack occurred after SWMU 8 was removed, summer 96.
Cannot penetrate cracks more than 1-2 mm.
② Top of structure has pitted surface.

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South Wall of SWMU 8 Foundation With Large Crack Along Horizontal Joint.

West Side of SWMU 8 Foundation With Fine Vertical Cracks and Crack Along Horizontal Joint.

North Side of SWMU 8 Foundation.

Top of SWMU 8 Foundation Showing Medium to Large Crack.

East Wall of SWMU 8 With Large Horizontal Crack Along Joint and Medium Vertical Cracks.

APPENDIX A.9

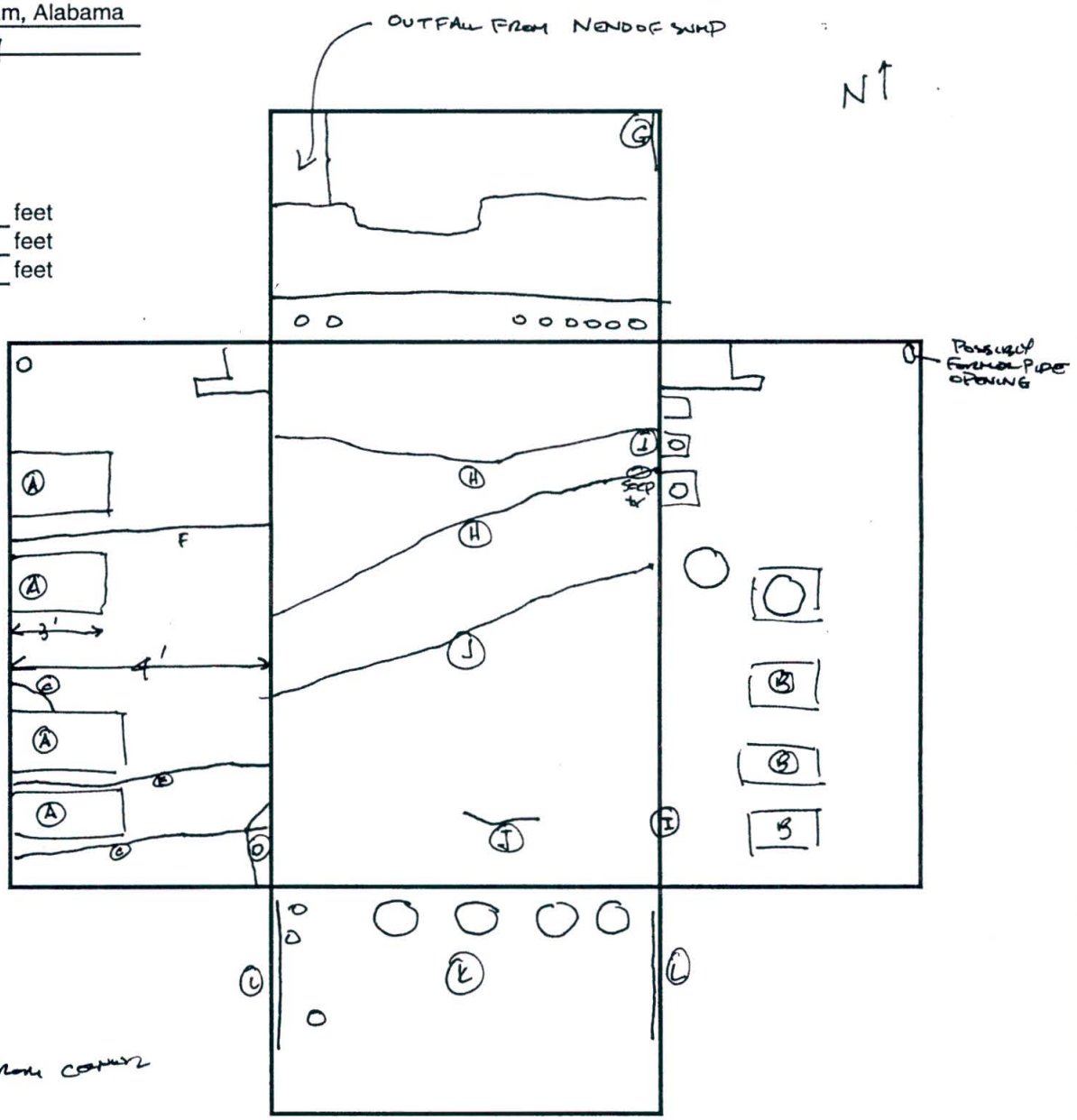
FLUSHING LIQUOR DECANTER SUMP (SWMU 9)

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a **heidemij** company

SUMP SURFACE DRAWING

Date: 6/21/96
Client: Sloss Industries
Project No.: TF0320.014
Location: Birmingham, Alabama
Sump: SWMU 9

Sump Length: _____ feet
Sump Width: _____ feet
Sump Depth : _____ feet



(A) INFALL FROM COLLECTION SYSTEM
(B) CONNECTION TO SWMU 7
(C) LARGE CONCRETE CRACK W/NO SEEP
(D) MED CRACK W/ H_2O SEEP PICT 13
(E) LONGER MED CRACK W/SEEP TOWARDS BOTTOM
(F) MED CRACK W/ H_2O SEEP TOWARDS BOTTOM (TRICHLOROETHYLENE PRODUCT) PICT 10
(G) H_2O FROM PUMP HOUSE #1 PUDDLING GROUND RUNNING IN (14)
(H) MED CRACK (17)(18)
(I) TAR SEEP FROM WALL (15)
(J) MED CRACK W/ TAR SEEP (21 & 22) 23
(K) H_2O W/SOME TAR SEEPING FROM PIPES AND POSSIBLY AROUND PIPES
(L) POSSIBLE H_2O SEEP FROM CORNER

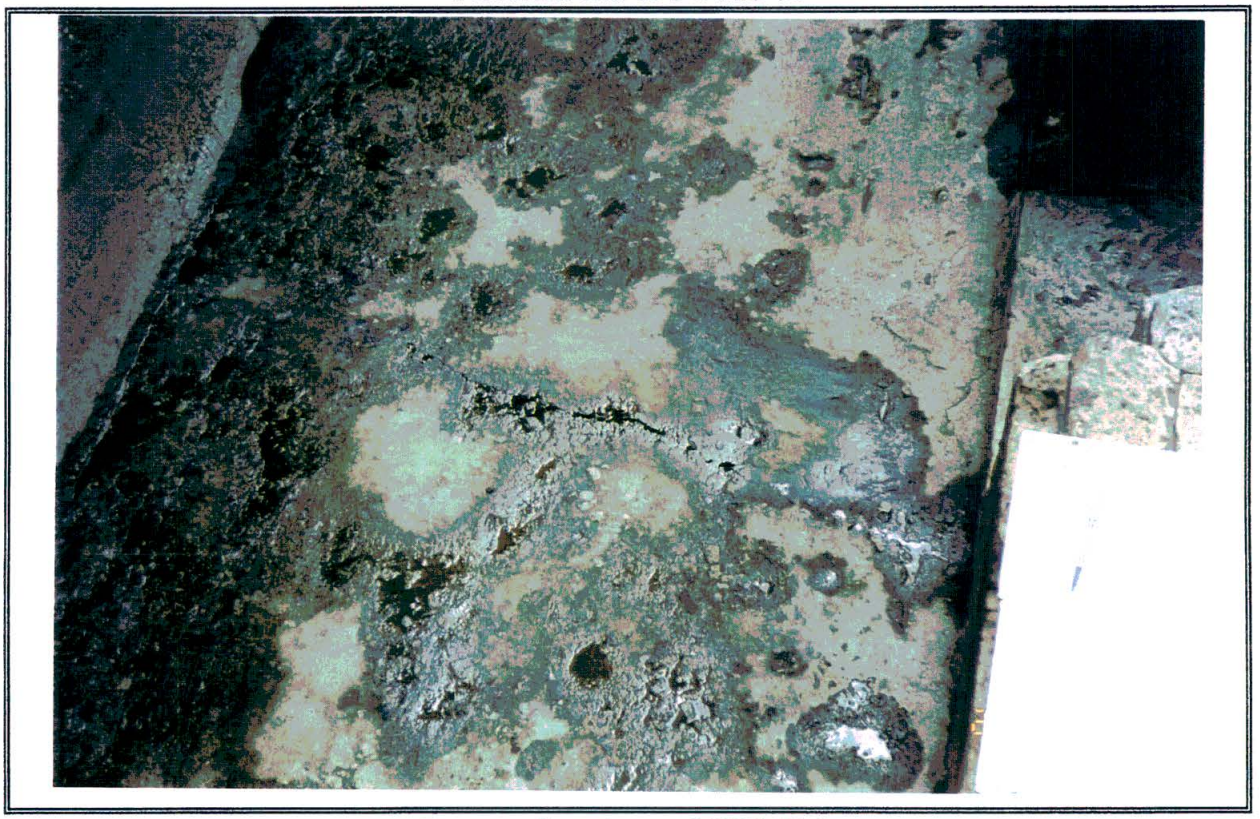
Observations:

N PICT 24, 25, 16
S PICT 1, 25 ROW 10
E PICT 1-5
W 6-12, 13
BOTTOM 17, 18, 19, 20 (seep from 9 crack), 21, 22, 23 24

South end of SWMU 9.

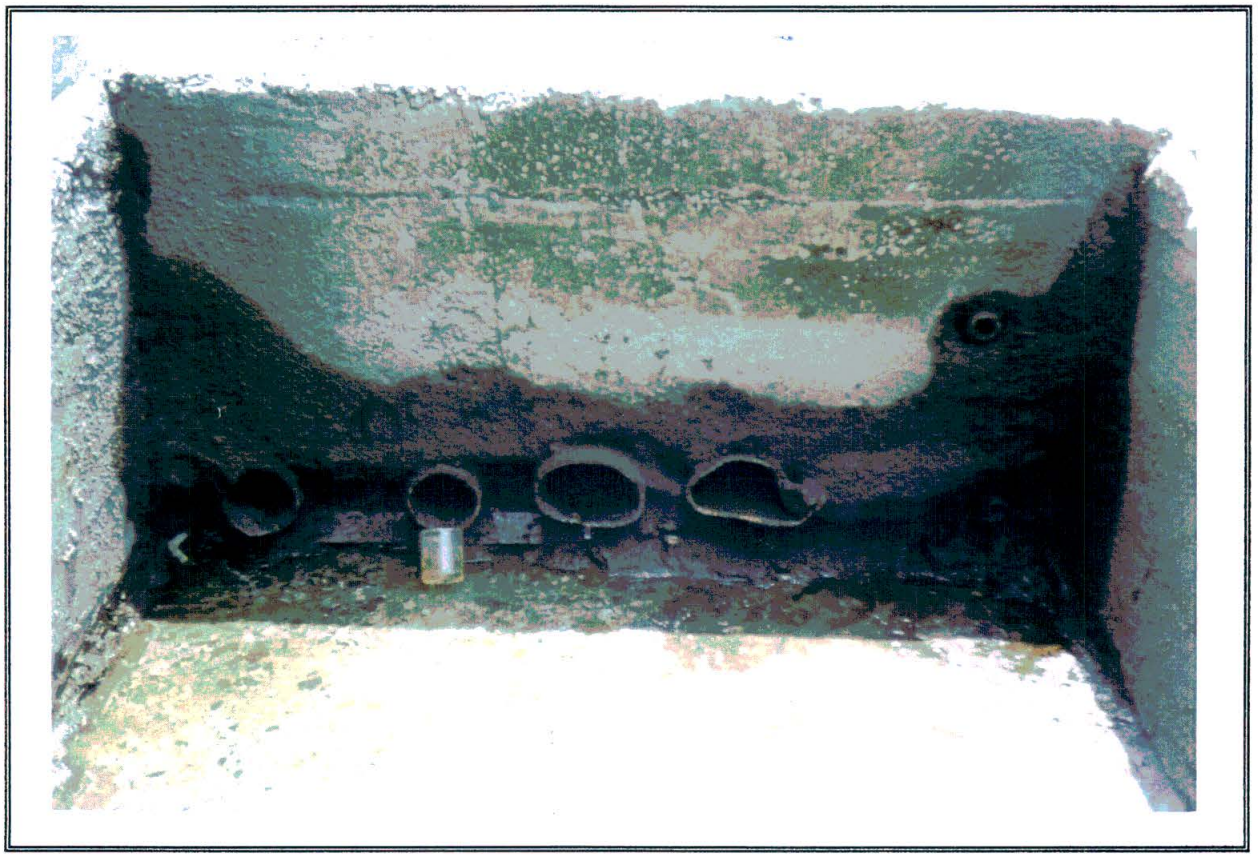
West wall of SWMU 9 with water seep from horizontal crack near base of SWMU 9.

Northern end of SWMU 9.



Tar seep from base of SWMU 9.

Water and oily product seep from large to medium crack on western wall of SWMU 9.



Uncapped pipes at south end of SWMU 9. Observe oily product discharging from bottom right of photograph.

APPENDIX B

FIELD SAMPLING LOGS

APPENDIX B.1

SOIL BORING AND SAMPLING LOGS

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 960602 CO-OM-SB0004 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Drilling Started 6/10/96 Drilling Completed 6/10/96

Total Depth Drilled 12 feet Hole Diameter 4.25 (KY) inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 587.80 (KY) feet (KY) 10/4/96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron Helper Hak/Billy

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	2.0	1/2/2/4	COKE, black, moist, no odor, OVM ND
2	4	1.0	3/5/6/4	COKE as above Saturated at ≈3.0 ft bls
4	6	1.0	1/1/1/2	Coke as 2-4, moist to wet, vf → med, loose, no odor OVM ND
6	8	1.0	1/HW/1/HW	CLAY, mod brown, w/ mod reddish brown mottling, Saturated, no odor, OVM ND, H_2O's cloudy warm (QT H_2O)
8	10	1.0	3/2/2/4	CLAY, mod reddish brown, Saturated, no odor, plastic, H_2O's Clay Warm (QT H_2O), OVM ND
10	12	0.1	1/1/1/1	CLAY, mod reddish brown saturated, plastic, w/ H_2O's clay warm (QT H_2O), OVM ND

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960610 - CO - 01A - SL0004 (2 - 4 ') Coded/Replicate No. —

Date 6 / 10 / 96 Time of Sampling: Begin 1555 End

Weather Sunny 80's, SE wind, 5mph

Site Description On western edge of Sump 1A Sump, in line w/ H_2O seep in base of sump observed during sump inspection

SAMPLING DATA

Collection Method Split spoon: 8260, PP metals, Cn, & Ba composited w/ split spoon in SS bowl

Depth 2-4 Moisture Content moist to saturated

or Black Odor —

Description COKE & some CLAY; mod brown (in 3rd SS)

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks $\bar{V} \simeq 3.0$

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 96611 - CO - 019 - SB0005 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Drilling Started 6 / 11 / 96 Drilling Completed 6 / 11 / 96

Total Depth Drilled 6 feet Hole Diameter 4.25 inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 585.81 feet (KT) 11/4/96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron F. Helper Hal S. / Billy W

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	1.0	7/5/8/8	COKE, COAL, WOOD, RR BALLAST, black, dry to moist,
				no odor, OVM ND
B20 2	4	1.0	8/8/9/6	COAL DIRT OVERLYING RR BALLAST. SATURATED
		2nd set 7/8/7/4		AT 3FT BLS. H_2O i soil/rr ballast warm (QT H_2O),
				OVM ND
4	6	0.25	5/2/3/17	RR BALLAST + CLAY (CH), mod reddish brown w/ coarse
				angular sand in bottom of split spoon, saturated,
				no odor OVM ND, H_2O i soil hot (QT H_2O)

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960611 - CO - 01A - SL0005 (2 - 4 ') Coded/Replicate No. —

Date 6 / 11 / 96 Time of Sampling: Begin 830 End —

Weather Sunny 80's, Sewnd, 5mph

Site Description At SE corner of SWMU 1A sump adjacent to seep observed in corner of SWMU 1A

SAMPLING DATA

Collection Method Split spoon; 8270, PP METALS, Cn, & Ba composited in s/s bowl w/ s/s spoon

Depth 2 - 4 Moisture Content moist to saturated

lor black Odor —

Description Coal, vf gr resembling soil, black, overlying rr ballast. Saturated at 3.0 ftbls

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

marks H_2O & Soil warm (Quench Tower H_2O)

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 960610 - CO - 02A - SB0001 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama Drilling Started 6 / 10 / 96 Drilling Completed 6 / 10 / 96

Total Depth Drilled 18 feet Hole Diameter 4.25 (KT) inches Type of Sample/Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 585.36 feet (KT) ☒ Surveyed 11/4/96 ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron Helper Hal/Billy

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	2.0	3/6/24/40	COAL/COKE BREEZE, black, vf-f gr, stiff, dry, no odor OVM ND
2	4	1.75	10/5/10/8	COAL/COKE, black, vf-f gr, stiff, w/some CLAY, black, plastic, moist to wet, no odor OVM ND
4	6	1.0	6/8/5/4	COAL/COKE w/ CLAY, black, plastic, wet, organic odor OVM ND
6	8	2.0	2/3/4/7	CLAY, Grayish brown w/ mod reddish brown mottling & med-coarse sand (well rounded), plastic, saturated, no odor, OVM ND
8	10	2.0	3/2/6/8	CLAY as above, plastic, saturated, no odor, OVM ND
10	12	1.75	10/13/16/13	CLAY, olive gray w/ some coarse rounded sand, plastic overlying 0.5' of CLAY, moderate brown, stiff w/ mod reddish brown mottling, saturated, no odor, OVM ND
12	14	2.0	9/12/14/14	CLAY, mod. brown, stiff w/ mod reddish brown mottling and coarse sand, moist → saturated, no odor, OVM ND
14	16	2.0	7/10/12/18	CLAY, mod reddish brown to olive gray, w/ mod reddish brown mottling, stiff, no odor w/ coarse rounded sand, moist to saturated, OVM N
16	18	1.75	12/15/18/19	CLAY, mod brown, stiff, w/ some mod reddish brown mottling, & coarse rounded sand, no odor, moist → saturated, OVM ND

125 *

105 *

▽ = 3

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960610 - CO - 02A - SL0001 (2-4') Coded/Replicate No. 960610-CO-02A-FB0004 960610-CO-02A-SLEB09

Date 6/10/96 Time of Sampling: Begin 1125 End

Weather SUNNY, 80's — SE WIND, 5mph

Site Description NE corner of SWMU 2A near seep observed during sump inspection

SAMPLING DATA

Collection Method Split spoon : 8270, PP Metals, Cn, & Ba Composited in stainless steel mixing spoon

Depth 2-4 Moisture Content moist → saturated

Color black Odor

Description COAL/COKE, vf-fgr, silt w/ some CLAY, black, plastic

Analyses Required

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Container Description

From Lab X or G&M

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks FB & EB collected using Four Words Sodium Free Distilled H_2O (Lot #1652)

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960610 - CO - 02A - SL0001 (16 - 18 ') Coded/Replicate No. —

Date 6 / 10 / 96 Time of Sampling: Begin 1405 End —

Weather Sunny 80's → 90's, SE wind, Supk

Site Description NE corner of SWMU 2A near Seep observed during sump inspection

SAMPLING DATA

Collection Method Splitspoons: 8270, PP Metals, Ba & Cn composited w/ s/s spoon in S/s bowl

Depth 16 - 18 Moisture Content moist to Saturated

lor Moderate brown w/ some reddish brown mottling Odor —

Description CLAY, stiff, (CL), w/ some coarse rounded Sand

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

:marks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 960610-CO-02A-SB0002 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Drilling Started 6/10/96 Drilling Completed 6/10/96

Total Depth Drilled 6 feet Hole Diameter ~~4.25~~ (KT) inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 585.23 feet (KT) 11-4-96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron Helper Hal/Billy

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	1.75	4/12/7/13	Coal/coke, black, vf-med gr, no odor, dry, OVM ND
2	4	1.0	6/5/7/4	Coal/coke As Above, moist → saturated, no odor, OVM ND
4	6	1.5	4/4/1/2	CLAY, dark gray w/ light gray mottling, plastic, saturated, no odor, OVM ND

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960610 - CO - 02A - SL0002 (2 - 4') Coded/Replicate No. —

Date 6/10/96 Time of Sampling: Begin 1520 End

Weather Sunny 80-90's, SE wind, Supk

Site Description S side of SWMU 2A, near seep observed during sump inspection

SAMPLING DATA

Collection Method split spoon; 8270, PP Metals, Cn, & Ba collected in SS bowl w/ SS spoon

Depth 2-4 Moisture Content moist - saturated

or Black Odor —

Description Coal/coke, uf-med gr,

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

narks V ≈ 3.0

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 960611 - CO - 034 - SB0001 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Drilling Started 6 / 11 / 96 Drilling Completed 6 / 11 / 96

Total Depth Drilled 12 feet Hole Diameter 4.25 inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 590.56 feet (KT) 11/4/96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron F Helper Hals./Buck B.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	1.0	4/4/4/4	COKE /CORE OVERLYING 0.25' of CLAY (CH) mod brown w/
				mod reddish brown mottling, moist, no odor, plastic
				OVM ND
2	4	0.75	2/2/3/3	CLAY as in 0-2 (bottom), Some coke mixed in clay
				Moist, no odor, OVM ND (CH)
4	6	0.5	2/1/2/3	CLAY as 2-4, moist, no odor, OVM ND (CH)
6	8	0.25	2/3/9/4	CLAY as 4-6' moist to wet, no odor, OVM ND (CH) ▽ ±7.0
		2nd 5/5/4/5		Some of ballast in bottom of split spoon
8	10	1.0	3/1/3/3	CLAY as 6-8, saturated, no odor, OVM ND (CH)
10	12	1.0	6/6/8/9	CLAY as 8-10, saturated, no odor, OVM ND (CH)

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960641 - CO - 03A - SL0001 (6 - 8') Coded/Replicate No. —

Date 6 / 11 / 96 Time of Sampling: Begin 945 End —

Weather SUNNY, 80's, SE WIND 5 mph NE

Site Description Approximately 5-10 ft from SW corner of SWMU 3A adjacent to corner seep observed during sump inspection

SAMPLING DATA

Collection Method Split Spoons ; 8270, Metals, CN, & Ba Composited w/stainless steel spoon in SS bowl

Depth 6-8 Moisture Content moist to saturated

lor moderate brown w/mod reddish brown mottling Odor —

Description CLAY, plastic (CH) w/some fr ballast in bottom of split spoon

Analyses Required

Container Description

From Lab X or G&M —

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

marks pH ≅ 7.0 units

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 960611 - CO - 03A - SB002 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama Drilling Started 6/11/96 Drilling Completed 6/11/96

Total Depth Drilled 12 feet Hole Diameter 4.25 inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 590.64 feet (KT) 11-4-96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron F. Helper Mac S. / Billy B.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	2.0	4/6/4/6	COKE/COAL w/0.25' of CLAY, mod brown, plastic, dry to moist, no odor, OVM ND (CH)
2	4	1.0	5/4/5/5	CLAY, mod brown, plastic, moist, no odor OVM ND (CH)
4	6	0.75	4/6/6/2	CLAY as 2-4, moist, no odor, OVM ND
6	8	1.0	7/6/4/5	CLAY as 4-6, higher moisture than 4-6, no odor, OVM ND
8	10		1/2/4/3	SLOUGH INSIDE AUGERS (COKE)
DRIVE AGAIN 8	10	1.0	4/4/11/7	CLAY as 6-8, saturated at 9.0 ft b/s, no odor, OVM ND
10	12	1.5	4/7/42/50/2	REFUSAL CLAY, dark gray, 0.5', saturated overlying WOOD & CONCRETE. FORM from SWMU 3A construction and or associated debris

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960611 - CO - 03A - SL0002 (8 -10 ') MS/MSD 960611-CO-03A-SL0002 Coded/Replicate No.

Date 6 / 11 / 96 Time of Sampling: Begin 1125 End

Weather SUNNY 80's 90's, SE WIND 5 mph

Site Description Center of western side of SWMU 3A near crack that runs from top of sump to base of sump

SAMPLING DATA

Collection Method Split spoons, 8270 & PP metals Ba & Cn composited in SS bowl w/ SS spoon

Depth 8-10 Moisture Content moist to saturated

or Moderate brown Odor —

Description CLAY, plastic saturated at 9.0 ft bls

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks V ≅ 9.0

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 960613 - CO - 018 - SB0009 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama Drilling Started 6/13/96 Drilling Completed 6/13/96

Total Depth Drilled 14 feet Hole Diameter 4.25 inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 584.70 feet KT 11-4-96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Don F Helper Hales. / Billy S.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	1.0	5/22/39/47	SLAG, Dry, OVM ND No odor
2	4	0.5	10/5/4/12	SLAG, as overlying, Dry
580 → 4	6	0.75	4/3/2/3	CLAY, (CL-CH) mod reddish brown, stiff to plastic, moist,
				no odor, OVM ND w/ some black mottling
6	8	2.0	3/4/6/7	CLAY, (CL) as above, stiff, w/ little to no black
				mottling, no odor, OVM ND, moist
580 → 8	10	2.0	5/6/11/19	CLAY as 6-8, stiff (CL), moist (more moisture
				top of splitspoon), some mod brown mottling,
				no odor, OVM ND
575 → 10	12	2.0	9/13/15/17	CLAY, (CL) light brown w/ mod reddish brown mottling,
				stiff no odor, OVM ND, moist
620 → 12	14	1.0	19/26/50/4	CLAY, (CL) mod reddish brown w/ light brown mottling,
				stiff, moist, OVM ND, no odor, bottom of spl
				Spoon wet
13.5	14			Broken Rock
14				Rock

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960613 - CO - 01B - SL0004 (4 - 6 ') Coded/Replicate No. 960613-CO-01B-FB0006 960613-CO-01B-SLE006

Date 6 / 13 / 96 Time of Sampling: Begin 1530 End

Weather Sunny, humid, 80's

Site Description east side of Quench Tower B

SAMPLING DATA

Collection Method Split spoon: 8270, PP METALS, Ba & Cu composited w SS spoon in SS bowl

Depth 4-6 Moisture Content moist

lor med-reddish brown w/some black mottling Odor —

Description CLAY, stiff to plastic (CL-CH)

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

emarks FB & EB COLLECTED W/ FOUR SEASONS SODIUM FREE DISTILLED H_2O (LOT 148 & LOT 1985152, respectiv

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960613 - CO - 013 - SL 0004 (8 - 10 ') Coded/Replicate No. —

Date 6/13/96 Time of Sampling: Begin 1550 End —

Weather Sunny, 80's, Humid

Site Description eastside of Quench Tower B

SAMPLING DATA

Collection Method Split spoons : 8270, PP metals, Ba, Cn composited w/ss spoon in ss bowl

Depth 8 10 Moisture Content moist

Color mod reddish brown some mod brown mottling Odor —

Description CLAY, silt (cl)

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM NO

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960613 - CO -01B - SL0004 (10 -12 ') Coded/Replicate No. —

Date 6 / 13 / 96 Time of Sampling: Begin 1605 End

Weather Sunny, 80's, Hum. D

Site Description east side of Quench Tower B

SAMPLING DATA

Collection Method Split spoon : 8230; Metals composited w/ SS spoon in SS bowl

Depth 10 - 12 Moisture Content moist

Color light brown w/ mod reddish brown mottling Odor —

Description CLAY, SILT (CL)

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960613 - CO - 013 - SL 0004 (12 - 14 ') Coded/Replicate No. —

Date 6 / 13 / 96 Time of Sampling: Begin 1620 End

Weather SUNNY, HUMID, 80's

Site Description east side of Quench Tower B

SAMPLING DATA

Collection Method Split spoons ; 8270 ; metals composited w/ss spoon in cs bowl

Depth 12 - 14 Moisture Content moist at bottom of spoon

lor mod. reddish brown w/ light brown mottling Odor —

Description SILT, s.t. CL

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

emarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 96064 - CO - 09 - SB0005 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Drilling Started 6 / 19 / 96 Drilling Completed 6 / 19 / 96

Total Depth Drilled 11.5 feet Hole Diameter 4.25(6) inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 584.78 feet (KT) 11-4-96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron F. Helper Hal S. / Billy B.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	2.0	12/21/40/60	COKE, black, loose, tarlike substance in bottom of
				Spoon w/in pores, OVM ND, chemical odor
2	4	0.75	4/13/21/5	SLAG w/some CLAY, med gray, moist, plastic, sheen,
				OVM ND (CH)
4	6	1.75	15/10/4/6	CLAY, mod reddish brown, plastic, moist, OVM ND, w/
				some COKE from 4.5 to 5 (CH)
6	8	1.75	8/19/10/16	CLAY, mod reddish brown, stiff (CL), moist,
				no odor, OVM ND
8	10	0.5	11/5/11/16	CLAY as 6-8, moist, plastic, no odor, OVM ND (CL)
10	12	0.1	5/4/30/50/5	CLAY as 8-10 (CL), OVM ND, no odor
11.5				Rock or SLAG some pieces of slag in bottom of 10-12 split
				spoon
9	11			Same as 10-12

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960614 - CO - 013 - SL 0005 (6 - 8 ') MS/MSD Coded/Replicate No. 960614-CO-013-SL9005

Date 6 / 19 / 96 Time of Sampling: Begin 830 End

Weather Sunny 80's, Humid, SE wind 5mph

Site Description Approx 20 ft east of Sump 18 Sump east side of hotcar track

SAMPLING DATA

Collection Method Split spoon: 8270 + metals composited w/ SS spoon in SS bowl

Depth 6 - 8 Moisture Content moist

lor Mod reddish brown Odor —

Description Clay Stiff (CL)

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

emarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960614 - CO - 01B - SL 0005 (9 - 11 ') Coded/Replicate No. —

Date 6/14/96 Time of Sampling: Begin 925 End

Weather Sunny, 80's, Humid, Sewind Surph

Site Description Approx 20ft east of SWMU 1B sump, east side of hot car track

SAMPLING DATA

Collection Method Splitspoons; 8270 & Metals Composted in SS bowl w/ SS spoon

Depth 9 - 11 Moisture Content moist

ior mod reddish brown Odor —

Description CLAY, plastic (CH)

Analyses Required	Container Description
	From Lab X or G&M
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

.emarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960619 - CO - 023 - SL0001 (2.5 - 3') Coded/Replicate No. —

Date 6/19/96 Time of Sampling: Begin 1315 End —

Weather Sunny → overcast, 80s → 90s, Humid

Site Description On west side of SWMU 1B & 2B between railroad tracks. In the approximate middle of SWMU 1B & 2B sump structure, 3'x6'x3' trench dug w/ backhoe

SAMPLING DATA

Collection Method SS spoon: 8270 & Metals Composited in SS bowl w/ SS spoon

Depth 2.5 - 3 Moisture Content moist

Color mod brown Odor —

Description Clay, stiff, w/ pieces of limestone within clay matrix

oil like substance present in railroad ballast in isolated locations above clay.

Sheen on H_2O that collected in trench

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 96061 - CO - 05 - SB001 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Drilling Started 6 / 11 / 96 Drilling Completed 6 / 11 / 96

Total Depth Drilled 7 feet Hole Diameter 4.25 inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 584.35 feet (KT) 11-4-96 ☒ Surveyed ☐ Estimated Datum

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron F Helper Dan S. / Billy B

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	1	1.0	3/7	CLAY, mod reddish brown, (CH) shell, (FW) overlying 0.5'
				COKE, OVM ND, no odor, dry
1	3	1.0	6/7/3/3	CLAY, (CH) dark gray, saturated at 2.0, no odor ▽2.0
				OVM ND
3	5	1.5	6/3/4/4	CLAY, (CL) dark gray w/(mod reddish brown); some
				shell, SILTY SAND, vfgr, dark gray, saturated,
				no odor, OVM ND
5	7	2.0	4/3/1/1	CLAY, dark gray, saturated, no odor
				OVM ND

1635

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SAMPLE/CORE LOG (Cont.d)

Boring/Well 960611 - CO - 05 - SB 0001 Page 2 of 2

Prepared By Joseph Hughes

	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	7	9	0.5	3/2/2/2	CLAY (CH) light brown, loose, plastic, chemical odor, saturated, OVM ND
1145 *	9	11	1.25	4/5/10/9	CLAY (CH) mod brown w/ mod reddish brown mottling, organics, no odor, OVM ND, moist saturated & loose from ± 10 – 10.25
1155 *	11	13	1.0	1/3/50/1	CLAY (CH) mod brown, plastic, loose, saturated no odor, OVM ND
	12.5				Rock

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Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960611 - CO - 05 - SL0001 (1 - 3') Coded/Replicate No. —

Date 6/11/96 Time of Sampling: Begin 1635 End

Weather OVERCAST 80's TO 90, LIGHTENING IN DISTANCE

Site Description Southern most sample location at SWMU 5

SAMPLING DATA

Collection Method Split spoons, 8270 & PP metals composited in S/S bowl w/ s/s spoon

Depth 1-3 Moisture Content moist to saturated

or Dark gray Odor —

Description CLAY (CH)

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM NO

Remarks WT AT 2FT BLS

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960611 - CO -05 - SL 0001 (9 - 11') Coded/Replicate No.

Date 6/12/96 Time of Sampling: Begin 1145 End

Weather Sunny 80's Swing Supk

Site Description South end of Swing 5

SAMPLING DATA

Collection Method Split spoons : 8270, PP metals, Cn, & Ba composited in stainless bowl w/ss spoon

Depth 9-11 Moisture Content Moist

lor mod brown w/ mod reddish brown mottling Odor —

Description Clay, stiff, w/ organics (CL)

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

marks

Sampler(s) Joseph Hughes

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Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960611 - CO -05 - SL0001 (11 - 13 ') Coded/Replicate No. —

Date 6 / 12/ 96 Time of Sampling: Begin 1155 End —

Weather Sunny 80's, Swind 5 mph

Site Description South end of SWMU 5

SAMPLING DATA

Collection Method split spoons - 8270, PP Metals, Ba, Cu composited in SS spoon w/ SS spoon

Depth 11-13 Moisture Content Saturated

Color mod brown Odor —

Description CLAY, plastic loose

Analyses Required

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Container Description

From Lab X or G&M

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 96612 - CO - 05 - SB0002 Project/No. Sloss Industries TF0320.014 Page 1 of 2

Site Location Birmingham, Alabama

Drilling Started 6/12/96 Drilling Completed 6/12/96

Total Depth Drilled 15.5 feet Hole Diameter 4.25 inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 583.99 feet (KT) 11-4-96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller RON F Helper HAL S./BILLY B.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	1	0.5	6/12	COKE, w/some CLAY (CL), mod reddish brown, dry, no odor,
				OVM ND in top of S/S
1	3	0.75	7/9/3/1	COKE, w/ CLAY (CH), light brown, saturated at 2 ft bls
				no odor, OVM ND, +some rr ballast (angular gravel)
3	5	0.00	5/2/3/2	No recovery except rr ballast (angular gravel)
5	7	1.0	4/7/8/10	CLAY, light brown, plastic, loose, chemical
				odor, OVM ND, w/some rr ballast (angular gravel)
				(CH)
7	9	1.75	8/8/10/15	CLAY (CL), mod reddish brown w/ light brown
				mottling, stiff, moist chemical odor, OVM ND
9	11	1.75	4/9/6/9	CLAY as 7-9, stiff (CL), moist w/some black
				tar like substance in some of the pore space,
				chemical odor, OVM ND
11	13	2.0	12/15/16/17	CLAY (CL), mod brown w/ mod reddish brown mottling
				and coarse sand Tar like substance in pore
				spaces of clay, OVM ND, chemical odor, Stiff,
				Moist, Saturated silty sand lense from 11.25-11.30 (SM)
13	15	2.0	17/18/17/16	CLAY (CL), mod brown w/coarse sand, OVM ND,
				stiff, moist, no noticeable odor.

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SAMPLE/CORE LOG (Cont.d)

Boring/Well 96062 - CO - 05 - SB0002 Page 2 of 2

Prepared By Joseph Hughes

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
055 * 15	17	1.0	12/50/2	REFUSAL CLAY (CH), mod brown, moist to saturated,
				slight chemical odor, plastic, DVHND
15.5				ROCK

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960612 - CO - 05 - SL0002 (1 - 3 ') Coded/Replicate No. —

Date 6/12/96 Time of Sampling: Begin 940 End

Weather OVERCAST 80's STEWIND 5mph

Site Description on east side of SWMU 5, South of pumphouse foundation

SAMPLING DATA

Collection Method Split spoon : 8270, PP METALS, Cn, 1 lbs composited in SS bowl w/ SS spoon

Depth 1-3 Moisture Content Saturated 2'

Color light brown Odor —

Description COKE w/ CLAY (CH) + some rr ballast (angular gravel), plastic

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960612 - CO - 05 - SL0002 (11 - 13 ') Coded/Replicate No. —

Date 6 /12 / 96 Time of Sampling: Begin 1030 End

Weather overcast 80's SE wind 5mph

Site Description on east side of SWMU 5, south of pumphouse foundation

SAMPLING DATA

Collection Method Splitspoons - 8270, PPmetals, Ba & Cu composited in S/S bowl w/ SS spoon

Depth 11 - 13 Moisture Content moist

Color mod brown w/ mod reddish brown mottling Odor chemical

Description CLAY (CL) w/coarse sand, stiff, tar like substance in pore spaces, saturated silty sand base from 11.25 - 11.30

Analyses Required	Container Description
	From Lab X or G&M
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960612 - CO - 05 - SL0002 (15 - 17') Coded/Replicate No. —

Date 6 / 12 / 96 Time of Sampling: Begin 1055 End —

Weather overcast 80's, SE wind 5 mph

Site Description on east side of SWMW 5, south of pumphouse foundation

SAMPLING DATA

Collection Method Split spoon : 8270, PP Metals, Ba & Cu composited w/ SS spoon in SS bowl

Depth 15-17 Moisture Content moist → saturated

Color mod brown Odor slight chemical.

Description CLAY, plastic (CH)

Analyses Required	Container Description
	From Lab X or G&M
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 960612-CO-05-SB0003 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Drilling Started 6/12/96 Drilling Completed 6/12/96

Total Depth Drilled 7 feet Hole Diameter 4.25 inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 584.26 feet (KP) 11-4-96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron F. Helper Hal S. / Billy B.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	1	0.5	2/4	CLAY (CL), mod brown w/ mod reddish brown mottling, stiff dry, no odor, OVM ND
1	3	1.0	5/2/6/4	CLAY (CH), dark gray, loose, plastic, chemical odor OVM ND, sheen on sediment, some angular gravel (rr ballast)
3	5	1.5	1/1/2/3	CLAY (CH), dark to mod gray, loose, plastic, saturated, sheen on sediment, tar like substance in pore spaces of clay, OVM ND, chemical odor OVM augers w/ sediment on them MAX 7.0
5	7	1.0	1/1/1/1	CLAY as 3-5, sheen, saturated, strong chemical odor, OVM ND
7	9	0.0	50/0	Slough — concrete bottom of sump located between two extract tanks
7.0				Concrete

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Environmental Services

SAMPLE/CORE LOG

Boring/Well 960613 - CO - 05 - SB0004 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Drilling Started 6/13/96 Drilling Completed 6/13/96

Total Depth Drilled 11 feet Hole Diameter 4.25 inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 584.36 feet (KT 11-4-96) ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller RON F Helper HAS. / BILLY'S

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	1	0.50	5/12	CLAY (CL), mod reddish brown, w/organics, stiff, dry overlying
				0.25' of coke, no odor, OVM ND
825 * 1	3		12/50	BLACK COAL/COKE, moist to saturated
				CLAY (CH), mod gray, plastic, chemical odor, some angular
				gravel & concrete, OVM ND
3	5	1.5	3/4/8/7	CLAY (CH), dark gray, w/some coarse sand, chemical odor,
				loose plastic, saturated, sheen on sediment,
				OVM ND
5	7	2.0	7/8/13/21	CLAY (CL), mod brown w/ mod reddish brown & light
				gray mottling, stiff, chemical odor, moist, OVM ND
930 * 7	9	2.0	8/5/8/12	CLAY (CH), dark gray, loose, plastic, saturated w/
				sheen overlying 1.0 of CLAY (CL), mod brown w/
				mod reddish brown mottling, stiff, no noticable
				odor OVM ND
940 * 9	11	1.75	12/15/21/26	CLAY (CL), mod brown w/ mod. reddish brown and light gray
				mottling, moist, OVM ND w/some weathered L.S.
				at 10.5 STIFF, moist
11	13	—	50/2	Shoe out
11				Rock

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Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960613 - CO - 05 - SL0004 (1 - 3') Coded/Replicate No. —

Date 6/13/96 Time of Sampling: Begin 825 End —

Weather OVERCAST, light rain, 80's

Site Description NW corner of SWMU 5 sump, just east of rr track

SAMPLING DATA

Collection Method split spoons; 8270's metals composited w/ ss spoon in ss bowl

Depth 1-3 Moisture Content moist to saturated

Color Med gray Odor Chemical

Description Clay, plastic (CH) w/ some angular gravel's concrete & coke

Analyses Required	Container Description
	From Lab X or G&M
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960613 - CO - 05 - SL0004 (7 - 9') Coded/Replicate No. —

Date 6/13/96 Time of Sampling: Begin 930 End

Weather OVERCAST, light rain, 80's

Site Description NW corner of SWMU 5 sump. just east of rr track

SAMPLING DATA

Collection Method split spoons: 8270; metals composited w/ ss spoon in ss bowl

Depth 7-9 Moisture Content Saturated

Color dark gray to mod brown w/ mod reddish brown mottling Odor top chemical to none bottom

Description CLAY, plastic (top) to stiff (bottom), (CH-CL), loose on top

Analyses Required

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Container Description

From Lab X or G&M

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960613 - CO - 05 - SL0004 (9 - 11 ') Coded/Replicate No. —

Date 6 / 13 / 96 Time of Sampling: Begin 940 End

Weather Overcast, light rain, 80's

Site Description NW corner of SWMU 5 sump, just east of rr track

SAMPLING DATA

Collection Method Split spoons : 8270 ; Metals composited w/ ss spoon in ss bowl

Depth 9 - 11 Moisture Content moist

Color Mod brown - w/ mod. reddish brown and light gray mottling Odor —

Description Clay, stiff (CH), w/ some weathered limestone

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 96043 - CO - 05 - SB 0005 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama Drilling Started 6 / 13 / 96 Drilling Completed 6 / 13 / 96

Total Depth Drilled 9 feet Hole Diameter 4.25 inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 583.97 feet (KT) 11-4-96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron F Helper Chris / Billy B.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	1	0.75	7/10	CLAY, mod reddish brown, w/organics overlying COKE
1	3	1.5	3/2/3/2	COKE (CC14), w/some dark gray CLAY, loose, plastic, chemical odor, OVM ND, saturated at 2.0
3	5	2.0	3/2/3/7	CLAY (CC14) mod red brown, w/some mod reddish brown mottling, tarlike substance in pore spaces, plastic, moist, chemical odor, OVM ND
5	7	1.75	7/9/10/12	CLAY (CC14) light brown w/some coarse gravel & dark gray mottling, stiff, more moisture in top of ss. Some tarlike substance in top of ss. Chemical odor, OVM ND
7	9	2.0	5/10/14/19	CLAY (CC14) mod reddish brown w/ mod brown, stiff, moist, Chemical odor, OVM ND, heavy sheen on outside & inside of split spoon, no sheen on pore spaces
9	11	—	50/4	Sloughs
9				ROCK

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Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960613 - CO - 05 - SD005 (1 - 3 ') Coded/Replicate No. _____

Date 6/13/96 Time of Sampling: Begin 1305 End —

Weather OVERCAST, HUMID, 80's

Site Description SW edge of SWMU 5 sump just east of rr tracks

SAMPLING DATA

Collection Method Split spoons : 8270 ; Metals composited w/ ss spoon in ss bowl

Depth 1-3 Moisture Content Saturated at 2.0

or Dark gray Odor Chemical

Description CLAY, loose, plastic (CH) & COKE

Analyses Required

Container Description

From Lab X or G&M _____

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

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Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960613 - CO -05 - SL0005 (5 - 7') MS/MSD 960613-CO-05-SL9005 Coded/Replicate No.

Date 6/13/96 Time of Sampling: Begin 1330 End —

Weather overcast, 80's, humid

Site Description SW edge of Swamp 5 swamp just east of rr tracks

SAMPLING DATA

Collection Method Split spoons: 8270 jar labels collected w/ ss spoon in ss bowl

Depth 5-7 Moisture Content moist to at top

or light brown w/ dark gray mottling Odor chemical

Description CLAY, stiff (CH), tar like substance in top of sls

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Marks Some sediment/soil from 7-9 used for MS/MSD & DUPLICATE SAMPLES

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 960615-CO-06-SB0001 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama Drilling Started 6/15/96 Drilling Completed 6/15/96

Total Depth Drilled 14 feet Hole Diameter 4.25(6) inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 586.38 feet (K+ 11-4-96) ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller RONF. Helper HALS./BILLYB.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	1.0	4/3/4/6	COAL/COKE, black, overlying CLAY, stiff (CL), moist, mod red-dish brown to mod brown, no odor, OVM ND
2	4	1.5	2/4/2/3	CLAY as 1-2 w/some coke/coal, spoon wet on outside, sediment moist, plastic-stiff (CL-CH), no odor, OVM ND
4	6	1.5	7/8/10/10	CLAY as 2-4, saturated at bottom ss (slough?), remainder moist, stiff (CL), no odor, OVM (ND)
6	8	2.0	12/15/16/10	CLAY, mod brown w/mod gray & red-dish brown mottling & iron concretions, stiff (CL) moist to dry, no odor, OVM ND
8	10	2.0	5/4/7/9	CLAY as 6-8 w/no iron concretions, stiff, moist (CL), no odor OVM ND
10	12	2.0	8/12/17/12	CLAY as 8-10 w/some black mottling, stiff, dry, no odor, OVM ND (CL)
12	14	2.0	24/37/34/50 for 4	CLAY as 10-12, dry, no odor, OVM ND
13.75				Rock

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

960615-CO-06-SL0003
960615-CO-06-FB0002

Sample I.D. No. 960615 - CO - 06 - SL0001 (0 - 1 ') Coded/Replicate No. —

Date 6 / 15 / 96 Time of Sampling: Begin 1115 End

Weather Sunny / 90s, Humid

Site Description NW side of SWMU 6

SAMPLING DATA

Collection Method Split spoon : 8270 + metals composited w/ ss spoon in ss bowl

Depth 0 - 1 Moisture Content moist

or black Odor —

Description COAL/COKE loose

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Marks FB + EB collected w/ Fair Winds Sodium Free distilled H2O (LOT# 152)

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960615 - CO - 06 - SL0001 (1 - 2 ') MS/MSD Coded/Replicate No. 960615-CO-06-SL9001

Date 6/15/96 Time of Sampling: Begin 1115 End

Weather Sunny 90s, Humid

Site Description NW side of Swmu 6

SAMPLING DATA

Collection Method Split Spoon : 8270 & Metals composited w/ ss spoon in ss bowl

Depth 1-2 Moisture Content Moist

lor Mod reddish brown to mod brown Odor —

Description CLAY, silt (CL)

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

marks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960615-CO-06-SL0001 (6-8') Coded/Replicate No. —

Date 6/15/96 Time of Sampling: Begin 1200 End

Weather Sunny 90s, Humid

Site Description NW side of SWMU 6

SAMPLING DATA

Collection Method Split spoon s: 8270 & Metals composited w ss spoon in ss bowl

Depth 6-8 Moisture Content moist to dry

Color mod brown w/ med gray & mod reddish brown mottling Odor —

Description CLAY, stiff (CL) w/ iron concretions

Analyses Required

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Container Description

From Lab X or G&M

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

Southprint 89-1093

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960615 - CO - 06 - SL000 1 (12 - 14 ') Coded/Replicate No.

Date 6 / 15 / 96 Time of Sampling: Begin 1235 End

Weather Sunny, 90s, Humid

Site Description NW side of Sump 6

SAMPLING DATA

Collection Method Split spoon : 8270 ; metals composited w/ ss spoon in ss bowl

Depth 12 - 14 Moisture Content dry

lor Mod brown w/ med gray & med reddish brown mottly Odor —

Description Clay, stiff (cl)

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

emarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 9605 - CO - 07 - SB001 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama Drilling Started 6/15/96 Drilling Completed 6/15/96

Total Depth Drilled 8.0 feet Hole Diameter 4.25 (6) inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 584.52 feet (KT) ☒ Surveyed 11-4-96 ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron F. Helper Hals. / Billy B.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	0.75	30/50/3	COKE, black, no odor, dry. SLAG at 1.0, OVM ND
2	4	1.0	17/19/10/11	SLAG/CONCRETE w/ some CLAY, med brown, w/ some tar like substance, dry, no odor, OVM ND
4	6	1.0	3/10/20/19	CLAY, olive gray, stiff, dry, strong chemical odor, tar like substance present, iron concretions, coarse sand, plastic (M) (CL)
6	8	1.5	12/16/18/50/3	CLAY as 4-6, no tarlike substance present, plastic, moist, OVM ND, no odor (CH)
8.0				Rock

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960615 - CO - 07 - SL 0001 (4 - 6') Coded/Replicate No. —

Date 6/15/96 Time of Sampling: Begin 915 End

Weather Sunny 80-90s, Humid

Site Description Southside of Pumphouse #1 3' in road

SAMPLING DATA

Collection Method SplitSpoon: 8270 & Metals composited w/ss spoon in ss bowl

Depth 4-6 Moisture Content Dry

Color Olive Gray Odor Strong Chemical

Description CLAY, silt (cl) w/ tar like substance & iron concretions present + coarse sand

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960615 - CO -02 - SL 0001 (6 - 8 ') Coded/Replicate No. —

Date 6/15/96 Time of Sampling: Begin 925 End

Weather Sunny 80s → 90s (Humid)

Site Description South side of Pump House #1, 3' in Road

SAMPLING DATA

Collection Method Split Spoon : 8270's Metals composited w/ss spoon in ss bowl

Depth 6-8 Moisture Content Moist

Color Olive gray Odor —

Description CLAY, stiff (cl) w/ iron concretions & coarse sand

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 960667-CO-07-SB0002 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama Drilling Started 6/17/96 Drilling Completed 6/17/96

Total Depth Drilled 9 feet Hole Diameter 4.25 (6) inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 584.09 feet (KT) 11-4-96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron F. Helper Hal S. / Brad B.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	—	—	Rocks, SAND, CLAY, General Fill, dry, no odor, OVM ND
2	4	1.25	1/4/10/10	CLAY, mod brown w/olive gray mottling, Stiff (CL), moist, no odor, OVM ND
4	6	1.5	5/10/11/12	CLAY, mod reddish brown w/some coarse sand + iron concretions, moist, no odor OVM ND (CL)
				Some coarse rounded sand in second spoon
				and very stiff in third spoon
6	8	2.0	4/9/15/19	CLAY, mod reddish brown w/light to medium gray mottling, iron concretions, coarse rounded sand stiff (CL) moist, no odor OVM ND
8	10	0.75	12/31/50+	CLAY as 6-8, stiff (CL), moist, OVM ND
9				Rock

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960617 - CO -07 - SL0002 (4 - 6 ') MS/MSD 960617-CO-07-SL9002 Coded/Replicate No.

Date 6 / 17 / 96 Time of Sampling: Begin 1050 End —

Weather Sunny 80's Humid

Site Description N. side of #1 Pumphouse, approx 20 ft north of building

SAMPLING DATA

Collection Method Split Spoon ; 8270 ; Metals composited w/ ss spoon in ss bowl

Depth 4-6 Moisture Content Moist

lor mod reddish brown w/ ~~some coarse~~ (J)

Odor —

Description CLAY ; stiff, w/ some iron concretions and some coarse rounded sand

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

emarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960617 - CO - 07 - SL0002 (6 - 8') Coded/Replicate No. —

Date 6/17/96 Time of Sampling: Begin 1100 End

Weather Sunny 80's Humid

Site Description N. side of #1 Pumphouse, approx 20ft north of building

SAMPLING DATA

Collection Method Split Spoon ; 8270; Metals composited w/ SS spoon in SS bowl

Depth 6-8 Moisture Content Moist

or Md reddish brown w/ light to medium gray mottling Odor —

Description CLAY, stiff (CL) w/ iron concretions & coarse rounded sand

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 9607 - CO - 08 - SB0001 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama Drilling Started 6/17/96 Drilling Completed 6/17/96

Total Depth Drilled 4 feet Hole Diameter 4.25 (6) inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 584.57 feet (KF) 11-4-96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron F. Helper Hal S. / Billy M.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	1.0	12/16/41/50 for	Asphalt, overlying coal/coke + slag overlying
				CLAY & SILTY SAND, med brown, moist to
				saturated (CL-CH, ML), OVM ND, no odor
2	4	1.5	6/12/41/46	CLAY, black, w coarse rounded SAND, some
			3/6/8/10	tar like substance present + minor med gray
				mottling, musty, chemical odor, OVM (JW) 1ppm (CL)
4	6		50/0	REFUSAL
4				ROCK

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960617 - CO - 08 - SL0001 (2 - 4') Coded/Replicate No. —

Date 6/17/96 Time of Sampling: Begin 1220 End —

Weather Sunny, 80→90s, humid

Site Description South of Sunnu 8, approx. 3' in road.

SAMPLING DATA

Collection Method Split Spoon: 8270 & metals composited w/ ss spoon in ss bowl

Depth 2-4 Moisture Content moist

Color black Odor chemical

Description CLAY w/ coarse rounded SAND (CL), stiff, tar-like substance present minor med gray mottling

Analyses Required	Container Description
	From Lab X or G&M
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM 1ppm

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 96614 - CO - 09 - SB0001 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama Drilling Started 6/14/96 Drilling Completed 6/14/96

Total Depth Drilled 8.0 feet Hole Diameter 4.25 (6) inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 584.39 feet (KT) ☒ Surveyed 11-4-96 ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller RON F Helper HALS. / BILLY B.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	0.5	24/37/40/15	COKE. overlying 0.5' CLAY, mod reddish brown,
				stiff (CL), no odor, OVM ND
425 → 2	4	1.5	5/8/7/5	CLAY, med to dark gray, plastic (CH), loose,
				saturated, chemical odor, OVM ND
1445 → 4	6	1.5	3/5/5/6	CLAY, mod reddish brown, stiff, moist (CL), chemical
				odor, more moisture at top 5/5 (slough?)
1445 → 6	8	0.5	5/6/50/5	CLAY, mod brown, stiff (CL), saturated to moist
				top of spoon, moist bottom of spoon, chemical odor,
				OVM ND

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960614 - CO - 09 - SL 0001 (2 - 4 ') Coded/Replicate No. —

Date 6 / 14 / 96 Time of Sampling: Begin 1425 End

Weather Sunny, 80s → 90s

Site Description At western end of swmu 9 sump. Approx. 3' in road

SAMPLING DATA

Collection Method Split spoon: 8270, BTEX, Cn, & Ba composited w/ ss spoon in ss bowl

Depth 2 - 4 Moisture Content Saturated

lor med to Dark gray Odor Chemical

Description CLAY, plastic, loose (CH)

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

emarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960614 - CO - 09 - SL 0001 (4 - 6 ') Coded/Replicate No. —

Date 6 / 14 / 96 Time of Sampling: Begin 1435 End —

Weather Sunny 80s → 90s

Site Description At western end of swrw 9 sump, approx 3' in road

SAMPLING DATA

Collection Method Split spoon : B270 ; metals composited w/ ss spoon in ss bowl

Depth 4-6 Moisture Content moist

lor moderate reddish brown, Odor Chemical

Description CLAY, silt (cl), higher moisture content at top of ss (possibly slough)

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

marks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960614 - CO - 09 - SL 000 ((6 - 8 ') Coded/Replicate No. —

Date 6 / 14 / 96 Time of Sampling: Begin 1445 End —

Weather Sunny 80s → 90s

Site Description At western end of Swmu 9 sump, approx 3' in road

SAMPLING DATA

Collection Method split spoon : 8270's metals composited w/ ss spoon in ss bowl

Depth 6 - 8 Moisture Content saturated to moist

or mod brown Odor chemical

Description CLAY, stiff, CL top of ss saturated

Analyses Required	Container Description
	From Lab X or G&M
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM No

marks

Sampler(s) Joseph Hughes

APPENDIX B.2

SURFICIAL SOIL SAMPLING LOGS

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960008 - CO - 01A - SL0001 (0 - 0.1') 960008-CO-01A-FB0003 (1230) Coded/Replicate No. 960008-CO-01A-SLE803(1245)

Date 6/8/96 Time of Sampling: Begin 1315 End —

Weather OVERCAST W/ OCCASIONAL MED. TO HEAVY RAIN

Site Description SWMU 1A QUENCH TOWER. SOUTHWEST OF QUENCH TOWER A

SAMPLING DATA

Collection Method S/S SPOON & BOWL

Depth 0-0.1' Moisture Content MOIST

Color BLACK Odor —

Description COKE BREEZE vf-med gr

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks FB/EB COLLECTED USING FOUR SEASONS SODIUM FREE DISTILLED H_2O (LOT# 148)

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960808 - CO - 01A - SL0002 (0 - 0.1') +MS/MSD · S60808-CO-014-SL9002 Coded/Replicate No.

Date 6 / 8 / 96 Time of Sampling: Begin 1330 End

Weather OVERCAST W/ OCCASIONAL MED. TO HEAVY RAIN

Site Description SWMU 1A QUENCH TOWER. CENTER EASTERN WALL OF QUENCH TOWER A

SAMPLING DATA

Collection Method S/S SPOON & BOWL

Depth 0 - 0.1' Moisture Content MOIST

Color BLACK Odor —

Description COKE BREEZE, vf - med gr

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960008 - CO - 01A - SL0003 (0 - 0.1') Coded/Replicate No. —

Date 6/8/96 Time of Sampling: Begin 1345 End

Weather OVERCAST W/ OCCASIONAL MED. TO HEAVY RAIN

Site Description SWMU 1A QUENCH TOWER. NE CORNER OF QUENCH TOWER A

SAMPLING DATA

Collection Method S/S SPOON & BOWL

Depth 0 - 0.1' Moisture Content MOIST

Color BLACK Odor —

Description COKE BREEZE, vf - med gr

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960608 - CO - 01B - SL0001 (0 - 0.1') Coded/Replicate No. —

Date 6/8/96 Time of Sampling: Begin 1415 End —

Weather OVERCAST w/ OCCASIONAL MED. TO HEAVY RAIN

Site Description SWMU 1B QUENCH TOWER. SE CORNER OF QUENCH TOWER B

SAMPLING DATA

Collection Method S/S SPOON & BOWL

Depth 0 — 0.1' Moisture Content MOIST

Color BLACK Odor —

Description COKE BREEZE, vf-med gr

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960608 - CO - 01B - SL0002 (0 - 0.1') Coded/Replicate No. —

Date 6/8/96 Time of Sampling: Begin 1430 End —

Weather OVERCAST w/ OCCASIONAL MED. TO HEAVY RAIN

Site Description SWMU 1B QUENCH TOWER. CENTER EASTERN WALL OF QUENCH TOWER B

SAMPLING DATA

Collection Method S/S SPOON & BOWL

Depth 0 — 0.1' Moisture Content MOIST

Color BLACK Odor —

Description COKE BREEZE, SF - MED GR

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960608 - CO - 01B - SL0003 (0 - 0.1') Coded/Replicate No. —

Date 6/8/96 Time of Sampling: Begin 1445 End

Weather OVERCAST w/ OCCASIONAL MED. TO HEAVY RAIN

Site Description SWMU 1B QUENCH TOWER. NE CORNER OF QUENCH TOWER B

SAMPLING DATA

Collection Method S/S SPOON & BOWL

Depth 0 - 0.1' Moisture Content MOIST

Color BLACK Odor —

Description COKE BREEZE, vf - med gr

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Ground-Water Consultants

SAMPLE/CORE LOG (Cont.d)

Boring/Well 96618 - CO - 10 - SB0001 Page 1 of 1

Prepared By Joseph Hughes

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	—	50/4	COKE/COAL, black, dry, no odor, OVM ND
2	4	2.0	5/4/5/5	CLAY, mod brown w/ minor olive gray mottling,
				plastic (CH), chemical odor, oil like substance
				(light yellow) present in pore spaces OVM 1.7ppm
4	6	2.0	4/6/5/3	CLAY (1.0') as 2-4, plastic, moist overlying
				CLAY (1.0'), med gray, plastic, moist w/ organics,
				oil like substance present in pore spaces,
				Chemical odor, OVM 1.1ppm

B/MSD + 60618-CO-10-SC9001 11:20

G&M Form 04 6-86 Southprint 87-1719

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960618 - CO - 10 - SL 0001 (2 - 4 ') Matrix Coded/Replicate No. 960618-CO-10-SL9000 /

Date 6 / 18 / 96 Time of Sampling: Begin 1120 End

Weather Sunny 80s - 90s, Humid

Site Description SW corner of SWMU 10 containment structure

SAMPLING DATA

Collection Method Split spoon : 8270 3 Metals Composited w/ss spoon in ss bowl

Depth 2 - 4 Moisture Content moist

Color mod brown w/ minor olive gray mottling Odor Chemical

Description CLAY, plastic (CH), oil like substance (light yellow) present in pore spaces

Analyses Required	Container Description
	From Lab X or G&M
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM 1.7 ppm

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 960618 - CO - 10 - SB 0002 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama Drilling Started 6 / 18 / 96 Drilling Completed 6 / 18 / 96

Total Depth Drilled 6 feet Hole Diameter 4.25 (6) inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 584.69 feet (KF) 1-4-96 ☒ Surveyed ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller Ron F. Helper Hans. / Buck B.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	2	0.25	50/3	ASPHALT overlying COAL/COKE, DRY, OVMND, no odor
2	4	2.0	4/3/3/3	CLAY, mod brown, plastic (CH), dry to moist, no odor, OVMND w/ some organics
4	6	0.75	5/5/2/5	CLAY, mod brown to olive gray (mottled) (CH), plastic, chemical odor (?) OVMND

1055 ?

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries IF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960618 - CO - 10 - SL0002 (2 - 4') Coded/Replicate No. 960617-CO-10-FB0009 960617-CO-10-SL0309

Date 6/18/96 Time of Sampling: Begin 1055 End

Weather Sunny, 80-90s, Humid

Site Description NW corner of containment structure at SWMU 10

SAMPLING DATA

Collection Method Split spoon : 8270 & Metals Composited w/ss spoon in ss bowl

Depth 2-4 Moisture Content dry to moist

Color med brown Odor —

Description CLAY, plastic (CH) w/some organics (sticks, twigs, etc.)

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks FB & EB collected w/ Fisher Brands Sodium Free Distilled H_2O (LOT #163)

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 960614 - CO - 11 - SB 0001 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama Drilling Started 6/14/96 Drilling Completed 6/14/96

Total Depth Drilled 6 feet Hole Diameter 4.25(6) inches Type of Sample/Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 584.30 feet ☒ Surveyed (KT) 11-4-96 ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller RONF Helper HAUS./BILLY B.

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	0.5	—	—	ASPHALT
0	2	1.5	20/15/11/10	COKE, black, no odor, dry, OVM ND, loose
1050 ▷ 2	4	2.0	6/6/2/2	COKE overlying CLAY, med reddish brown, saturated at 3.0
				plastic (CH), chemical odor, OVM ND
4	6	2.0	5/2/2/3	CLAY as above to olive gray, plastic, (CH) saturated,
				tar like substance present in pore spaces, OVM ND,
				chemical odor

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960614 - CO - 11 - SL 0001 (2 - 4 ') Coded/Replicate No. —

Date 6 / 19 / 96 Time of Sampling: Begin 1050 End

Weather Sunny 80's

Site Description Approx 3' west of northwestern corner of containment structure surrounding Swmu 11

SAMPLING DATA

Collection Method Split spoon : 8270 : Metals composited w/ ss spoon in ss bowl

Depth 2-4 Moisture Content saturated @ 3.0

or mod reddish brown Odor Chemical

Description Clay, plastic

Some of 4-6 sls used to fill 8270 : Metals (some tar like substance present)

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SAMPLE/CORE LOG

Boring/Well 960614 - CO -11 - SB0002 Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama Drilling Started 6/14/96 Drilling Completed 6/19/96

Total Depth Drilled 6 feet Hole Diameter 4.25(6) inches Type of Sample/ Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous feet

Land-Surface Elev. 584.33 feet (KB) ☒ Surveyed 11-4-96 ☐ Estimated Datum MSL

Drilling Fluid Used None Drilling Method Hollow stem auger

Drilling Contractor Graves Service Company Driller RON F Helper HAL S/ BILLY B

Prepared By Joseph Hughes Hammer Weight 140 lb Hammer Drop 30 inches

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	0.5			ASPHALT
0	2	2.0	12/14/19/13	COKE, black, dry, loose, no odor, OVM ND
2	4	1.75	17/8/7/8	COKE, black, saturated at 3.0 Ft bls. 0.1 liter substance (dark yellow) in sediment, chemical odor, OVM ND w/ some CLAY in bottom of spoon
4	6	1.75	10/6/3/2	COKE overlying CLAY, mud gray w/ coarse Sand, saturated, plastic, (CH), chemical odor, OVM ND Oil like substance present

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TE0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960614 - CO - 11 - SL 0002 (2 - 4 ') Coded/Replicate No. —

Date 6/14/96 Time of Sampling: Begin 1020 End

Weather Sunny 80's

Site Description Approx 3' west of south western corner of control structure surrounding Sump 11.

SAMPLING DATA

Collection Method Splitspoons: 8270's metals composited w/ ss spoon in ss bowl

Depth 2-4 Moisture Content Saturated at 3.0

lor black Odor Chemical

Description COKE, w/ some CLAY in bottom of spoon. Oil like substance (dark yellow) in sediment

Analyses Required	Container Description
	From Lab X or G&M
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

emarks

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960607 - CO - 12 - SL0001 (0.5 - 1.5') Coded/Replicate No. 960606-CO-12-FB0002 960606-CO-12-SLE502

Date 6/7/96 Time of Sampling: Begin 1045 End

Weather SUNNY 80's → 90's

Site Description ~~WEST~~ SOUTH OF SWMU-12 EASTERN MOST SOIL SAMPLE LOCATION

SAMPLING DATA

Collection Method S/S HAND AUGER

Depth 0.5 - 1.5 Moisture Content DRY → MOIST

or MODERATE BROWN W/ LIGHT BROWN MOTTLING Odor —

Description CLAY, STIFF (CL)

Analyses Required

Container Description

From Lab X or G&M

Analyses Required	Container Description
EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

Remarks FIELD & EQUIPMENT BLANK COLLECTED W/ FOUR WINDS SODIUM FREE DISTILLED H2O (LOT# 129)

Sampler(s) Joseph Hughes

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960607 - CO - 12 - SL0002 (0.5 - 1.5') MS/MSD 960607-CO-12-SL9002 Coded/Replicate No.

Date 6 / 7 / 96 Time of Sampling: Begin 1100 End

Weather SUNNY 80's → 90's

Site Description ~~WEST~~ SOUTH OF SWMU-12 WESTERN MOST SOIL SAMPLE LOCATION

SAMPLING DATA

Collection Method S/S HAND AUGER

Depth 0.5 - 1.5 Moisture Content MOIST

or MODERATE BROWN w/ LIGHT BROWN MOTTLING Odor —

Description CLAY, STIFF → PLASTIC (CH)

Analyses Required

Container Description

From Lab X or G&M

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM ND

narks ROCK PRESENT AT 12.0 FTBLS

Sampler(s) Joseph Hughes

APPENDIX B.3

QUENCH WATER SAMPLING LOGS

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Site/Well No. 960605 - CO - 028 - PW000 1 Coded/ Replicate No. 960605-CO-028-FB000 1, 960605-CO-028-PW880 1, 960605-CO-028-PW900 1 8260, 8270 (CONTAINERS EITHER FOR MS/MSD)

Date 6/5/96

Weather SUNNY 80's Time Sampling Began 1200 Time Sampling Completed 1400

EVACUATION DATA

Description of Measuring Point (MP) _____

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP _____ Water-Level Elevation _____

Held _____ Depth to Water Below MP _____ Diameter of Casing _____

Wet _____ Water Column in Well _____ Gallons Pumped/Bailed Prior to Sampling _____

Gallons per Foot _____

Gallons in Well _____ Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method _____

SAMPLING DATA/FIELD PARAMETERS

Color LT GRAY Odor — Appearance S TURBID Temperature 59.8 °F (°C)

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm 200 pH 8.71

Sampling Method and Material Teflon Bailer

Constituents Sampled	Container Description From Lab X or G&M	Preservative
EPA 8260	(3) 40 mL glass jar	HCl
EPA 8270	(3) liter amber glass	
Priority Pollutant Metals	1 liter plastic	HNO_3
Barium	1 liter plastic	HNO_3
Cyanide	1 liter plastic	NaOH

Remarks BUBBLE FOUND IN ALL VOC VIALS AFTER COOLING (NO BUBBLES WHEN COLLECTED)

Sampling Personnel Joseph Hughes

WELL CASING VOLUMES

GAL./FT.							
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

GERAGHTY & MILLER, INC.
Environmental Services

WATER SAMPLING LOG

Project/No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Site/Well No. 960607 - CO - 02A - PW0001 Coded/ Replicate No. — Date 6/7/96

Weather OVERCAST Time Sampling Began 1415 Time Sampling Completed ____

EVACUATION DATA

Description of Measuring Point (MP) ____

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP ____ Water Level Elevation ____

Held ____ Depth to Water Below MP NA Diameter of Casing ____

Wet ____ Water Column in Well ____ Gallons Pumped/Bailed Prior to Sampling ____

Gallons per Foot ____

Gallons in Well ____ Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method ____

SAMPLING DATA/FIELD PARAMETERS

Color LT GRAY Odor — Appearance STURBID Temperature 54.7 °F (°C)

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 280 pH 9.34

Sampling Method and Material Teflon Bailer

Constituents Sampled	Container Description From Lab ____ or G&M ____	Preservative
EPA 8260	(3) 40 mL glass jar	HCl
EPA 8270	(3) liter amber glass	
Priority Pollutant Metals	1 liter plastic	HNO_3
Barium	1 liter plastic	HNO_3
Cyanide	1 liter plastic	NaOH

Remarks ____

Sampling Personnel Joseph Hughes

WELL CASING VOLUMES

GAL./FT.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

APPENDIX C

SURVEYING DATA

N E Z

3052,1296459.23449407,711945.727295547,584.491362184977,H&T
3053,1296848.18882001,712448.172336264,584.411039250918,H&T
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3590,1297604.01302739,712455.751148500,586.376636912640,SB 960615-CO-06-SL0001
3591,1298045.57914818,713234.743995621,584.784136322180,SB 960614-CO-01B-SL0005
3592,1298068.84347723,713272.761552200,584.589443332807,SP 960608-CO-01B-SL0001
3593,1298077.68778545,713295.661360689,584.698600608231,SB 960613-CO-01B-SL0004
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APPENDIX D

THREATENED AND/OR ENDANGERED SPECIES CORRESPONDENCE

GERAGHTY
& MILLER, INC.
Environmental Services

a **heidemij** company

August 20, 1996

Ms. Jan Johnson, Science Information Manager
Natural Heritage Program
Alabama Department of Conservation
and Natural Resources
64 N. Union St., Room 421
Montgomery, AL 36130

Re: Threatened and Endangered Species Information

Dear Ms. Johnson:

The purpose of this letter is to request the most recent information concerning the occurrence of threatened and/or endangered plant and animal species, any habitats of special concern, and/or environmentally sensitive areas at or in the vicinity (within a three mile radius) of the site indicated on the enclosed figure. If such areas exist at or in the vicinity of the site, but are not in a position to be potentially impacted by the site, please indicate this in your response.

The site location can be found on the USGA Topographical Quadrangle Birmingham, North Alabama map (see attached site location map). Geraghty & Miller, Inc. is preparing an environmental study of the site and your information will be included in the report summarizing this study.

Thank you for your attention to this matter. If you have any questions, please do not hesitate to contact me at (919) 571-1662.

Sincerely,

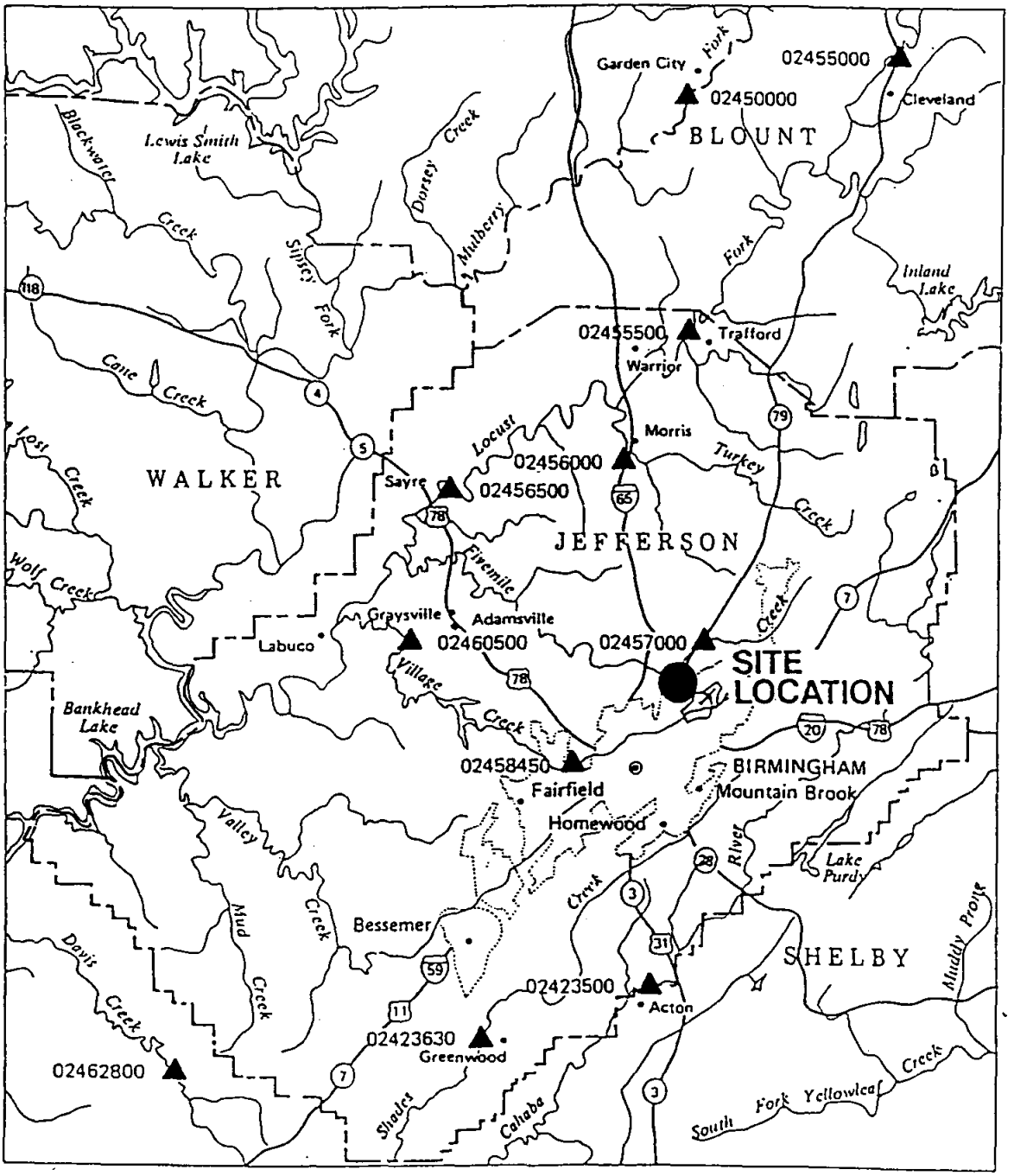
GERAGHTY & MILLER, INC.

Rob Drake
Staff Scientist/Biologist

Enclosure

sl g:\temp\rdrake\alt&e.doc\20-Aug-96

CrossPointe II, 2840 Plaza Place, Suite 350 • Raleigh, North Carolina 27612 • (919) 571-1662 • FAX (919) 571-7994



SOURCE: GEOLOGICAL SURVEY OF ALABAMA, ATLAS 16, 1980

GERAGHTY & MILLER, INC.
Environmental Services

REGIONAL SURFACE WATER HYDROLOGY

FACILITY - WIDE INVESTIGATION

FIGURE 3-2

GERAGHTY
& MILLER, INC.
Environmental Services

a heidemij company

August 21, 1996

Mr. Robert McCollum
Division of Game and Fish
Alabama Department of Conservation
and Natural Resources
64 N. Union St., Room 584
Montgomery, AL 36130

Re: Threatened and Endangered Species Information

Dear Mr. McCollum:

The purpose of this letter is to request the most recent information concerning the occurrence of threatened and/or endangered plant and animal species, any habitats of special concern, and/or environmentally sensitive areas at or in the vicinity (within a three mile radius) of the site indicated on the enclosed figure. If such areas exist at or in the vicinity of the site, but are not in a position to be potentially impacted by the site, please indicate this in your response.

The site location can be found on the USGA Topographical Quadrangle Birmingham, North Alabama map (see attached site location map). Geraghty & Miller, Inc. is preparing an environmental study of the site and your information will be included in the report summarizing this study. A similar request has been sent to the Alabama Natural Heritage Program.

Thank you for your attention to this matter. If you have any questions, please do not hesitate to contact me at (919) 571-1662.

Sincerely,

GERAGHTY & MILLER, INC.

Rob Drake
Staff Scientist/Biologist

Enclosure

sl g:\temp\rdrake\alt&e.doc\21-Aug-96

STATE OF ALABAMA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
64 NORTH UNION STREET
POST OFFICE BOX 301456
MONTGOMERY, ALABAMA 36130-1456

JIM FOLSOM
GOVERNOR

CHARLEY GRIMSLEY
COMMISSIONER

DIVISION OF GAME AND FISH
CHARLES D. KELLEY
DIRECTOR

26 August 1996

Rob Drake
Staff Scientist/Biologist
GERAGHTY & MILLER, INC.
Cross Pointe II
2840 Plaza Place, Suite 350
Raleigh, North Carolina 27612

Dear Mr. Drake,

This letter is to inform you that there is an endangered animal species in the vicinity of the site indicated on the figure you sent me. The Federally listed Watercress Darter (*Etheostoma nuchale*) inhabits Roebuck Springs which is located east of the site location (see figure). I cannot determine from the figure you sent me whether the site location presents potential impact to the Watercress Darter or to Roebuck Springs, nor can I determine the proximity of Roebuck Springs to the site location.

Enclosed for your information are a list of Federally designated Threatened and Endangered species known to occur in Alabama and the list of State-protected animal species.

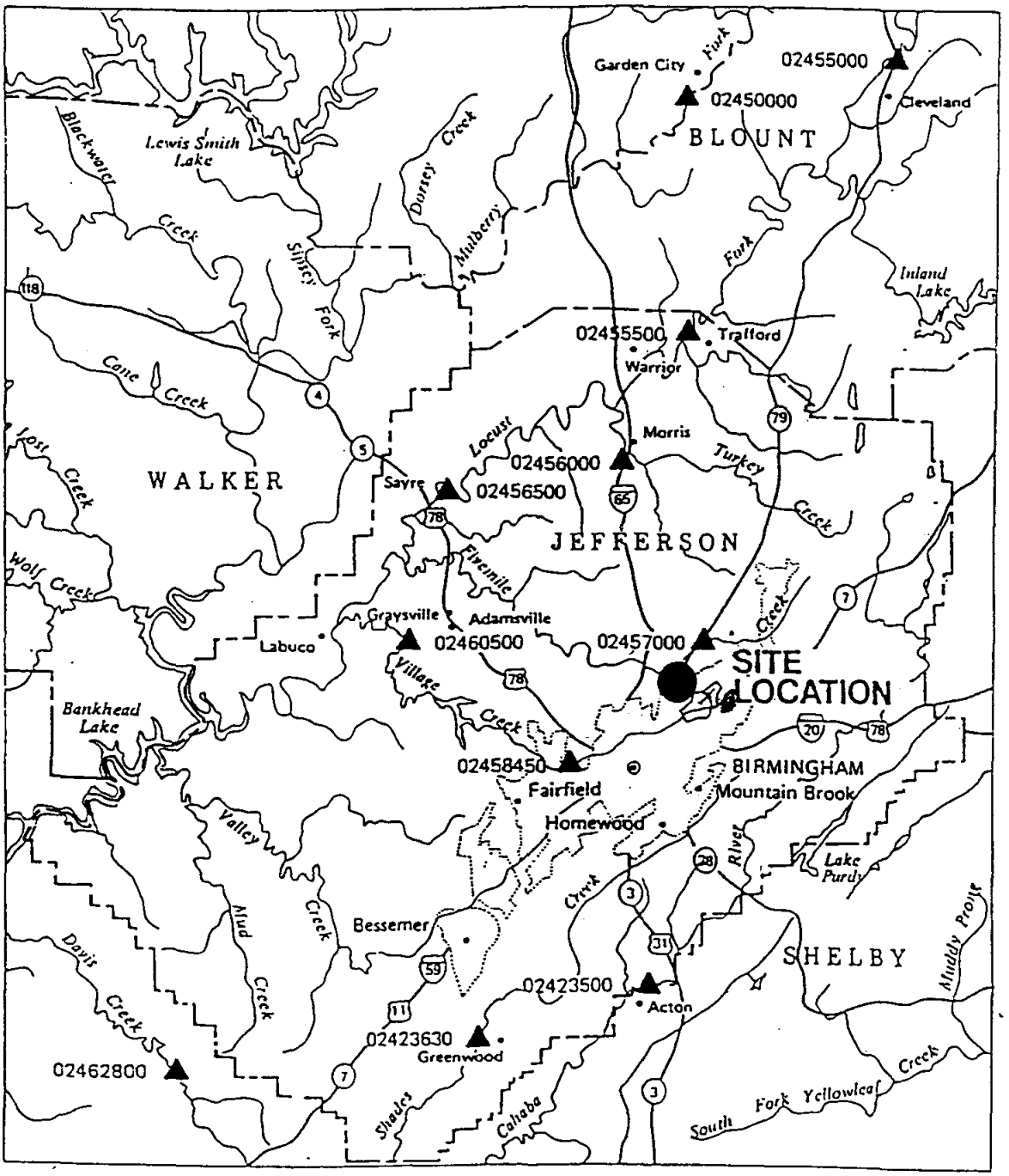
Sincerely,

Bob McCollum

Bob McCollum
Nongame Biologist

Enclosures

RECEIVED
AUG 28 1996
G & M RALEIGH



SOURCE: GEOLOGICAL SURVEY OF ALABAMA, ATLAS 16, 1980

GERAGHTY & MILLER, INC.
Environmental Services

REGIONAL SURFACE WATER HYDROLOGY

FACILITY - WIDE INVESTIGATION

FIGURE 3-2

ALABAMA

FEDERALLY LISTED ENDANGERED/THREATENED SPECIES

amended 8/9/96

TAXA	STATUS	COMMON/SCIENTIFIC NAMES	DISTRIBUTION
Mammals (7)	(See Note on bottom of page 7)		
	E	Red wolf* (Canis rufus)	Extirpated
	E	Florida panther* (Felis concolor coryi)	Extirpated
	E	Gray bat (Myotis grisescens)	Tennessee Valley to Conecuh Co.
	E CH	Indiana bat (Myotis sodalis)	Tennessee Valley to Shelby Co.
	E CH	Alabama beach mouse (Peromyscus polionotus ammobates)	Coastal, Baldwin Co.
	E CH	Perdido Key beach mouse (Peromyscus polionotus trissyllepsis)	Coastal, Baldwin Co.
	E CH	West Indian (Florida) manatee* (Trichechus manatus)	Coastal waters
Birds (8)			
	E	Ivory-billed woodpecker* (Campephilus principalis)	Extirpated
	T	Piping plover (Charadrius melodus)	Coastal
	E CH	American peregrine falcon (Falco peregrinus anatum)	Statewide
	T	Bald eagle (Haliaeetus leucocephalus)	Statewide
	E	Wood stork (Mycteria americana)	Statewide
	E	Eskimo curlew (Numenius borealis	Possible migrant
	E	Red-cockaded woodpecker (Picoides borealis)	Statewide
	E	Bachman's warbler* (Vermivora bachmanii)	Probably Extirpated

Reptiles (9)	T	Loggerhead sea turtle (Caretta caretta)	Coastal waters
	T	Green sea turtle (Chelonia mydas)	Coastal waters
	E CH	Leatherback sea turtle (Dermochelys coriacea)	Coastal waters
	T	Eastern indigo snake (Drymarchon corais couperi)	Extreme southern counties
	E CH	Hawksbill sea turtle (Eretmochelys imbricata)	Coastal waters
	T	Gopher tortoise (Gopherus polyphemus)	Choctaw, Mobile, Washington Cos.
	E	Kemp's (Atlantic) Ridley sea turtle (Lepidochelys kempii)	Coastal waters
	E	Alabama red-bellied turtle (Pseudemys alabamensis)	Mobile, Baldwin, Monroe Cos.
	T	Flattened musk turtle (Sternotherus depressus)	Upper Black Warrior River system
Amphibians (1)	T	Red Hills salamander (Phaeognathus hubrichti)	South Central
Fish (12)	T	Gulf sturgeon (Acipenser oxyrhynchus desotoi	Coastal Delta
	T	Pygmy sculpin (Cottus pygmaeus)	Calhoun County
	T	Blue shiner (Cyprinella caerulea)	Cherokee County
	T CH	Spotfin chub (Cyprinella (=Hybopsis) monacha)	Lauderdale County Colbert County
	T CH	Slackwater darter (Etheostoma boschungi)	Madison, Lauderdale, Limestone Counties
	E	Watercress darter (Etheostoma nuchale)	Jefferson County
	E	Boulder darter (Etheostoma wapiti)	Tennessee River tributaries

	E	Cahaba shiner (Notropis cahabae)	Cahaba River
	E	Palezone shiner (Notropis spp., cf. procne)	Jackson County Paint Rock River
	T	Goldline darter (Percina aurolineata)	Cahaba River system
	T	Snail darter (Percina tanasi)	Madison County Jackson County
	E CH	Alabama cavefish (Speoplatyrhinus poulsoni)	Lauderdale County
Mollusks (37)	E	Anthony's riversnail (Anthearnia anthonyi)	Limestone Creek Limestone Co.
	E	Fanshell mussel (Cyprogenia stegaria	Tennessee River
	E	Dromedary pearly mussel (Dromus dromas)	Tennessee River
	E	Yellow-blossom pearly mussel (Epioblasma(=Dysnomia) florentina florentina)	Tennessee River
	E	Upland combshell mussel (Epioblasma metastriata)	Black Warrior, Cahaba, and Coosa River drainages
	E	Purple cat's paw pearly mussel (Epioblasma obliquata)	Tennessee River
	E	Southern acornshell mussel (Epioblasma othcaloogenesis)	Upper Coosa and Cahaba River drainages
	E	Southern combshell mussel (Epioblasma penita)	Tombigbee River, Buttahatchie River
	E	Turgid-blossom pearly mussel (Epioblasma turgidula)	Tennessee River
	E	Fine-rayed pigtoe mussel (Fusconaia cuneolus)	Paint Rock River
	E	Shiny pigtoe mussel (Fusconaia cor (=edgariana))	Paint Rock River
	E	Cracking pearly mussel (Hemistena(=Lastena) lata)	Tennessee River
	T	Fine-lined pocketbook mussel (Lampsilis altilis)	Statewide

E	Pink mucket pearly mussel (Lampsilis abrupta (=orbiculata))	Tennessee River, Paint Rock River
T	Orange-nacre mucket (Lampsilis perovalis)	Tombigbee, Black-Warrior, Alabama, Cahaba drainages
E	Alabama lamp pearly mussel (Lampsilis virescens)	Paint Rock River, Hurricane Creek
T	Alabama moccasinshell mussel (Medionidus acutissimus)	Alabama, Tombigbee, Cahaba, Coosa, Black Warrior drainages
E	Coosa moccasinshell mussel (Medionidus parvulus)	Coosa, Cahaba, and Black Warrior drainages
E	Ring pink mussel (Obovaria retusa)	Tennessee River
E	Little-wing pearly mussel (Pegias fabula)	Tennessee River
E	White wartyback pearly mussel (Plethobasus cicatricosus)	Tennessee River
E	Orange-footed pearly mussel (Plethobasus cooperianus)	Tennessee River
E	Clubshell (Pleurobema clava)	Tennessee River drainage
E	Black clubshell mussel (Pleurobema curtum)	Tombigbee River
E	Southern clubshell mussel (Pleurobema decisum)	Statewide except Mobile Delta
E	Dark pigtoe mussel (Pleurobema furvum)	Black Warrior River drainage
E	Southern pigtoe mussel (Pleurobema georgianum)	Coosa River drainage
E	Flat pigtoe mussel (Pleurobema marshalli)	Tombigbee River
E	Ovate clubshell mussel (Pleurobema perovatum)	Statewide
E	Rough pigtoe mussel (Pleurobema plenum)	Tennessee River
E	Heavy pigtoe mussel (Pleurobema taitianum)	Tennessee River

	T	Inflated heelsplitter mussel (Potamilus inflatus)	Black Warrior River to Mobile Bay
	E	Triangular kidneyshell mussel (Ptychobranchus greeni)	Black Warrior, Cahaba, and Coosa River drainages
	E	Cumberland monkeyface pearly mussel (Quadrula intermedia)	Tennessee River
	E	Stirrup shell mussel (Quadrula stapes)	Tombigbee River, Sipsey River
	E	Pale lilliput pearly mussel (Toxolasma (=Carunculina) cylindrellus)	Paint Rock River, Hurricane Creek
	E	Tulotoma snail (Tulotoma magnifica)	Coosa River System, Choccolocco Creek
Arthropods			
Crustacea (1)	E	Alabama cave shrimp (Palaemonias alabamae)	Madison County
Insecta (1)	E	American burying beetle (Nicrophorus americanus)	Statewide
Plants (18)	T	Little amphianthus (Amphianthus pusillus)	Chambers, Randolph Counties
	T	Price's potato-bean (Apios priceana)	Marshall, Autauga Cos.
	E	Rock cress (Arabis perstellata)	Bibb County
	E	Morefield's leather flower (Clematis morefieldii)	Madison Co.
	E	Alabama leather flower (Clematis socialis)	St. Clair, Cherokee Counties
	E	Leafy prairie-clover (Dalea foliosa)	Franklin, Morgan, Lawrence, Jefferson Cos.
	E	Gentian pinkroot Spigelia gentianoides	Bibb County
	T	Lyrate bladder-pod (Lesquerella lyrata)	Colbert, Franklin Cos.

E	Pondberry (Lindera melissifolia)	Wilcox County
T	Mohr's Barbara's buttons (Marshallia mohrii)	Bibb, Cullman, Cherokee, Walker, Etowah Cos.
T	American hart's-tongue fern (Asplenium scolopendrium var. americanum) (=Phyllitis japonica ssp. americanum)	Morgan, Jackson Cos.
E	Harperella (Ptilimnium nodosum	Cherokee, DeKalb Cos.
T	Kral's water-plantain (Sagittaria secundifolia)	Cherokee, DeKalb Cos.
E	Green pitcher plant (Sarracenia oreophila)	Marshall, Jackson, Etowah, DeKalb, Cherokee, Elmore, Russell Cos.
E	Alabama canebrake pitcher-plant (Sarracenia rubra alabamensis) (=S. alabamensis ssp. alabamensis)	Autuga, Chilton, Elmore Cos.
E	American chaffseed (Schwalbea americana)	
T	Alabama streak-sorus fern (Thelypteris pilosa var. alabamensis)	Winston County
E	Relict trillium (Trillium reliquum)	Henry, Lee, Bullock Cos.
E	Tennessee yellow-eyed grass (Xyris tennesseensis)	Franklin Co.

Total Animal Species: 76 (not including 5 species of whales)
Total Plant Species: 18

Status:
* = Not believed to occur in Alabama
E = endangered
T = threatened
CH = critical habitat has been designated

The American alligator is neither threatened nor endangered, but designated so because of similarity of appearance to the threatened American crocodile.

NOTE: There are 5 endangered species of whales found in coastal waters of the southeastern states. These include the finback whale (Balaenoptera physalus), the humpback whale (Megaptera novaeangliae), the right whale (Balaena glacialis), the sei whale (Balaenoptera borealis), and the sperm whale (Physeter catodon). It is possible, though unlikely, that they could appear in Alabama coastal waters.

ALABAMA

220-2-.92 Non-game Species Regulation

(1) It shall be unlawful to take, capture, kill, or attempt to take, capture or kill; possess, sell, trade for anything of monetary value, or offer to sell or trade for anything of monetary value, the following non-game wildlife species (or any parts or reproductive products of such species) without a scientific collection permit or written permit from the Commissioner, Department of Conservation and Natural Resources, which shall specifically state what the permittee may do with regard to said species:

(a) FISHES

Common Name	*Scientific Name*
• Cavefish, Alabama	Speoplatyrhinus poulsoni
• Cavefish, Southern	Typhlichthys subterraneus
• Chub, Spotfin	Cyprinella monacha
• Darter, Boulder	Etheostoma wapiti
• Darter, Coldwater	Etheostoma ditrema
• Darter, Crystal	Crystallaria asprella
• Darter, Goldline	Percina aurolineata
• Darter, Slackwater	Etheostoma boschungi
• Darter, Snail	Percina tanasi
• Darter, Tuscumbia	Etheostoma tuscumbia
• Darter, Watercress	Etheostoma nuchale
• Madtom, Frecklebelly	Noturus munitus
• Sculpin, Pygmy	Cottus pygmaeus
• Shiner, Blue	Cyprinella caerulea
• Shiner, Cahaba	Notropis cahabae
• Shiner, Palezone	Notropis albinotus

(b) AMPHIBIANS

Common Name	*Scientific Name*
• Frog, Dusky Gopher	Rana capito sevosa
• Hellbender, Eastern	Cryptobranchus alleganiensis alleganiensis
• Salamander, Flatwoods	Ambystoma cingulatum
• Salamander, Green	Aneides aeneus
• Salamander, Red Hills	Phaeognathus hubrichti
• Salamander, Seal	Desmognathus monticola (of Coastal Plain origin)
• Salamander, Tennessee Cave	Gyrinophilus palleucus
• Treefrog, Pine Barrens	Hyla andersonii

(c) REPTILES

Common Name	*Scientific Name*
• Coachwhip, Eastern	Masticophis flagellum flagellum
• Snake, Black Pine	Pituophis melanoleucus lodingi
• Snake, Eastern Indigo	Drymarchon corais couperi
• Snake, Florida Pine	Pituophis melanoleucus mugitus
• Snake, Gulf Salt Marsh	Nerodia fasciata clarki
• Snake, Southern Hognose	Heterodon simus
• Terrapin, Mississippi Diamondback	Malaclemys terrapin pileata
• Tortoise, Gopher	Gopherus polyphemus
• Turtle, Alabama Map	Graptemys pulchra
• Turtle, Alabama Red-bellied	Pseudemys alabamensis
• Turtle, Alligator Snapping	Macroclemys temminckii
• Turtle, Barbour's Map	Graptemys barbouri

(d) BIRDS

Common Name	*Scientific Name*
• Crane, Mississippi Sandhill	Grus canadensis pulla
• Dove, Common Ground	Columbina passerina
• Eagle, Bald	Haliaeetus leucocephalus
• Eagle, Golden	Aguila chrysaetos
• Egret, Reddish	Egretta rufescens
• Falcon, Peregrine	Falco peregrinus
• Hawk, Cooper's	Accipiter cooperi
• Merlin	Falco columbarius
• Osprey	Pandion haliaetus
• Oystercatcher, American	Haematopus palliatus
• Pelican, American White	Pelecanus erythrorhynchos
• Plover, Piping	Charadrius melodus
• Plover, Snowy	Charadrius alexandrinus
• Plover, Wilson's	Charadrius wilsonia
• Stork, Wood	Mycteria americana
• Tern, Gull-billed	Sterna nilotica
• Warbler, Bachman's	Vermivora bachmani
• Woodpecker, Red-cockaded	Picoides borealis
• Wren, Bewick's	Thryomanes bewickii

(e) MAMMALS

• *Common Name*	*Scientific Name*
• Bat, Gray Myotis	Myotis grisescens
• Bat, Indiana	Myotis sodalis
• Bat, Rafinesque's Big-eared	Plecotus rafinesquii
• Bat, Southeastern	Myotis austroriparius
• Gopher, Southeastern Pocket	Geomys pinetis
• Mouse, Alabama Beach	Peromyscus polionotus ammobates
• Mouse, Meadow Jumping	Zapus hudsonius
• Mouse, Perdido Key Beach	Peromyscus polionotus trissylepsis
• Weasel, Long-tailed	Mustela frenata

(f) Other State or Federally protected non-game species.

In addition any required federal permits for federally protected species must be obtained.

(2) It shall be unlawful to collect or offer for sale, sell, or trade for anything of value any box turtle (Terrapene carolina), box turtle part or reproductive product except by permit as outlined in paragraph (1).

(3) It shall be unlawful to collect, harvest, possess, offer for sale, sell or trade for anything of monetary value any common snapping turtle (Chelydra serpentina serpentina) or soft shell turtles (Apalone ferox, Apalone muticus muticus, Apalone muticus calvatus, Apalone spiniferus spiniferus, Apalone spiniferus asper) with a carapace length less than eight inches. (Except any species protected under this paragraph taken in a live trap by a pond owner or his agent while controlling nuisance animals is exempt but may not be sold or offered for sale or traded for anything of monetary value.)

(4) Informational Note: See Section 9-11-269, Code of Alabama 1975, relating to protection of the flattened musk turtle (Sternotherus minor depressus).

I, L D Durham, am responsible for filing documents in the

(Name of file) S Ross Ind Fac file. The attached document,

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was originally submitted to the Alabama Department of Environmental Management in a 3-ring binder.

For ease of filing, only the binder has changed. No material has changed in the document. No other alterations have been made to said document, and it is otherwise in its original form as submitted to the Alabama Department of Environmental Management.

L D Durham

Done this 27th of Dec, 2000

Witness: [signature]

RCRA Facility Investigation Coke Manufacturing Plant Volume II of III

Investigation Derived Waste Report (November 1996 - Revised November 2000)

ARCADIS GERAGHTY & MILLER

27 November 2000

PREPARED FOR

Sloss Industries, Inc.
Birmingham, Alabama

File Copy

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RCRA Facility Investigation
Coke Manufacturing Plant
Volume II of III

Investigation Derived Waste Report
(November 1996 - Revised November 2000)

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1-2 Quench Tower Station B, SWMUs 1B and 2B, Soil Boring Location Map

1-3 SWMU 5 Soil Boring Location Map

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1-5 SWMUs 7, 8, and 9 Soil Boring Location Map

1-6 SWMUs 10 and 11 Surficial Soil Sampling Location Map

2-1 Decision Matrix for Managing Contaminated Media.

APPENDICES

A. USEPA Guidance Number TSC-92-02, Management of Contaminated Media.

B. USEPA Risk-Based Concentrations.

C. Decontamination Pad Soil Cuttings Soil Sampling Log

GLOSSARY OF ABBREVIATIONS

BTF	Biological Treatment Facility
CFR	Code of Federal Regulations
DOT	Department of Transportation
IDW	Investigation Derived Waste
PAH	Polycyclic Aromatic Hydrocarbon
PP	Priority Pollutant
RCRA	Resource Conservation Recovery Act
RFI	RCRA Facility Investigation
RBC	Risk-Based Concentration
SVOCs	Semivolatile Organic Compounds
SWMU	Solid Waste Management Unit
TC	Toxicity Characteristic
TCLP	Toxicity Characteristic Leaching Procedure
TSD	Treatment, Storage, or Disposal
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION

Sloss Industries Corporation (Sloss) in Birmingham, Alabama conducted the Coke Manufacturing Plant portion of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) in June 1996. Investigation derived waste (IDW) was generated during the course of the investigation from the installation of 22 soil borings (Figures 1-1 through 1-7). The IDW resulted from 1) soil cuttings generated during the installation of the soil borings, 2) liquids and cuttings (from decontamination of drilling equipment) generated from decontamination of personnel and equipment at the decontamination pad, and 3) decontamination pad materials.

A decontamination pad for decontamination of drilling equipment was constructed on a bermed, concrete pad at the Sloss facility, near the Chemical Plant, using visquene. As a result of the hot, dry Birmingham summer, water used during decontamination had for the most part evaporated during the course of the Coke Manufacturing Plant investigation.

During the Coke Manufacturing Plant investigation, all IDW materials were stored in Department of Transportation (DOT) approved 55-gallon drums and initially staged adjacent to the boring generating the material. The drums were properly labeled indicating the location from which the material was generated, the type of material stored, and the date generated. At the conclusion of the field program, the IDW drums were placed on pallets and centralized to a bermed, concrete pad near the Chemical Manufacturing Plant where the decontamination pad was constructed.

The U.S. Environmental Protection Agency (USEPA) Region IV guidance document, "Management of Contaminated Media," Guidance Number TSC-92-02, dated December 28, 1992, was used as a guideline for characterization and handling of the IDW materials (Appendix A). This RFI Coke Manufacturing Plant IDW Report discusses the characterization rationale, sampling and analytical results, characterization of IDW, and recommended management practices for the IDW material.

2.0 IDW CHARACTERIZATION RATIONALE

The USEPA guidance document TSC-92-02 regarding management of contaminated media (groundwater, surface water, soils, and sediments) was used to develop the rationale for management of the IDW generated during the Coke Manufacturing Plant investigation at Sloss Industries.

2.1 USEPA POLICY

All currently available USEPA policy pertains to environmental media known to be contaminated with a listed hazardous waste. These documents collectively make up the "contained-in" policy. However, the "contained-in" policy does not address contamination from characteristic hazardous waste. Furthermore, many times there is no clear documentation that an environmental media was contaminated by either a listed or characteristic hazardous waste (as is often the case at solid waste management units). Consequently, USEPA has clarified this area as it pertains to "contaminated media" (USEPA Guidance Number TSC-92-02).

Human health and environmental risk are the basis for controlled management of IDW per USEPA Region IV guidance. By definition, a medium is "contaminated" if one or more hazardous constituents, as identified in 40 Code of Federal Regulations (CFR) Part 261 Appendix VIII, are present above levels of human health or environmental concern and above naturally occurring (background) levels (this is specifically for areas where there are naturally occurring high levels of Appendix VIII constituents). According to USEPA, contaminated environmental media should either be managed in accordance with RCRA Subtitle C requirements or "best management practices." However, if a contaminated medium is treated to concentrations at or below risk-based standards (or to naturally occurring background levels), it can be rendered "decontaminated."

2.1.1 USEPA Contaminated Media Management

Once an environmental medium is determined to be "contaminated," knowledge of how the medium became contaminated dictates how that medium must be managed. The decision matrix in Figure 2-1 was provided by USEPA to assist the user in making the correct regulatory decision for management of contaminated media. A contaminated media must ultimately be managed in one of two ways, 1) as if it were a hazardous waste, or 2) in accordance with "best management practices."

The USEPA Region IV Decision Matrix for Managing Contaminated Media, as shown in Figure 2-1, is summarized below:

1) Determine if the medium is a listed waste or contaminated by a listed waste. Both contaminated media which are themselves listed hazardous wastes (P- and U-listed wastes) and media which "contain" listed hazardous waste must be managed in accordance with Subtitle C regulations. Once a medium is decontaminated such that it no longer is a listed hazardous waste (P- and U-listed wastes) or no longer "contains" the listed hazardous waste, the Subtitle C ceases to apply.

2) Determine if the medium is contaminated by a characteristic waste. Another way in which media may become "contaminated" is through contact with a characteristic hazardous waste. If it can be validated that the medium was not contaminated by a characteristic hazardous waste, then the medium may be managed in accordance with best management practices.

3) Test for hazardous waste characteristics and determine if medium exhibits a hazardous waste characteristic. If knowledge of the originating waste stream

indicates that contamination did result from a characteristic hazardous waste, or if the source of contamination is unknown, then the medium must be tested to determine whether it exhibits a hazardous waste characteristic.

4) Compare results to risk-based levels to determine if the soil is contaminated. If contaminated, best management practices should be applied.

In summary, contaminated media which are themselves hazardous wastes (P- and U-listed wastes); media which exhibit a hazardous waste characteristic; and media which "contain" listed hazardous waste must be managed in accordance with Subtitle C regulations. Where documentation does not exist to confirm that the contamination source (or the medium of interest, in the case of P- and U-listed wastes) is a listed waste and the medium does not exhibit a hazardous waste characteristic, best management practices should be applied.

The USEPA policy indicates that decontamination is required for all Appendix VIII constituents which are above health-based limits and background, not merely the Appendix VIII constituent for which the waste was listed or which caused the medium to exhibit a hazardous characteristic.

2.1.2 USEPA Site Investigation Residues

Residues (purge water, drill cuttings, drilling fluids, etc.) from investigative efforts should be containerized from areas of suspected contamination or from areas where documentation does not exist to confirm that the contamination source was a listed hazardous waste until test results are available to determine whether the residue exhibits a hazardous waste characteristic (USEPA Guidance Number TSC-92-02). If the residue does not exhibit a hazardous waste characteristic, then Subtitle C regulations do not apply but the environmental sampling residues should still be managed in a manner that is protective of human health and the environment (i.e. best management practices).

Best management practices should be followed any time test results indicate residues contain hazardous constituents (Appendix VIII) above a health or environmental based limit (but the residues do not exhibit a hazardous characteristic and the contamination is not a listed waste). Best management practices suggest that contaminated sampling residues be treated or disposed in a unit that is operated in accordance with an environmental permit. If treatment or disposal in a permitted unit at the facility is not an available option, then the residues may be sent to an approved off-site facility for treatment or disposal. Alternatively, the residues may be stored at a secure location at the facility until the site under investigation is remediated. The residues should then be included in the remediation process.

2.2 SLOSS IDW CHARACTERIZATION RATIONALE

The IDW characterization rationale developed for the Coke Manufacturing Plant investigation follows the USEPA decision matrix provided in USEPA Guidance Number TSC-92-02. The following text describes how the matrix steps have been applied to the Sloss Coke Manufacturing Plant IDW. Sloss Industries does not have a RCRA permit and therefore does not have any RCRA units. Sloss is not a Treatment, Storage, or Disposal (TSD) facility.

1) Determine if the medium is a listed waste or contaminated by a listed waste: Sloss Industries Corporation produces six listed wastes at the Coke Manufacturing Plant, six coking wastes (K087, K141, K142, K143, K144 and K145). The coking wastes are exempt as specified in Alabama Department of Environmental Management Administrative Code Rule 335-14-2-.01(4)(a)(10) because these wastes are recycled to the coke ovens. Management practices for these wastes prohibit them from being mixed with the soil rock cuttings derived during the investigation.

2) Determine if the medium is contaminated by a characteristic waste. According to plant personnel, the environmental medium has not been contaminated by a characteristic waste. Analytical testing performed as part of Item (3) is used to validate this information.

3) Test for hazardous waste characteristics and determine if medium exhibits a hazardous waste characteristic. Soil data collected during the Coke Manufacturing Plant investigation was used to determine whether soil cuttings exhibit a hazardous waste characteristic. Results obtained from the laboratory analyses of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), the thirteen Priority Pollutant (PP) metals, barium, and cyanide were compared with the toxicity characteristics (TC) levels for hazardous waste. Although toxicity characteristic leaching procedure (TCLP) analyses were not performed on drill cuttings, the soil sampling total concentration results were divided by 20, the dilution factor for the TCLP extraction, to determine if the TCLP standards could be exceeded. In the event that a metal or compound appeared to exceed the TCLP level, the drum will be sampled and TCLP analysis will be performed for the analyte in question to confirm the results.

4) Compare results to risk-based levels to determine if the soil is contaminated. Sloss Industries Corporation proposes using USEPA Risk-Based Concentrations (RBCs) (April 1996) for soil as the risk-based levels used to determine if the soil cuttings containerized at Sloss are contaminated (Appendix B). The RBCs for industrial soil ingestion will be used to evaluate the soil data.

RBCs are chemical concentrations corresponding to fixed levels of risk (i.e., hazard quotient of 1, or a lifetime cancer risk of 10^{-6}, whichever occurs at a lower concentration) (Appendix B). The RBCs were developed by taking toxicity constants (reference doses and carcinogenic potency slopes) and combining these constants with "standard" exposure scenarios. (Appendix B). Rather than

developing site specific risk-based levels, Sloss will use the conservative assumptions inherent to RBCs provided by the USEPA to evaluate proper management practices for the Coke Manufacturing Plant IDW. The use of the RBCs appears to satisfy the USEPA Guidance TSC-92-02 criteria for determining risk-based levels for management of contaminated media. The RBCs will be used to evaluate whether the IDW will be managed on site (best management practices) or disposed of offsite (as a contaminated media).

Background soil data collected during the Facility-Wide investigation is also used to determine whether the soil is contaminated. For example, the naturally occurring concentrations of arsenic and beryllium in the soil exceed the calculated RBCs. In these cases, the cuttings are considered contaminated if concentrations exceed background levels.

3.0 CHARACTERIZATION OF IDW

The procedures utilized to sample and characterize the IDW soil cuttings are discussed in the following sections.

3.1 SAMPLING PROCEDURES

3.1.1 Soil Cuttings

IDW soil cuttings, which includes unconsolidated material such as clay, coal or other fill materials, were containerized during the Coke Manufacturing Plant investigation. The soil sampling data collected during the Coke Manufacturing Plant investigation were used to characterize the IDW soil cuttings from the soil borings installed at SWMUs 1A, 2A, 3A, 1B, 5, 6, 7, 8, 9, 10, and 11. Selected soil samples were analyzed from soil borings installed at each SWMU for total VOCs (USEPA Method 8260), SVOCs (USEPA Method 8270), the thirteen PP metals, barium and cyanide. Soil samples were collected according to procedures discussed in Section 3.0 of the RFI Coke Manufacturing Plant Report. Appendix B of Volume I of the RFI Coke Manufacturing Plant Report contains soil sampling logs for the soil samples and Volume III contains the analytical data and data validation check lists for the soil sampling. Soil sampling data are summarized in Tables 3-1 through 3-6.

One drum of soil cuttings and decontamination pad material was containerized from the decontamination pad. A soil sample was collected from this drum to characterize the IDW. To prevent volatilization during sampling of the decontamination pad soil cuttings, material from the drum was collected for VOC analysis by transferring the soil directly from the drum to the appropriate sample container using a stainless steel spoon.

For non-volatile analysis, soil cuttings were collected from the drum using a stainless steel spoon and placed in a stainless steel bowl, then thoroughly mixed using the

stainless steel spoon. The material was scraped from the sides and rolled to the middle of the bowl and initially mixed. The sample was then quartered and moved to the edges of the bowl. Each quarter was then mixed individually. The quarters were then recombined into the center of the bowl and the entire sample was mixed one final time. The sample was then spooned into wide-mouth glass jars with Teflon™ lined caps. The samples were immediately placed in a cooler with ice and transported to the laboratory.

The IDW soil cuttings from the decontamination pad were sampled and analyzed for total VOCs (USEPA Method 8240), SVOCs (USEPA Method 8270), the thirteen PP metals, barium and cyanide. The sample identification number for the decontamination pad sample is 960620-CO-IW-SL0001. Appendix C of this IDW report contains the soil sampling log for the decontamination pad IDW sampling. Analytical results and the data validation check list are included in Volume III of the RFI Coke Manufacturing Plant Report. Soil sampling data is summarized in Table 3-7.

3.1.2 Decontamination Pad Materials

Results from the IDW soil cuttings will be used to characterize the drummed visquene from the decontamination pad. These analytical results will characterize any soil cutting residue remaining on the visquene.

3.2 CHARACTERIZATION OF SOIL CUTTING IDW

Soil samples collected during the Coke Manufacturing Plant investigation and the IDW soil cutting sample from the decontamination pad were analyzed for VOCs, SVOCs, PP metals, barium and cyanide. Fourteen VOCs, 25 SVOCs, 17 of which were polycyclic aromatic hydrocarbons (PAHs), 12 metals and cyanide were detected in the IDW soil. These soil sampling results are summarized in Tables 3-1 through 3-7 and in Section 3.0 of Volume I of the RFI Coke Manufacturing Plant Report.

3.2.1 Hazardous Waste Characteristics

Based on a review of the available analytical data, IDW soil cuttings from soil borings 960613-CO-01B-SL0004, 960611-CO-05-SL0001, 960617-CO-07-SL0002, and 960614-CO-09-SL0001 containerized during the Coke Manufacturing Plant investigation may exhibit characteristics of hazardous waste because total results for lead or chromium may exceed RCRA TC Levels (Tables 3-8 and 3-9). IDW soil cuttings from these soil borings will be sampled and TCLP analysis for lead or chromium will be performed to determine whether the cuttings are hazardous.

3.2.2 Contaminated Soil Cutting IDW

Based on a review of the available analytical data, IDW soil cuttings from fourteen of the soil borings contained concentrations which exceeded USEPA industrial RBCs for soil ingestion (Tables 3-1 to 3-7).

VOC compounds detected did not exceed USEPA industrial RBCs for soil ingestion. Several SVOCs, all PAHs, exceeded USEPA industrial RBCs for soil ingestion. Concentrations of one or more PAHs including benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene detected in soil borings 960614-CO-01B-SL0005, 960611-CO-05-SL0001, 960612-CO-05-SL0002, 960612-CO-05-SL0003/960613-CO-05-SL0004, 960613-CO-05-SL0005, 960615-CO-06-SL0001, 960615-CO-07-SL0001, 960618-CO-10-SL0001, and 960614-CO-11-SL0002 exceed the industrial RBC for soil ingestion (Table 3-8).

The industrial RBCs for arsenic and beryllium were exceeded in a number of the soil borings (Tables 3-1 through 3-7). In order to evaluate this data, it was necessary to evaluate background concentrations of these constituents. This conclusion was reached based upon USEPA Guidance Number TSC-92-02 which indicates background concentrations can be used to determine if a waste is contaminated.

Site background concentrations of arsenic detected range from 1.9 to 21 mg/kg and site background concentrations of beryllium detected range from 0.51 to 2.6 mg/kg. The concentrations of arsenic and beryllium detected in the IDW soil cuttings are within the site background concentration ranges for these compounds based on background soil data collected at the site except for the beryllium concentrations detected in 960610-CO-01A-SL0004, 960613-CO-01B-SL0004, 960611-CO-05-SL0001, 960612-CO-05-SL0003/960613-CO-05-SL0004, 960615-CO-06-SL0001, 960615-CO-07-SL0001, 960614-CO-09-SL0001 and arsenic and beryllium concentrations detected in 960611-CO-03A-SL0002, 960613-CO-05-SL0005, 960617-CO-07-SL0002 which exceeded the site background concentration range (Tables 3-8). Lead exceeded the industrial RBC in 960613-CO-01B-SL0004.

Based on these results, the IDW soil cuttings from ten soil borings 96061960610-CO-01A-SL0004, 960611-CO-03A-SL0002, 960614-CO-01B-SL0005, 960612-CO-05-SL0002, 960612-CO-05-SL0003/960613-CO-05-SL0004, 960613-CO-05-SL0005, 960615-CO-06-SL0001, 960615-CO-07-SL0001, 960618-CO-10-SL0001, and 960614-CO-11-SL0002 are considered contaminated because of PAH and/or metals (beryllium, arsenic, or lead) concentrations (Tables 3-8 and 3-9). Although 960613-CO-01B-SL0004, 960611-CO-05-SL0001, 960617-CO-07-SL0002, and 960614-CO-09-SL0001 contained concentrations of PAHs or metals which exceeded industrial RBCs or background soil concentrations, soil cuttings from these soil borings have been classified as hazardous because concentrations of metals detected may exceed RCRA TC levels. The IDW soil cuttings from the decontamination pad did not contain concentrations which exceeded USEPA RBCs.

3.3 DECONTAMINATION PAD MATERIALS

3.3.1 Hazardous Waste Characteristics

Since none of the IDW soil cuttings from the decontamination pad exhibited characteristics of hazardous waste (Section 3.2.1), it follows that the decontamination pad materials do not exhibit characteristics of hazardous waste.

3.3.2 Contaminated Materials

Based on a review of the analytical data for the IDW soil cuttings collected from the decontamination pad, it follows that the decontamination pad materials are not contaminated.

4.0 PROPOSED WASTE MANAGEMENT PRACTICES

4.1 SOIL CUTTINGS IDW

Characterization of IDW soil cuttings indicated that IDW soil cuttings from four of the soil borings, 960613-CO-01B-SL0004, 960611-CO-05-SL0001, 960617-CO-07-SL0002, and 960614-CO-09-SL0001, may have characteristics of hazardous waste (Tables 3-8 and 3-9). The IDW soil cuttings will be sampled and TCLP analysis performed for the analyte in question. If TCLP results indicate the IDW soil cuttings are hazardous, the proposed management practice for handling and disposal is to handle the drums as hazardous waste and dispose of the material accordingly (Table 3-9). If TCLP results indicate that the IDW soil is not hazardous, the soil will be disposed of as contaminated media. The TCLP results and recommendations for disposal will be provided under separate cover.

IDW soil cuttings containerized from ten soil borings contained concentrations of SVOCs (benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene) or lead which exceeded industrial RBCs and/or contained beryllium and arsenic concentrations above site background (Tables 3-8 and 3-9). Because the soil cuttings from these soil borings contained concentrations of compounds which exceeded the RBCs or background concentrations, the soil cuttings have been characterized as contaminated media.

The proposed best management practice for handling and disposal of the IDW soil cuttings characterized as contaminated from soil borings 960610-CO-01A-SL0004, 960611-CO-03A-SL0002, 960614-CO-01B-SL0005, 960612-CO-05-SL0002, 960612-CO-05-SL0003/960613-CO-05-SL0004, 960613-CO-05-SL0005, 960615-CO-06-SL0001, 960615-CO-07-SL0001, 960618-CO-10-SL0001, and 960614-CO-11-SL0002 is to handle the ten drums containing cuttings as if they were a hazardous waste and dispose of the material accordingly (Table 3-9). Although this material is non-hazardous, solid

waste landfills may hesitate to accept the IDW soil cuttings because they are contaminated.

The IDW soil cuttings from the remaining seven soil borings and decontamination pad do not contain concentrations of compounds which exceed USEPA industrial RBCs (Tables 3-8 and 3-9). The proposed best management practice for handling the IDW soil cuttings is to place the material at the on site land disposal area, SWMU 38, Landfill. After removing the IDW soil cuttings, the drums will be triple rinsed, crushed, and placed in the metal scrap pile for recycling at the U.S. Pipe North Birmingham facility. Rinse waters will be collected/directed to the Biological Treatment Facility (BTF).

4.2 DECONTAMINATION PAD MATERIALS

Decontamination pad materials can be disposed of as a solid waste since the materials are non-hazardous and not contaminated. The decontamination pad materials will be placed in a dumpster at the Sloss Facility and disposed of by the site trash collector.

5.0 REFERENCES

U. S. Environmental Protection Agency, 1996. Risk-Based Concentration Table, January-June 1996. USEPA Region III, Philadelphia, Pennsylvania. April 30, 1996 Memorandum.

U. S. Environmental Protection Agency, 1992. Management of Contaminated Media. Guidance Number TSC-92-02. USEPA Region IV, Atlanta, GA. December 28,1992 Memorandum

Table 2-1
Summary of Site Background Soil Concentration Ranges
and USEPA Risk Based Concentrations
Coke Manufacturing Plant RFI
Sloss Industries Corporation

ANALYTE	BACKGROUND CONCENTRATION RANGE	USEPA RBC Ingestion Soil Residential [1/]	USEPA RBC Ingestion Soil Industrial [1/]	RCRA TC Level [5/]
Volatile Organic Compounds (ug/kg):				
1,1,2,2-Tetrachloroethane	ND	3,200	29,000	NS
2-Hexanone	ND	NS	NS	NS
Acetone	ND	7,800,000	200,000,000	NS
Benzene	ND	22,000	200,000	500
Bromomethane	ND	110,000	2,900,000	NS
Carbon tetrachloride	ND	4,900	44,000	500
Ethylbenzene	ND	7,800,000	200,000,000	NS
Ethyl methacrylate	ND	7,000,000	200,000,000	NS
m- and p-Xylenes	ND	160,000,000 [2/]	1,000,000,000 [2/]	NS
Methylene chloride	1.4-6.0	85,000	760,000	NS
o-Xylene	ND	160,000,000	1,000,000,000	NS
Styrene	ND	16,000,000	400,000,000	NS
Trichloroethene	2.6-82	58,000	520,000	500
Toluene	1.0-7.4	16,000,000	400,000,000	NS
Semivolatile Organic Compounds (ug/kg):				
1,2,4-Trichlorobenzene	ND	780,000	20,000,000	NS
* 2-Methylnaphthalene	ND	NS	NS	NS
2-Methylphenol (o-Cresol)	ND	3,900,000	100,000,000	200,000
3-Methylphenol (m-Cresol)	ND	3,900,000	100,000,000	200,000
4-Methylphenol (p-Cresol)	ND	390,000	10,000,000	200,000
* Acenaphthene	ND	4,700,000	100,000,000	NS
* Acenaphthylene	ND	NS	NS	NS
* Anthracene	ND	23,000,000	600,000,000	NS
* Benzo(a)anthracene	33	880	7,800	NS
* Benzo(a)pyrene	40	88	780	NS
* Benzo (b) fluoranthene	65-66	880	7,800	NS
* Benzo (k) fluoranthene	ND	8,800	78,000	NS
* Benzo (g,h,i) perylene	ND	NS	NS	NS
* Chrysene	43	88,000	780,000	NS
Dibenzofuran	ND	310,000	8,200,000	NS
* Dibenzo (a,h) anthracene	ND	88	780	NS
Di-n-butylphthalate	72	7,800,000	200,000,000	NS
2,4-Dimethylphenol	ND	1,600,000	41,000,000	NS
* Fluorene	ND	3,100,000	82,000,000	NS
* Fluoranthene	58-61	3,100,000	82,000,000	NS
* Indeno(1,2,3-cd)pyrene	ND	880	7,800	NS
* Naphthalene	44-48	3,100,000	82,000,000	NS
Phenol	ND	47,000,000	1,000,000,000	NS
* Phenanthrene	30	NS	NS	NS
* Pyrene	52	2,300,000	61,000,000	NS

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Table 2-1
Summary of Site Background Soil Concentration Ranges
and USEPA Risk Based Concentrations
Coke Manufacturing Plant RFI
Sloss Industries Corporation

ANALYTE	BACKGROUND CONCENTRATION RANGE	USEPA RBC Ingestion Soil Residential [1/]	USEPA RBC Ingestion Soil Industrial [1/]	RCRA TC Level [5/]
Metals (mg/kg)				
Silver	ND	390	10,000	5
Arsenic	1.9-21	0.43[3/]	3.8[3/]	5
Barium	14-200	5500	100,000	100
Beryllium	0.44-2.6	0.15	1.3	NS
Cadmium	ND	39	1,000	1
Chromium	8.6-46	390[4/]	10,000	5
Copper	5.0-32	3100	82,000	NS
Mercury	0.034-0.15	23	610	0.2
Nickel	4.7-47	1600	41,000	NS
Lead	5.0-23	400	NS	5
Antimony	ND	31	820	NS
Zinc	8.6-71	23000	600,000	NS
Cyanide, Total (mg/kg)	ND	1600	41,000	NS

ND - Not Detected. This constituent was not detected in site background soil samples.
NS - No Standard.
1/ Source: USEPA Region III Risk-Based Concentrations (RBCs), April 30, 1996.
2/ RBC for m-xylene.
3/ RBC for arsenic as a carcinogen RBC.
4/ Chromium VI RBC.
5/ TC level concentrations are ug/L for VOCs and SVOCs and mg/L for metals.
* Polycyclic aromatic hydrocarbon.

TABLE 3-1
Summary of Constituents Detected in Subsurface Soil Samples Collected at
Quench Tower A (SWMUs 1A, 2A, and 3A)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL INDUSTRIAL [1]	RCRA TC LEVEL [4]	SWMU 1A		SWMU 2A	
			960610-CO-01A-SL0004 (2-4)	960611-CO-01A-SL0005 (2-4)	960610-CO-02A-SL0001 (2-4)	960610-CO-02A-SL0001 (16-18)
LAB ID			960006353	960006494	960006350	960006351
SAMPLE DATE			06/10/96	06/11/96	06/10/96	06/10/96
Volatile Organic Compounds (ug/kg):						
Acetone	200,000,000	NS	980 J	360 J	1200 J	92 U
Methylene chloride	760,000	NS	55 J	10 J	14 J	17
Semivolatile Organic Compounds (ug/kg):						
2-Methylphenol (o-Cresol)	100,000,000	200,000	<410	<370	1400	<400
3-Methylphenol (m-Cresol)	100,000,000	200,000	<410	<370	1700	<400
4-Methylphenol (p-Cresol)	10,000,000	200,000	<410	<370	1700	<400
Benzo(a)anthracene	7,800	NS	<410	1400	6700	<400
Benzo (k) fluoranthene	78,000	NS	<410	<370	<940	<400
Chrysene	780,000	NS	<410	1200	5300	<400
Fluoranthene	82,000,000	NS	480	2200	4800	<400
Phenol	1,000,000,000	NS	<410	<370	2700	<400
Phenanthrene	NS	NS	<410	1100	1400	<400
Pyrene	61,000,000	NS	660	4300	10000	<400
Metals (mg/kg):						
Arsenic	3.8 [2]	5	19	12	14	13
Barium	100,000	100	250	18	93	200
Beryllium	1.3	NS	2.8	1.8	1.6	1.6
Cadmium	1000	1	3.2	10	1.4	<0.60
Chromium	10,000	5	14	<5.6	14	30
Copper	82000	NS	31	54	280	3.5
Mercury	610	0.2	<0.041	1.1	0.17	<0.040
Nickel	41000	NS	8.5	6	12	11
Lead	400 [3]	5	39	41	90	40
Zinc	600,000	NS	78 U	130	63 U	36 U
Cyanide, Total (mg/kg)	41000	NS	7.8	2	27	<1.2
Percent Solids	--	--	80	90	70	83

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TABLE 3-1
Summary of Constituents Detected in Subsurface Soil Samples Collected at
Quench Tower A (SWMUs 1A, 2A, and 3A)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL INDUSTRIAL [1]	RCRA TC LEVEL [4]	SWMU 2A	SWMU 3A		
			960610-CO-02A-SL0002 (2-4)	960611-CO-03A-SL0001 (6-8)	960611-CO-03A-SL0002 (8-10)	960611-CO-03A-SL9002
LAB ID			960006352	960006495	960006496	960006497
SAMPLE DATE			06/10/96	06/11/96	06/11/96	06/11/96
Volatile Organic Compounds (ug/kg):						
Acetone	200,000,000	NS	<67 UJ	380 J	690	790 J
Methylene chloride	760,000	NS	43 J	10 J	<6.5	13 J
Semivolatile Organic Compounds (ug/kg):						
2-Methylphenol (o-Cresol)	100,000,000	200,000	850	<410	<430	<430
3-Methylphenol (m-Cresol)	100,000,000	200,000	1200	<410	<430	<430
4-Methylphenol (p-Cresol)	10,000,000	200,000	1200	<410	<430	<430
Benzo(a)anthracene	7,800	NS	3900	<410	<430	<430
Benzo (k) fluoranthene	78,000	NS	4000	<410	<430	<430
Chrysene	780,000	NS	2900	<410	<430	<430
Fluoranthene	82,000,000	NS	5500	<410	<430	<430
Phenol	1,000,000,000	NS	1300	<410	<430	<430
Phenanthrene	NS	NS	<440	<410	<430	<430
Pyrene	61,000,000	NS	7100	<410	<430	<430
Metals (mg/kg):						
Arsenic	3.8 [2]	5	24	10	9	96
Barium	100,000	100	110	45	65	42
Beryllium	1.3	NS	1.7	1.8	3.4	1
Cadmium	1000	1	0.80	<6.2	<6.5	<6.5
Chromium	10,000	5	7.1	36	23	79
Copper	82000	NS	52	9.8	12	6.9
Mercury	610	0.2	<0.044	0.99	<0.19	0.99
Nickel	41000	NS	31	10	21	9
Lead	400 [3]	5	29	24	26	17
Zinc	600,000	NS	950	52	44	32
Cyanide, Total (mg/kg)	41000	NS	13	18	<1.3	2
Percent Solids	--	--	75	80	77	77

J Positive results have been classified as qualitative during data validation.
UJ Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
U Classified as nondetected.
1/ Source: USEPA Region III, Risk-Based Concentrations (RBCs), April 30, 1996.
2/ RBC for arsenic as carcinogen.
3/ Residential RBC.
4/ TC level concentrations are in ug/L for VOCs and SVOCs and mg/L for metals.
NS No standard.
Concentration Exceeds USEPA Industrial RBC.
Note: Sample 960611-CO-03A-SL9002 is the duplicate for 960611-CO-03A-SL0002(8-10).

TABLE 3-2
Summary of Constituents Detected in Subsurface Soil Samples
Collected at Quench Tower B (SWMUs 1B and 2B)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL INDUSTRIAL [1/]	RCRA TC LEVEL [4/]	SWMU 1B 960613-CO-01B-SL0004 (4-6)	960613-CO-01B-SL0004 (8-10)	960613-CO-01B-SL0004 (12-14)	960614-CO-01B SL0005 (6-8)
LAB ID			960006593	960006592	960006594	960006755
SAMPLE DATE			06/13/96	06/13/96	06/13/96	06/14/96
Volatile Organic Compounds (ug/kg):						
2-Hexanone	NS	NS	<68	<62	<68	<62
Acetone	200,000,000	NS	<68	<62	120	<62
Methylene chloride	760,000	NS	<6.8	<6.2	<6.8	<6.2
Semivolatile Organic Compounds (ug/L):						
2-Methylnaphthalene	NS	NS	<450	<410	<440	<8100
Acenaphthene	100,000,000	NS	<450	<410	<440	<8100
Acenaphthylene	NS	NS	<450	<410	<440	<8100
Anthracene	600,000,000	NS	<450	<410	<440	12000
Benzo(a)anthracene	7,800	NS	<450	<410	<440	16000
Benzo(a)pyrene	780	NS	<450	<410	<440	14000
Benzo (b) fluoranthene	7,800	NS	<450	<410	<440	17000
Benzo (k) fluoranthene	78,000	NS	<450	<410	<440	<8100
Benzo (g,h,i) perylene	NS	NS	<450	<410	<440	<8100
Chrysene	780,000	NS	<450	<410	<440	12000
Dibenzofuran	8,200,000	NS	<450	<410	<440	11000
Fluorene	82,000,000	NS	<450	<410	<440	20000
Fluoranthene	82,000	NS	<450	<410	<440	52000
Indeno(1,2,3-cd)pyrene	7,800	NS	<450	<410	<440	<8100
Naphthalene	82,000,000	NS	<450	<410	<440	30000
Phenanthrene	NS	NS	<450	<410	<440	70000
Pyrene	61,000,000	NS	<450	<410	<440	54000

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TABLE 3-2
Summary of Constituents Detected in Subsurface Soil Samples
Collected at Quench Tower B (SWMUs 1B and 2B)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL INDUSTRIAL [1]	RCRA TC LEVEL [4]	SWMU 1B 960613-CO-01B-SL0004 (4-6)	960613-CO-01B-SL0004 (8-10)	960613-CO-01B-SL0004 (12-14)	960614-CO-01B SL0005 (6-8)
LAB ID			960006593	960006592	960006594	960006755
SAMPLE DATE			06/13/96	06/13/96	06/13/96	06/14/96
Metals (mg/kg):						
Silver	10,000	5	<1.4	2	<1.4	<1.2
Arsenic	3.8 [2]	5	10	9	9	4.2
Barium	100,000	100	18	30	93	20
Beryllium	1.3	NS	1	1	3.8	0.74
Chromium	10,000 [3]	5	55	42	27	26
Copper	82,000	NS	30	32000	16	17
Mercury	610	0.2	0.23	0.19	0.50	1.8
Nickel	41,000	NS	18	44	28	8.4
Lead	400 [4]	5	8	[redacted]	20	17
Zinc	600,000	NS	51	1100	260	69
Cyanide, Total	41,000	NS	3	2	<1.4	<1.2
Percent Solids	--	--	73	80	74	81

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TABLE 3-2
Summary of Constituents Detected in Subsurface Soil Samples
Collected at Quench Tower B (SWMUs 1B and 2B)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL INDUSTRIAL [1/]	RCRA TC LEVEL [4/]	SWMU 1B 960614-CO-01B-SL9005	SWMU 1B 960614-CO-01B-SL0005 (9-11)	SWMU 2B 960619-CO-02B-SL0001 (2.5-3)	
LAB ID			960006756	960006754	960006939	
SAMPLE DATE			06/14/96	06/14/96	06/19/96	
Volatile Organic Compounds (ug/kg):						
2-Hexanone	NS	NS	<62	<64	82	J
Acetone	200,000,000	NS	<62	<64	<66	UJ
Methylene chloride	760,000	NS	<6.2	<6.4	7.1	J
Semivolatile Organic Compounds (ug/L):						
2-Methylnaphthalene	NS	NS	940	<420	<430	
Acenaphthene	100,000,000	NS	<410	<420	2100	
Acenaphthylene	NS	NS	940	<420	<430	
Anthracene	600,000,000	NS	2300	<420	<430	
Benzo(a)anthracene	7,800	NS	2500	<420	1800	
Benzo(a)pyrene	780	NS	<410	<420	1600	
Benzo (b) fluoranthene	7,800	NS	2000	<420	2400	
Benzo (k) fluoranthene	78,000	NS	420	<420	<430	
Benzo (g,h,i) perylene	NS	NS	470	<420	460	
Chrysene	780,000	NS	1600	<420	1400	
Dibenzofuran	8,200,000	NS	2000	<420	<430	
Fluorene	82,000,000	NS	3600	<420	1800	
Fluoranthene	82,000	NS	20000	<420	6000	
Indeno(1,2,3-cd)pyrene	7,800	NS	980	<420	<430	
Naphthalene	82,000,000	NS	3700	<420	1200	
Phenanthrene	NS	NS	20000	<420	<430	
Pyrene	61,000,000	NS	<4100	<420	6800	

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TABLE 3-2
Summary of Constituents Detected in Subsurface Soil Samples
Collected at Quench Tower B (SWMUs 1B and 2B)
Coke Manufacturing Plant RFI
Sloss Industries Corporation

			SWMU 1B		SWMU 2B
SAMPLE ID	USEPA RBC INGESTION SOIL INDUSTRIAL [1/]	RCRA TC LEVEL [4/]	960614-CO-01B-SL9005	960614-CO-01B-SL0005 (9-11)	960619-CO-02B-SL0001 (2.5-3)
LAB ID			960006756	960006754	960006939
SAMPLE DATE			06/14/96	06/14/96	06/19/96
Metals (mg/kg):					
Silver	10,000	5	<1.2	<1.3	<1.3
Arsenic	3.8 [2/]	5	6.2	11	8.0
Barium	100,000	100	12	18	63
Beryllium	1.3	NS	0.62	1.4	2.2
Chromium	10,000 [3/]	5	47 J	41 J	39
Copper	82,000	NS	4.7	6.0	13
Mercury	610	0.2	1.1	1.8	0.33
Nickel	41,000	NS	5.9	15	21
Lead	400 [4/]	5	<6.2	<6.4	22
Zinc	600,000	NS	25	31	63
Cyanide, Total	41,000	NS	<1.2	<1.3	14
Percent Solids	--	--	81	78	76

1/ Source: EPA Region III Risk-Based Concentrations (RBCs), April 30, 1996.
2/ RBC for arsenic as a carcinogen.
3/ RBC for chromium VI.
4/ Residential RBC.
5/ TC level concentrations are ug/L for VOCs and SVOCs and mg/L for metals.
J - Positive results have been classified as qualitative during data validation.
UJ - Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
NS - No standard.
Concentration exceeds Industrial RBC.
Concentration may exceed RCRA TC level.
Note: Sample 960614-CO-01B-SL9005 is the duplicate of sample 960614-CO-01B-SL0005(6-8).

TABLE 3-3
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMU 5
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID LABSID SMPLDATE	USEPA RBC INGESTION INDUSTRIAL[1/]	RCRA TC LEVEL [5/]	960611-CO-05-SL0001 (1-3) 960006498 06/11/96	960611-CO-05-SL0001 (9-11) 960006499 06/12/96	960611-CO-05-SL0001 (11-13) 960006500 06/12/96	960612-CO-05-SL0002 (1-3) 960006501 06/12/96
Volatile Organic Comounds (ug/kg):						
1,1,2,2-Tetrachloroethane	29,000	NS	4.0 U	3.0 U	3.2	2.2 U
Acetone	200,000,000	NS	3200 J	86	<61	<61
Benzene	200,000	500	<6.0 UJ	<6.2	<6.1	<6.1
Carbon tetrachloride	44,000	500	<6.0 UJ	<6.2	<6.1	<6.1
Ethylbenzene	200,000,000	NS	<6.0 UJ	<6.2	<6.1	<6.1
m- and p-Xylenes	1,000,000,000[2/]	NS	<6.0 UJ	<6.2	<6.1	<6.1
Methylene chloride	760,000	NS	<6.0 UJ	<6.2	6	13
o-Xylene	1,000,000,000	NS	<6.0 UJ	<6.2	<6.1	<6.1
Trichloroethene	520,000	500	<6.0 UJ	<6.2	<6.1	<6.1
Toluene	400,000,000	NS	<6.0 UJ	<6.2	<6.1	<6.1
Semivolatile Organic Compounds (ug/kg):						
2-Methylnaphthalene	NS	NS	<400	<410	<400	2400
Acenaphthene	100,000,000	NS	<400	<410	<400	4500
Acenaphthylene	NS	NS	<400	<410	<400	<400
Anthracene	600,000,000	NS	1200	<410	<400	6700
Benzo(a)anthracene	7,800	NS	4800	<410	<400	7100
Benzo(a)pyrene	780	NS	5100	<410	<400	5200
Benzo (b) fluoranthene	7,800	NS	5100	<410	<400	5200
Benzo (k) fluoranthene	78,000	NS	1100	<410	<400	1100
Benzo (g,h,i) perylene	NS	NS	660	<410	<400	3200
Chrysene	780,000	NS	4000	<410	<400	5600
Dibenzofuran	8,200,000	NS	<400	<410	<400	4900
Dibenzo (a,h) anthracene	780	NS	<400	<410	<400	<400
Fluorene	82,000,000	NS	<400	<410	<400	7700
Fluoranthene	82,000,000	NS	32000	<410	630	29000
Indeno(1,2,3-cd)pyrene	7,800	NS	1700	<410	<400	<400
Naphthalene	82,000,000	NS	<400	<410	<400	<20000
Phenanthrene	NS	NS	5400	<410	<400	27000
Pyrene	61,000,000	NS	22000	<410	<400	29000

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TABLE 3-3
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMU 5
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION INDUSTRIAL[1/]	RCRA TC LEVEL[5/]	960611-CO-05-SL0001 (1-3)	960611-CO-05-SL0001 (9-11)	960611-CO-05-SL0001 (11-13)	960612-CO-05-SL0002 (1-3)
LABSID			960006498	960006499	960006500	960006501
SMPLDATE			06/11/96	06/12/96	06/12/96	06/12/96
Metals (mg/kg):						
Arsenic	3.8[3/]	5	20	8	7	7
Barium	100,000	100	230	200	150	120
Beryllium	1.3	NS	3.4	3.4	2.6	2.6
Cadmium	1000	1	7	<6.2	<6.1	<6.1
Chromium	10000[4/]	5	25	34	39	49
Copper	82,000	NS	70	18	13	7.0
Mercury	610	0.2	0.58	0.72	0.34	0.52
Nickel	41,000	NS	10	25	18	8
Lead	400[6/]	5	220	30	150	39
Antimony	820	NS	8 J	<6.2 R	<6.1 R	<6.1 R
Zinc	600,000	NS	1300	58	55	44
Cyanide, Total (mg/kg):	41,000	NS	38	<1.2	<1.2	<1.2
Percent Solids	--	--	83	80	82	82

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TABLE 3-3
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMU 5
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID LABSID SMPLDATE	USEPA RBC INGESTION INDUSTRIAL[1/]	RCRA TC LEVEL [5/]	960612-CO-05-SL0002 (11-13) 960006502 06/12/96	960612-CO-05-SL0002 (15-17) 960006503 06/12/96	960613-CO-05-SL0004 (1-3) 960006590 06/13/96	960613-CO-05-SL0004 (7-9) 960006587 06/13/96
Volatile Organic Comounds (ug/kg):						
1,1,2,2-Tetrachloroethane	29,000	NS	3.4 U	2.1 U	<0.58	<0.64
Acetone	200,000,000	NS	110 J	<66 UJ	<58	<64
Benzene	200,000	500	<6.2 UJ	<6.6 UJ	<5.8	<6.4
Carbon tetrachloride	44,000	500	<6.2 UJ	<6.6 UJ	<5.8	9
Ethylbenzene	200,000,000	NS	9 J	<6.6 UJ	57 J	23
m- and p-Xylenes	1,000,000,000[2/]	NS	<6.2 UJ	<6.6 UJ	370 J	150
Methylene chloride	760,000	NS	16 J	<6.6 UJ	<5.8	10
o-Xylene	1,000,000,000	NS	8 J	<6.6 UJ	350 J	100
Trichloroethene	520,000	500	<6.2 UJ	<6.6 UJ	<5.8	14
Toluene	400,000,000	NS	<6.2 UJ	<6.6 UJ	16 J	<6.4
Semivolatile Organic Compounds (ug/kg):						
2-Methylnaphthalene	NS	NS	4800	780	<19000	<420
Acenaphthene	100,000,000	NS	440	<430	<19000	<420
Acenaphthylene	NS	NS	<410	<430	<19000	<420
Anthracene	600,000,000	NS	1200	660	<19000	450
Benzo(a)anthracene	7,800	NS	1500	1700	<19000	830
Benzo(a)pyrene	780	NS	1200	2400	<19000	1300
Benzo (b) fluoranthene	7,800	NS	1200	2200	<19000	700
Benzo (k) fluoranthene	78,000	NS	<410	470	<19000	<420
Benzo (g,h,i) perylene	NS	NS	<410	<430	<19000	<420
Chrysene	780,000	NS	1000	1400	<19000	670
Dibenzofuran	8,200,000	NS	2200	550	<19000	<420
Dibenzo (a,h) anthracene	780	NS	<410	<430	<19000	<420
Fluorene	82,000,000	NS	2600	750	<19000	460
Fluoranthene	82,000,000	NS	5500	5500	<19000	1400
Indeno(1,2,3-cd)pyrene	7,800	NS	<410	4100	<19000	<420
Naphthalene	82,000,000	NS	26000	2000	<19000	2000
Phenanthrene	NS	NS	9400	3200	<19000	2800
Pyrene	61,000,000	NS	7400	4200	<19000	1400

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TABLE 3-3
Summary of Constituents Detected in Subsurface Soil Samples Collected at SWMU 5
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID LABSID SMPLDATE	USEPA RBC INGESTION INDUSTRIAL[1/]	RCRA TC LEVEL[5/]	960612-CO-05-SL0002 (11-13) 960006502 06/12/96	960612-CO-05-SL0002 (15-17) 960006503 06/12/96	960613-CO-05-SL0004 (1-3) 960006590 06/13/96	960613-CO-05-SL0004 (7-9) 960006587 06/13/96
Metals (mg/kg):						
Arsenic	3.8[3/]	5	8	3	7	9
Barium	100,000	100	120	93	130	140
Beryllium	1.3	NS	1	1.6	2.0	4.2
Cadmium	1000	1	<6.2	<6.6	<5.8	<6.4
Chromium	10000[4/]	5	8	16	28	59
Copper	82,000	NS	<3.1	6.8	<2.9	14
Mercury	610	0.2	0.10	0.14	0.15	0.18
Nickel	41,000	NS	8	9	<4.6	19
Lead	400[6/]	5	25	10	12	20
Antimony	820	NS	<6.2 R	<6.6 R	<5.8	59
Zinc	600,000	NS	24	45	26	62
Cyanide, Total (mg/kg):	41,000	NS	<1.2	<1.3	7	<1.3
Percent Solids	--	--	80	76	86	78

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TABLE 3-3
Summary of Constituents Detected in Subsurface
Soil Samples Collected at SWMU 5
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID LABSID SMPLDATE	USEPA RBC INGESTION INDUSTRIAL[1/]	RCRA TC LEVEL[5/]	960613-CO-05-SL0004 (9-11) 960006588 06/13/96	960613-CO-05-SL0005 (1-3) 960006589 06/13/96	960613-CO-05-SL0005 (5-7) 960006591 06/13/96	960613-CO-05-SL9005 960006595 06/13/96
Volatile Organic Comounds (ug/kg):						
1,1,2,2-Tetrachloroethane	29,000	NS	2.1 U	<0.60 UJ	2.1 U	<0.65
Acetone	200,000,000	NS	<70	120 J	<66	77
Benzene	200,000	500	<7.0	75 J	42	<6.5
Carbon tetrachloride	44,000	500	<7.0	<6.0 UJ	<6.6	<6.5
Ethylbenzene	200,000,000	NS	<7.0	430 J	18	<6.5
m- and p-Xylenes	1,000,000,000[2/]	NS	<7.0	110 J	10	<6.5
Methylene chloride	760,000	NS	8	8.2 J	<6.6	<6.5
o-Xylene	1,000,000,000	NS	<7.0	370 J	16	<6.5
Trichloroethene	520,000	500	<7.0	<6.0 UJ	<6.6	<6.5
Toluene	400,000,000	NS	<7.0	<6.0 UJ	<6.6	<6.5
Semivolatile Organic Compounds (ug/kg):						
2-Methylnaphthalene	NS	NS	<460 UJ	3200	7400	<21000 R
Acenaphthene	100,000,000	NS	<460 UJ	1600	7100	<21000 R
Acenaphthylene	NS	NS	<460 UJ	<400	450	<21000 R
Anthracene	600,000,000	NS	<460 UJ	3700	<22000	<21000 R
Benzo(a)anthracene	7,800	NS	<460 UJ	5100	<22000	<21000 R
Benzo(a)pyrene	780	NS	<460 UJ	<400	7800	<21000 R
Benzo (b) fluoranthene	7,800	NS	<460 UJ	4600	6800	<21000 R
Benzo (k) fluoranthene	78,000	NS	<460 UJ	590	1600	<21000 R
Benzo (g,h,i) perylene	NS	NS	<460 UJ	470	3300	<21000 R
Chrysene	780,000	NS	<460 UJ	3700	7600	<21000 R
Dibenzofuran	8,200,000	NS	<460 UJ	3100	7200	<21000 R
Dibenzo (a,h) anthracene	780	NS	<460 UJ	430	<430	<21000 R
Fluorene	82,000,000	NS	<460 UJ	5800	22000	<21000 R
Fluoranthene	82,000,000	NS	<460 UJ	34000	82000	78000 J
Indeno(1,2,3-cd)pyrene	7,800	NS	<460 UJ	3000	7900	<21000 R
Naphthalene	82,000,000	NS	<460 UJ	23000	51000	49000 J
Phenanthrene	NS	NS	<460 UJ	22000	58000	53000 J
Pyrene	61,000,000	NS	<460 UJ	<20000	22000	<21000 R

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TABLE 3-3
Summary of Constituents Detected in Subsurface Soil Samples Collected at SWMU 5
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID LABSID SMPLDATE	USEPA RBC INGESTION INDUSTRIAL[1/]	RCRA TC LEVEL[5/]	960613-CO-05-SL0004 (9-11) 960006588 06/13/96	960613-CO-05-SL0005 (1-3) 960006589 06/13/96	960613-CO-05-SL0005 (5-7) 960006591 06/13/96	960613-CO-05-SL9005 960006595 06/13/96
Metals (mg/kg):						
Arsenic	3.8[3/]	5	8	10	8	22
Barium	100,000	100	79	73	88	82
Beryllium	1.3	NS	2.7	2.0	3.6	2.7
Cadmium	1000	1	<7.0	<6.0	<6.6	<6.5
Chromium	10000[4/]	5	10	17	30	95
Copper	82,000	NS	18	10	3.8	5.3
Mercury	610	0.2	0.21	0.12	0.14	0.62
Nickel	41,000	NS	24	7	10	19
Lead	400[6/]	5	10	77	10	32
Antimony	820	NS	<7.0	<6.0	<6.6	<6.5
Zinc	600,000	NS	59	42	25	62
Cyanide, Total (mg/kg):	41,000	NS	<1.4	1	<1.3	1
Percent Solids	--	--	71	83	76	77

1/ Source: EPA Region III Risk-Based Concentrations (RBCs), April 30, 1996.
2/ RBC for m-xylene
3/ RBC for arsenic as a carcinogen.
4/ RBC for chromium VI.
5/ TC level concentrations are ug/L for VOCs and SVOCs, and mg/L for metals.
6/ Residential RBC
J - Positive results have been classified as qualitative during data validation.
R - Data classified as unusable.
U - Classified as nondetected.
UJ - Analyte was not detected at or above the indicated concentration. and has been classified as qualitative.
NS - No standard.
Concentration exceeds Industrial RBC.
Concentration may exceed RCRA TC level.
Note: Sample 960613-CO-05-SL9005 is the duplicate of 960613-CO-05-SL0005(5-7).

TABLE 3-4
Summary of Constituents Detected
in Soil Samples Collected at SWMU 6
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL INDUSTRIAL[1/]	RCRA TC LEVEL[6/]	960615-CO-06-SL0001 (0-1)	960615-CO-06-SL0001 (1-2)	960615-CO-06-SL9001	960615-CO-06-SL0001 (6-8)	960615-CO-06-SL0001 (12-14)
LAB ID			960006798	960006797	960006801	960006796	960006795
SAMPLE DATE			06/15/96	06/15/96	06/15/96	06/15/96	06/15/96
Volatile Organic Compounds (ug/kg):							
1,1,2,2-Tetrachloroethane	29,000	NS	<0.62 UJ	3.0	2.3 J	2.2	4.0
Acetone	200,000,000	NS	<62 UJ	<63	71 J	<62	<64
m- and p-Xylenes	1,000,000,000[2/]	NS	6.7 J	<6.3	<6.3	<6.2	<6.4
Semivolatile Organic Compounds (ug/kg):							
Benzo (b) fluoranthene	7,800	NS	6500 J	<420	<420	<410	<420
Chrysene	780,000	NS	4400 J	<420	<420	<410	<420
Fluoranthene	82,000,000	NS	12000 J	<420	<420	<410	<420
Naphthalene	82,000,000	NS	4300 J	<420	<420	<410	<420
Pyrene	61,000,000	NS	10000 J	<420	<420	<410	<420
Metals (mg/kg):							
Arsenic	3.8[3/]	5	15	10	7.8	7.8	13
Barium	100,000	100	78	28	91	120	41
Beryllium	1.3	NS	0.74	0.89	1.4	0.86	3.2
Chromium	10,000[4/]	NS	9.5 J	54 J	86	26 J	12 J
Copper	82,000	NS	15	7.1	9.9	5.2	17
Mercury	610	0.2	0.32	0.28	0.26	0.30	0.26
Nickel	41,000	NS	15	12	15	7.6	33
Lead	400[5/]	5	8.4	11	62	43	13
Zinc	600,000	NS	52	48	57	31	63
Cyanide, Total (mg/kg):	41,000	NS	1.4	<1.3	<1.3	<1.2	<1.3
Percent Solids	--	--	81	79	79	81	78

1/ Source: EPA Region III Risk-Based Concentrations (RBCs), April 30, 1996.
2/ RBC for m-xylene.
3/ RBC for arsenic as a carcinogen.
4/ RBC for chromium VI.
5/ Residential RBC.
6/ TC Level concentrations are in ug/L for VOCs and SVOCs and mg/L for metals.

J - Positive results have been classified as qualitative during data validation.
UJ - Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
NS - No standard.
Note: Sample 960615-CO-06-SL9001 is the duplicate of 960615-CO-06-SL0001(1-2).

TABLE 3-5
Summary of Constituents Detected in Subsurface Soil Samples Collected at SWMUs 7, 8, and 9
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION INDUSTRIAL[1/]	RCRA TC LEVEL[6/]	SWMU 7 960615-CO-07-SL0001 (4-6)		SWMU 7 960615-CO-07-SL0001 (6-8)		SWMU 7 960617-CO-07-SL0002 (4-6)		SWMU 7 960617-CO-07-SL9002	
LAB ID			960006799		960006800		960006802		960006804	
SAMPLE DATE			06/15/96		06/15/96		06/17/96		06/17/96	
Volatile Organic Compounds (ug/kg):										
1,1,2,2-Tetrachloroethane	29,000	NS	5.1	J	<6.8		4.3	J	2.1	
Acetone	200,000,000	NS	99	J	82	J	<62		100	U
Benzene	200,000	500	150	J	120	J	<6.2		<6.0	
Ethylbenzene	200,000,000	NS	240	J	49	J	<6.2		<6.0	
Ethyl methacrylate	200,000,000	NS	<6.3	UJ	<6.8		11	J	<6.0	
m- and p-Xylenes	1,000,000,000[2/]	NS	370	J	84	J	<6.2		<6.0	
Methylene chloride	760,000	NS	<6.3	UJ	<6.8		<6.2		6.7	
o-Xylene	1,000,000,000	NS	290	J	49	J	<6.2		<6.0	
Styrene	400,000,000	NS	150		<6.8		<6.2		<6.0	
Toluene	400,000,000	NS	320	J	120	J	<6.2		<6.0	
Semivolatile Organic Compounds (ug/kg):										
2-Methylnaphthalene	NS	NS	46000		920		<410		<390	
2-Methylphenol (o-Cresol)	100,000,000	200,000	<21000		<440		<410		<390	
3-Methylphenol (m-Cresol)	100,000,000	200,000	<21000		<440		<410		<390	
4-Methylphenol (p-Cresol)	10,000,000	200,000	<21000		<440		<410		<390	
Anthracene	600,000,000	NS	30000		<440		<410		<390	
Benzo(a)anthracene	7,800	NS	29000		490		<410		<390	
Benzo(a)pyrene	780	NS	24000		510		<410		<390	
Benzo (b) fluoranthene	7,800	NS	23000		590		<410		<390	
Chrysene	780,000	NS	22000		<440		<410		<390	
Dibenzofuran	8,200,000	NS	33000		530		<410		<390	
2,4-Dimethylphenol	41,000,000	NS	<21000		580		<410		<390	
Fluorene	82,000,000	NS	52000		740		<410		<390	
Fluoranthene	82,000,000	NS	94000		1900		<410		<390	
Naphthalene	82,000,000	NS	200000		6400		<410		<390	
Phenol	1,000,000,000	NS	<21000		570		<410		<390	
Phenanthrene	NS	NS	150000		2600		<410		<390	
Pyrene	61,000,000	NS	75000		730		<410		<390	

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TABLE 3-5
Summary of Constituents Detected in Subsurface Soil Samples Collected at SWMUs 7, 8, and 9
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION INDUSTRIAL[1/]	RCRA TC LEVEL[6/]	SWMU 7			
			960615-CO-07-SL0001 (4-6)	960615-CO-07-SL0001 (6-8)	960617-CO-07-SL0002 (4-6)	960617-CO-07-SL9002
LAB ID			960006799	960006800	960006802	960006804
SAMPLE DATE			06/15/96	06/15/96	06/17/96	06/17/96
Metals (mg/kg):						
Arsenic	3.8[3/]	5	9.4	5.3	36	8.3
Barium	100,000	100	150	110	100	100
Beryllium	1.3	NS	4.2	3.0	4.0	2.4
Cadmium	1000	1	7.5	<6.8	<6.2	<6.0
Chromium	10,000[4/]	5	18	30	110	64
Copper	82,000	NS	11	18	4.2	3.3
Mercury	610	0.2	0.54	0.31	0.33	3.9
Nickel	41,000	NS	12	27	22	15
Lead	400[5/]	5	20	8.8	51	32
Zinc	610,000	NS	51	93	56	40
Cyanide, Total (mg/kg):	41,000	NS	35	<1.4	<1.2	<1.2
Percent Solids	--	--	79	74	81	84

Footnotes on page 4

TABLE 3-5
Summary of Constituents Detected in Subsurface Soil Samples Collected at SWMUs 7, 8, and 9
Coke Manufacturing Plant RFI
Sloss Industries Corporation

			SWMU 7	SWMU 8	SWMU 9	
SAMPLE ID	USEPA RBC INGESTION INDUSTRIAL[1/]	RCRA TC LEVEL[6/]	960617-CO-07-SL0002 (6-8)	960617-CO-08-SL0001 (2-4)	960614-CO-09-SL0001 (4-6)	960614-CO-09-SL0001 (6-8)
LAB ID			960006803	960006805	960006749	960006751
SAMPLE DATE			06/17/96	06/17/96	06/14/96	06/14/96
Volatile Organic Compounds (ug/kg):						
1,1,2,2-Tetrachloroethane	29,000	NS	2.7	3.0	<0.63	<0.70
Acetone	200,000,000	NS	<62	<62	94	<70
Benzene	200,000	500	<6.2	28	14	<7.0
Ethylbenzene	200,000,000	NS	<6.2	<6.2	<6.3	<7.0
Ethyl methacrylate	200,000,000	NS	6.7	<6.2	<6.3	<7.0
m- and p-Xylenes	1,000,000,000[2/]	NS	<6.2	15	<6.3	<7.0
Methylene chloride	760,000	NS	<6.2	<6.2	<6.3	<7.0
o-Xylene	1,000,000,000	NS	<6.2	11	6.4	<7.0
Styrene	400,000,000	NS	<6.2	<6.2	<6.3	<7.0
Toluene	400,000,000	NS	<6.2	15	<6.3	<7.0
Semivolatile Organic Compounds (ug/kg):						
2-Methylnaphthalene	NS	NS	<410	1900	<420	<460
2-Methylphenol (o-Cresol)	100,000,000	200,000	<410	590	<420	<460
3-Methylphenol (m-Cresol)	100,000,000	200,000	<410	950	<420	<460
4-Methylphenol (p-Cresol)	10,000,000	200,000	<410	890	<420	<460
Anthracene	600,000,000	NS	<410	<410	<420	<460
Benzo(a)anthracene	7,800	NS	<410	<410	<420	<460
Benzo(a)pyrene	780	NS	<410	<410	<420	<460
Benzo (b) fluoranthene	7,800	NS	<410	<410	<420	<460
Chrysene	780,000	NS	<410	<410	<420	<460
Dibenzofuran	8,200,000	NS	<410	<410	<420	<460
2,4-Dimethylphenol	41,000,000	NS	<410	<410	<420	<460
Fluorene	82,000,000	NS	<410	<410	<420	<460
Fluoranthene	82,000,000	NS	<410	<410	1400	<460
Naphthalene	82,000,000	NS	<410	8100	1300	<460
Phenol	1,000,000,000	NS	<410	2200	<420	<460
Phenanthrene	NS	NS	<410	620	<420	<460
Pyrene	61,000,000	NS	<410	<410	420	<460

Footnotes on page 4

TABLE 3-5
Summary of Constituents Detected in Subsurface Soil Samples Collected at SWMUs 7, 8, and 9
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION INDUSTRIAL[1/]	RCRA TC LEVEL[6/]	SWMU 7 960617-CO-07-SL0002 (6-8)	SWMU 8 960617-CO-08-SL0001 (2-4)	SWMU 9 960614-CO-09-SL0001 (4-6)	SWMU 9 960614-CO-09-SL0001 (6-8)
LAB ID			960006803	960006805	960006749	960006751
SAMPLE DATE			06/17/96	06/17/96	06/14/96	06/14/96
Metals (mg/kg):						
Arsenic	3.8[3/]	5	10	16	15	8.0
Barium	100,000	100	210	79	160	240
Beryllium	1.3	NS	2.3	2.6	3.2	8.9
Cadmium	1000	1	<6.2	<6.2	<6.3	<7.0
Chromium	10,000[4/]	5	23	44	58 J	59 J
Copper	82,000	NS	3.7	6.1	6.8	20
Mercury	610	0.2	0.88	2.4	1.2	1.7
Nickel	41,000	NS	14	14	15	39
Lead	400[5/]	5	30	35	200	22
Zinc	610,000	NS	37	48	63	60
Cyanide, Total (mg/kg):	41,000	NS	<1.2	<1.2	8.1	<1.4
Percent Solids	--	--	81	80	79	71

1/ Source: EPA Region III Risk-Based Concentrations (RBCs), April 30, 1996.
2/ RBC for m-xylene.
3/ RBC for arsenic as a carcinogen.
4/ RBC for chromium VI.
5/ Residential RBC.
6/ TC Level concentrations are in ug/L for VOCs and SVOCs
J - Positive results have been classified as qualitative during data validation.
U - Classified as undetected.
UJ - Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
NS - No standard.
Note: Sample 9606017-CO-07-SL9002 is the duplicate of 960617-CO-07-SL0002(4-6).
Concentration exceeds Industrial RBC.
Concentration may exceed RCRA TC level.

TABLE 3-6
Summary of Constituents Detected in Suficial
Soil Samples Collected at SWMUs 10, 11, and 12
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL INDUSTRIAL[1/]	RCRA TC LEVEL[6/]	SWMU 10 960618-CO-10-SL0001 (2-4)		SWMU 10 960618-CO-10-SL9001		SWMU 10 960618-CO-10-SL0002 (2-4)		SWMU 11 960614-CO-11-SL0001 (2-4)	
LAB ID			960006828		960006829		960006827		960006752	
SAMPLE DATE			06/18/96		06/18/96		06/18/96		06/14/96	
Volatile Organic Compounds (ug/kg):										
Acetone	200,000,000	NS	150	J	76	J	100	U	<66	
Benzene	200,000	500	4400	J	6900	J	1600	J	29	
Ethylbenzene	200,000,000	NS	2100	J	2400	J	<1500		<6.6	
m- and p-Xylenes	1,000,000,000[2/]	NS	4100	J	4700	J	<1500		<6.6	
Methylene chloride	760,000	NS	<6.1	UJ	<6.0	UJ	7.2	J	<6.6	
o-Xylene	1,000,000,000	NS	2600	J	2900	J	<1500		7.6	
Toluene	400,000,000	NS	4400	J	5500	J	120	J	<6.6	
Semivolatile Organic Compounds (ug/kg):										
1,2,4-Trichlorobenzene	20,000,000	NS	<400		<20000		<400		<8700	
2-Methylnaphthalene	NS	NS	23000		46000		660		<8700	
Acenaphthene	100,000,000	NS	1500		<20000		<400		<8700	
Acenaphthylene	NS	NS	2900		<20000		<400		<8700	
Anthracene	600,000,000	NS	3300		<20000		<400		<8700	
Benzo(a)anthracene	7,800	NS	3000		<20000		<400		<8700	
Benzo(a)pyrene	780	NS	2700		<20000		<400		<8700	
Benzo (b) fluoranthene	7,800	NS	3400		<20000		<400		<8700	
Benzo (k) fluoranthene	78,000	NS	1000		<20000		<400		<8700	
Benzo (g,h,i) perylene	NS	NS	<400		<20000		<400		<8700	
Chrysene	780,000	NS	2700		<20000		<400		<8700	
Dibenzofuran	8,200,000	NS	4900		<20000		<400		<8700	
Dibenzo (a,h) anthracene	780	NS	400		<20000		<400		<8700	
Fluorene	82,000,000	NS	6200		19000		<400		8800	
Fluoranthene	82,000,000	NS	<20000		28000		<400		21000	
Indeno(1,2,3-cd)pyrene	7,800	NS	2400		<20000		<400		<8700	
Naphthalene	82,000,000	NS	160000		300000		2900		9900	
Phenanthrene	NS	NS	<20000		43000		<400		26000	
Pyrene	61,000,000	NS	<20000		<20000		<400		20000	

Footnotes on page 4

TABLE 3-6
Summary of Constituents Detected in Suficial
Soil Samples Collected at SWMUs 10, 11, and 12
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL INDUSTRIAL[1/]	RCRA TC LEVEL[6/]	SWMU 10 960618-CO-10-SL0001 (2-4)	SWMU 10 960618-CO-10-SL9001	SWMU 10 960618-CO-10-SL0002 (2-4)	SWMU 11 960614-CO-11-SL0001 (2-4)
LAB ID			960006828	960006829	960006827	960006752
SAMPLE DATE			06/18/96	06/18/96	06/18/96	06/14/96
Metals (mg/kg):						
Arsenic	3.8[3/]	5	7.2	8.9	6.5	10
Barium	100,000	100	80	87	110	46
Beryllium	1.3	NS	0.73	1.3	1.6	2.2
Chromium	10,000[4/]	5	29	48	44	32 J
Copper	82,000	NS	7.9	9.4	13	45
Mercury	610	0.2	0.21	0.55	0.29	1.0
Nickel	41,000	NS	10	14	17	16
Lead	400[5/]	5	34	37	32	25
Zinc	610,000	NS	46	61	59	160
Cyanide, Total (mg/kg):	41,000	NS	<1.2	<1.2	<1.2	<1.3
Percent Solids	--	--	82	83	83	76

Footnotes on page 4

TABLE 3-6
Summary of Constituents Detected in Suficial
Soil Samples Collected at SWMUs 10, 11, and 12
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL INDUSTRIAL[1/]	RCRA TC LEVEL[6/]	SWMU 11 960614-CO-11-SL0002 (2-4)	SWMU 12 960607-CO-12-SL0001 (0.5-1.5)	SWMU 12 960607-CO-12-SL0002 (0.5-1.5)	SWMU 12 960607-CO-12-SL9002
LAB ID			960006753	960006241	960006242	960006243
SAMPLE DATE			06/14/96	06/07/96	06/07/96	06/07/96
Volatile Organic Compounds (ug/kg):						
Acetone	200,000,000	NS	<65	<50	130	120
Benzene	200,000	500	83	<5.0	<5.0	9.4
Ethylbenzene	200,000,000	NS	<6.5	6.6	<5.0	8.4
m- and p-Xylenes	1,000,000,000[2/]	NS	<6.5	<5.0	<5.0	<5.0
Methylene chloride	760,000	NS	<6.5	<5.0	<5.0	<5.0
o-Xylene	1,000,000,000	NS	<6.5	<5.0	<5.0	<5.0
Toluene	400,000,000	NS	6.9	<5.0	<5.0	<5.0
Semivolatile Organic Compounds (ug/kg):						
1,2,4-Trichlorobenzene	20,000,000	NS	<8600	3700	<330	<330
2-Methylnaphthalene	NS	NS	19000	1400	1100	400
Acenaphthene	100,000,000	NS	130000	1900	<330	<330
Acenaphthylene	NS	NS	<8600	<330	1600	670
Anthracene	600,000,000	NS	120000	2000	570	340
Benzo(a)anthracene	7,800	NS	130000	4900	2500	2000
Benzo(a)pyrene	780	NS	86000	4700	7800	3400
Benzo (b) fluoranthene	7,800	NS	120000	5200	7800	2900
Benzo (k) fluoranthene	78,000	NS	21000	4500	5300	3600
Benzo (g,h,i) perylene	NS	NS	36000	3000	4700	1800
Chrysene	780,000	NS	97000	6000	4600	3100
Dibenzofuran	8,200,000	NS	95000	1400	<330	<330
Dibenzo (a,h) anthracene	780	NS	<8600	1400	2000	1100
Fluorene	82,000,000	NS	300000	2000	<330	330
Fluoranthene	82,000,000	NS	800000	9800	2600	2700
Indeno(1,2,3-cd)pyrene	7,800	NS	58000	3300	5500	2300
Naphthalene	82,000,000	NS	82000	<330	6400	1700
Phenanthrene	NS	NS	900000	7500	1200	800
Pyrene	61,000,000	NS	490000	9400	7000	4700

Footnotes on page 4

TABLE 3-6
Summary of Constituents Detected in Suficial
Soil Samples Collected at SWMUs 10, 11, and 12
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SAMPLE ID	USEPA RBC INGESTION SOIL INDUSTRIAL[1/]	RCRA TC LEVEL[6/]	SWMU 11 960614-CO-11-SL0002 (2-4)	SWMU 12 960607-CO-12-SL0001 (0.5-1.5)	SWMU 12 960607-CO-12-SL0002 (0.5-1.5)	SWMU 12 960607-CO-12-SL9002
LAB ID			960006753	960006241	960006242	960006243
SAMPLE DATE			06/14/96	06/07/96	06/07/96	06/07/96
Metals (mg/kg):						
Arsenic	3.8[3/]	5	8.4	96	220	89
Barium	100,000	100	99	81	170	78
Beryllium	1.3	NS	1.8	1.2	3.7	1.4
Chromium	10,000[4/]	5	52 J	46	92	29
Copper	82,000	NS	17	7.0	11	5.8
Mercury	610	0.2	0.77	<0.033	0.048	0.065
Nickel	41,000	NS	16	7.5	18	7.1
Lead	400[5/]	5	39	27	120	30
Zinc	610,000	NS	60	34	65	28
Cyanide, Total (mg/kg):	41,000	NS	<1.3	5.4	<1.0	<1.0
Percent Solids	--	--	77	84	85	85

1/ Source: EPA Region III Risk-Based Concentrations (RBC), April 30, 1996.
2/ RBC for m-xylene.
3/ RBC for arsenic as a carcinogen.
4/ RBC for chromium VI.
5/ Residential RBC.
6/ TC Level concentrations are in ug/L for VOCs and SVOCs and mg/L for metals.
J - Positive results have been classified as qualitative during data validation.
UJ - Analyte was not detected at or above the indicated concentration and has been classified as qualitative.
NS - No standard.
Note: Sample 960618-CO-10-SL9001 is the duplicate of 960618-CO-10-SL0001 (2-4) and sample 960607-CO-12-SL9002 is the duplicate of 960607-CO-12-SL0002(0.5-1.5).
Concentration may exceed RCRA TC level.
Concentration exceeds Industrial RBC.

TABLE 3-7
Summary of Constituents Detected in
Decontamination Pad Soil Cuttings
Coke Manufacturing Plant
Sloss Industries Corporation

SAMPLE ID	EPA RBC INGESTION SOIL INDUSTRIAL [1]	RCRA TC LEVEL [2]	960620-CO-IW-SL0001
LAB ID			960006994
SAMPLE DATE			06/20/96
Volatile Organic Compounds (ug/kg):			
1,1,2,2-Tetrachloroethane	29,000	NS	6.3
Benzene	200,000	500	11
Ethylbenzene	200,000,000	NS	84
m- and p-Xylenes	1,000,000,000 [3]	NS	120
Methylene chloride	760,000	NS	11
o-Xylene	1,000,000,000	NS	110
Toluene	400,000,000	NS	27
Semivolatile Organic Compounds (ug/kg):			
Fluoranthene	82,000,000	NS	34000
Naphthalene	82,000,000	NS	29000
Phenanthrene	NS	NS	27000
Metals (mg/kg):			
Arsenic	3.8 [4]	5 [4]	9.7
Barium	100,000	100	120
Beryllium	1.3	NS	1.9
Chromium	10,000 [5]	5 [5]	31
Copper	82,000	NS	21
Mercury	610	0.2	0.34
Nickel	41,000	NS	19
Lead	400 [6]	5	39
Zinc	600,000	NS	77
Cyanide, Total (mg/kg):	1600	NS	13
Percent Solids	--	--	62

1/ Source: USEPA Region III, Risk-Based Concentrations (RBCs), April 3, 1996.
2/ TC level concentrations are in ug/L for VOCs and SVOCs and mg/L for metals.
3/ RBC for m-xylene.
4/ RBC for arsenic as a carcinogen.
5/ RBC for chromium VI.
6/ Residential RBC.
Concentration exceeds residential RBC.

TABLE 3-8
IDW Soil Cutting Exceedences
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SWMU	Soil Boring	Compound Which May Exceed RCRA TC Level[1/]	Compound Which Exceeds USEPA Industrial RBC [2/]
SWMU 1A	960610-CO-01A-SL0004		Beryllium
	960611-CO-01A-SL0005		
SWMU 2A	960610-CO-02A-SL0001		
	960610-CO-02A-SL0002		
SWMU 3A	960611-CO-03A-SL0001		
	960611-CO-03A-SL0002		Arsenic and beryllium
SWMU 1B	960613-CO-01B-SL0004	Lead	Beryllium and lead
	960614-CO-01B-SL0005		Benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene
SWMU 5	960611-CO-05-SL0001	Lead	Benzo(a)pyrene and beryllium
	960612-CO-05-SL0002		Benzo(a)pyrene
	960612-CO-05-SL0003 &		
	960613-CO-05-SL0004		Benzo(a)pyrene and beryllium
	960613-CO-05-SL0005		Benzo(a)pyrene, indeno(1,2,3-cd)pyrene, arsenic, and beryllium
SWMU 6	960615-CO-06-SL0001		Benzo(b)fluoranthene, beryllium
SWMU 7	960615-CO-07-SL0001		Benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene, and beryllium
	960617-CO-07-SL0002	Chromium	Arsenic and beryllium
SWMU 8	960617-CO-08-SL0001		
SWMU 9	960614-CO-09-SL0001	Lead	Beryllium
SWMU 10	960618-CO-10-SL0001		Benzo(a)pyrene
	960618-CO-10-SL0002		
SWMU 11	960614-CO-11-SL0001		
	960614-CO-11-SL0002		Benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene
Decon Pad	960620-CO-IW-SL0001		

1/ Arsenic and beryllium were included as exceedences only if concentrations exceeded site background soil concentrations.

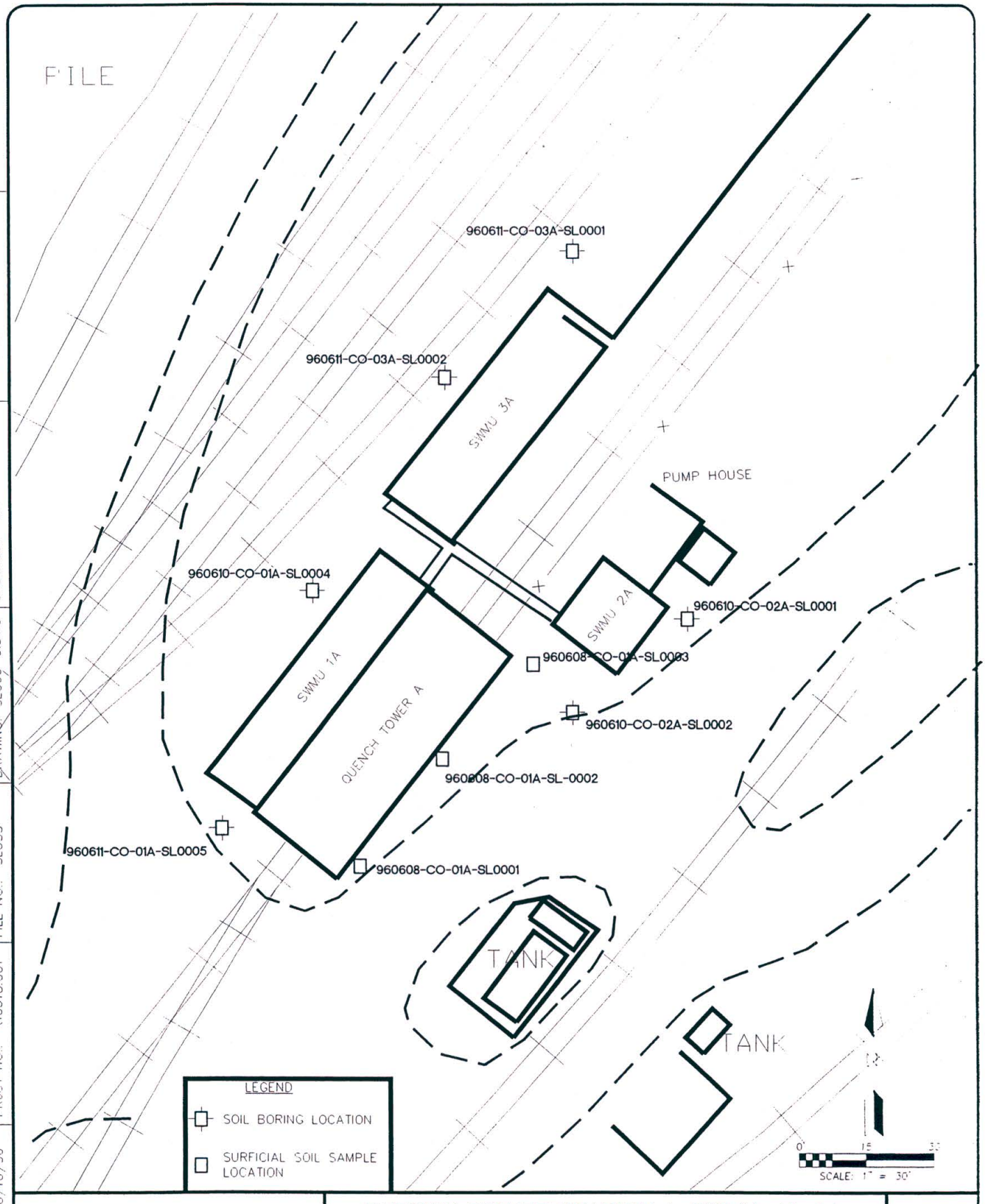
2/ Soil cuttings did not exhibit ignitability, corrosivity, and reactivity characteristics of hazardous waste.

Note: No soil cuttings were containerized from the trench installed at SWMU 2B and the soil borings installed at SWMU 12.

TABLE 3-9
IDW Soil Cutting Characterization
Coke Manufacturing Plant RFI
Sloss Industries Corporation

SWMU	Soil Boring	Number of Drums	Characterization			Proposed Management Practice		
			Concentration May Exceed RCRA TC Level [2/]	Concentration Exceeds EPA RBC for Industrial Ingestion[1/]	Concentrations Do Not Exceed EPA RBCs for Industrial Ingestion[1/]	Dispose of as Hazardous Waste	Dispose of as Contaminated Medium	Place Cuttings in Land Disposal Area at Sloss
SWMU 1A	960610-CO-01A-SL0004	1		X			X	
	960611-CO-01A-SL0005	1			X			X
SWMU 2A	960610-CO-02A-SL0001	1			X			X
	960610-CO-02A-SL0002	1			X			X
SWMU 3A	960611-CO-03A-SL0001	1			X			X
	960611-CO-03A-SL0002	1		X			X	
SWMU 1B	960613-CO-01B-SL0004	1	X	X		X		
	960614-CO-01B-SL0005	1		X				
SWMU 2B	960619-CO-02B-SL0001	0						
SWMU 5	960611-CO-05-SL0001	1	X	X		X		
	960612-CO-05-SL0002	1		X			X	
	960612-CO-05-SL0003 &							
	960613-CO-05-SL0004	1		X			X	
	960613-CO-05-SL0005	1		X			X	
SWMU 6	960615-CO-06-SL0001	1		X			X	
SWMU 7	960615-CO-07-SL0001	1		X			X	
	960617-CO-07-SL0002	1	X	X		X		
SWMU 8	960617-CO-08-SL0001	1			X			X
SWMU 9	960614-CO-09-SL0001	1	X	X		X		
SWMU 10	960618-CO-10-SL0001	1		X			X	
	960618-CO-10-SL0002	1			X			X
SWMU 11	960614-CO-11-SL0001	1			X			X
	960614-CO-11-SL0002	1		X			X	
SWMU12	960607-CO-12-SL0001	0						
	960607-CO-12-SL0002	0						
Decon Pad	960620-CO-IW-SL0001	1			X			X

1/ Arsenic and beryllium were included as exceedences only if concentrations exceeded site background soil concentrations.
2/ Soil cuttings did not exhibit ignitability, corrosivity, and reactivity characterists of hazardous waste.



DRAFTED: BJH | APPROVED: PF | CHECKED: KT | DRAWING: SL095-3.DWG | FILE NO.: SLOSS | PROJECT NO.: tf0318.001 | DWG DATE: 10/16/96

GERAGHTY & MILLER, INC.
Environmental Services

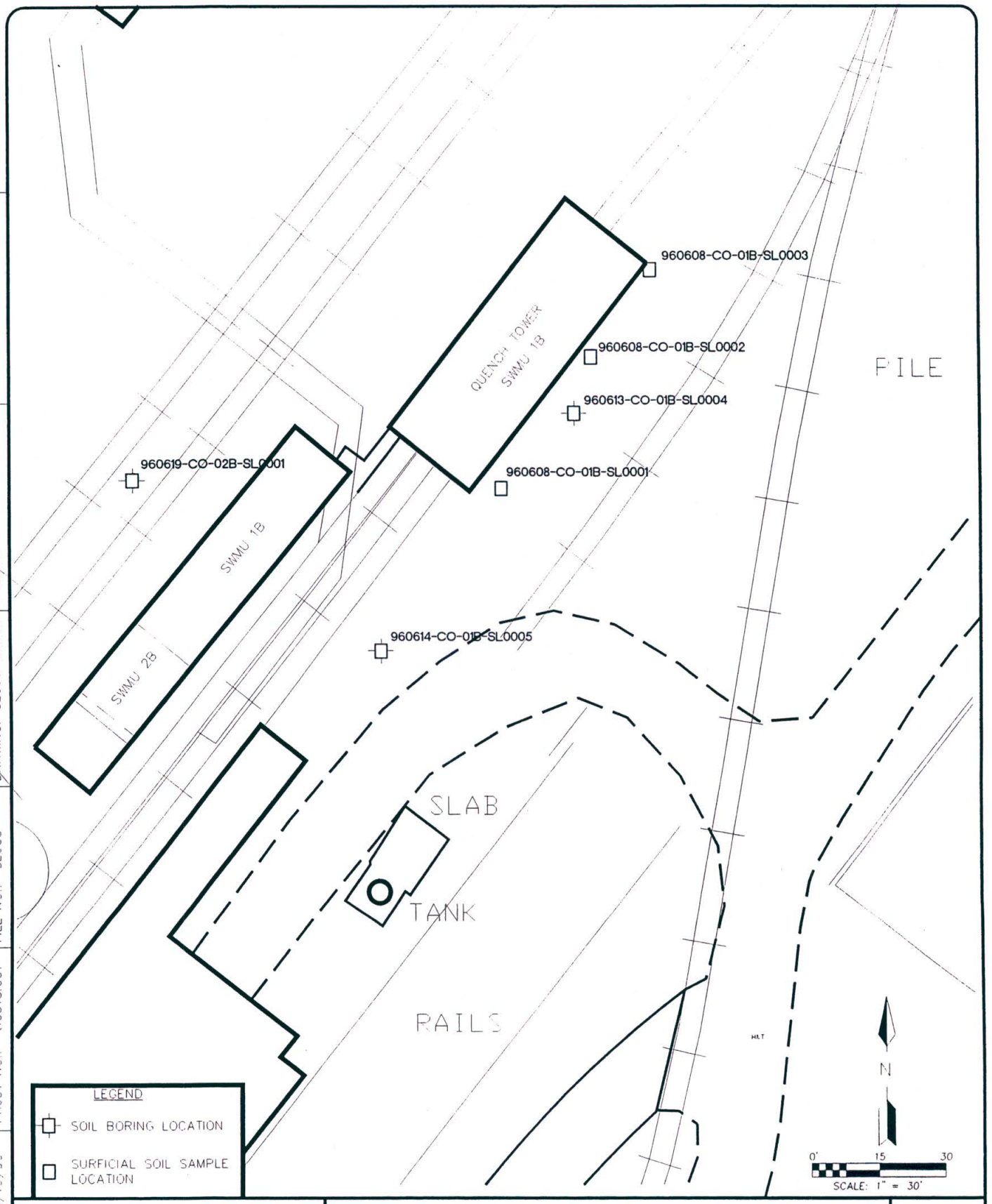
QUENCH TOWER STATION A, SWMUs 1A, 2A, AND 3A SOIL BORING LOCATION MAP

COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE

1-1



DWG DATE: 10/16/96 | PRJCT NO.: tf0318.001 | FILE NO.: SLOSS | DRAWING: SL095-3.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: BJH

GERAGHTY & MILLER, INC.
Environmental Services

QUENCH TOWER STATION B, SWMUs 1B AND 2B SOIL BORING LOCATION MAP

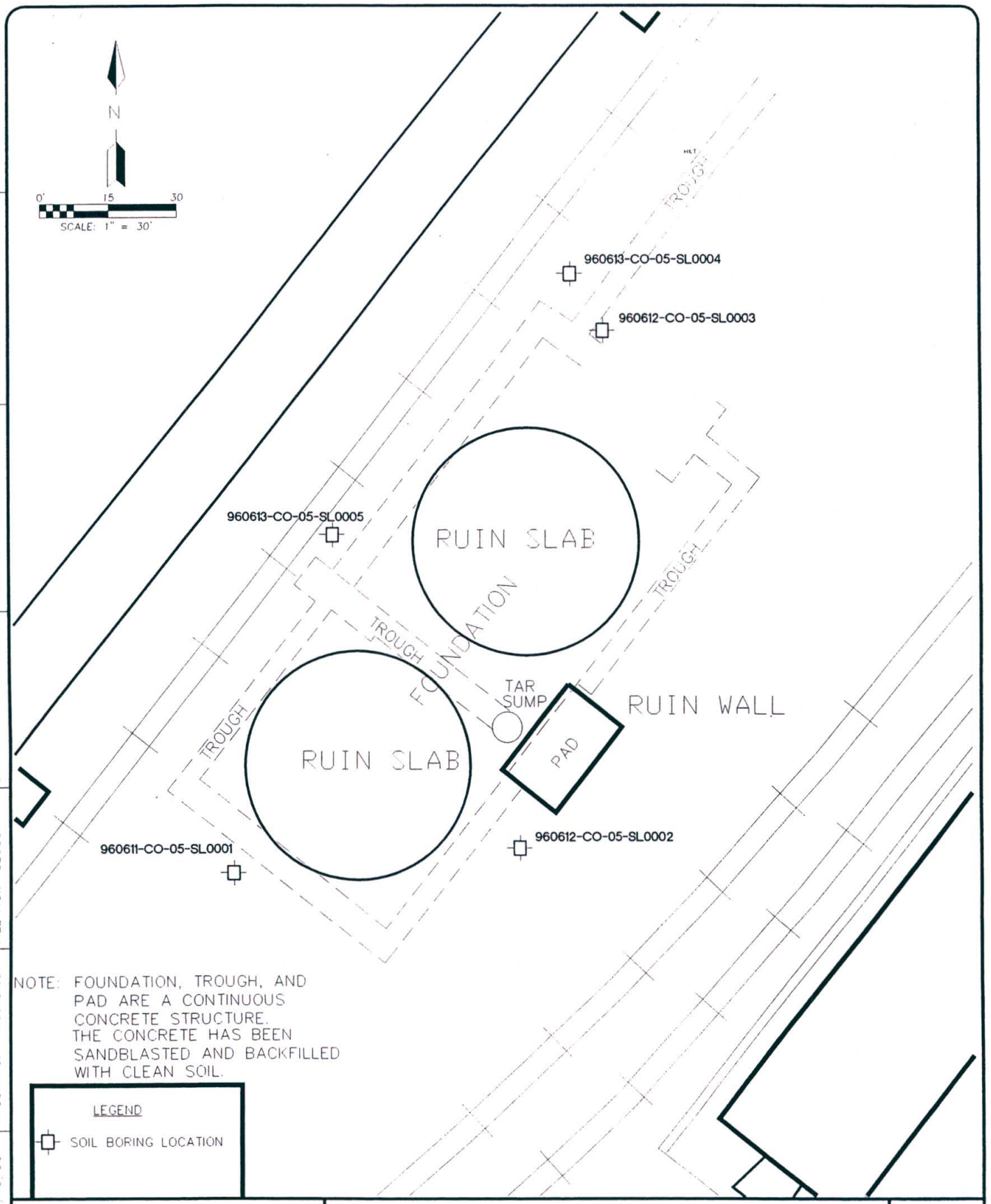
COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION

BIRMINGHAM, ALABAMA

FIGURE

1-2



DRAFTER: RJH | APPROVED: FF | CHECKED: KT | DRAWING: SL095-3.DWG | FILE NO.: SL095 | PROJECT NO.: 10318.001 | DWG DATE: 10/12/96

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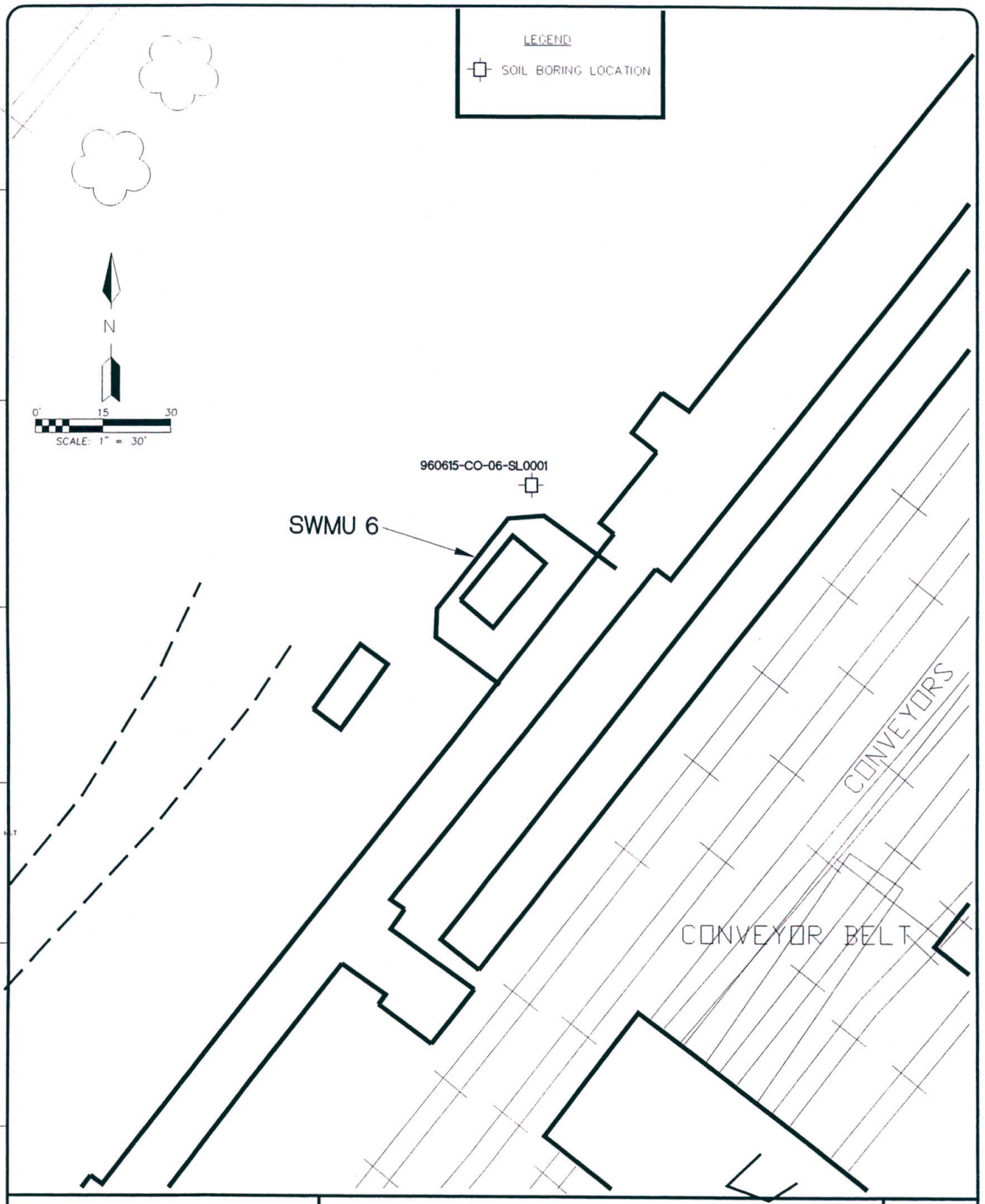
Environmental Services

SWMU 5 SOIL BORING LOCATION MAP

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
1-3



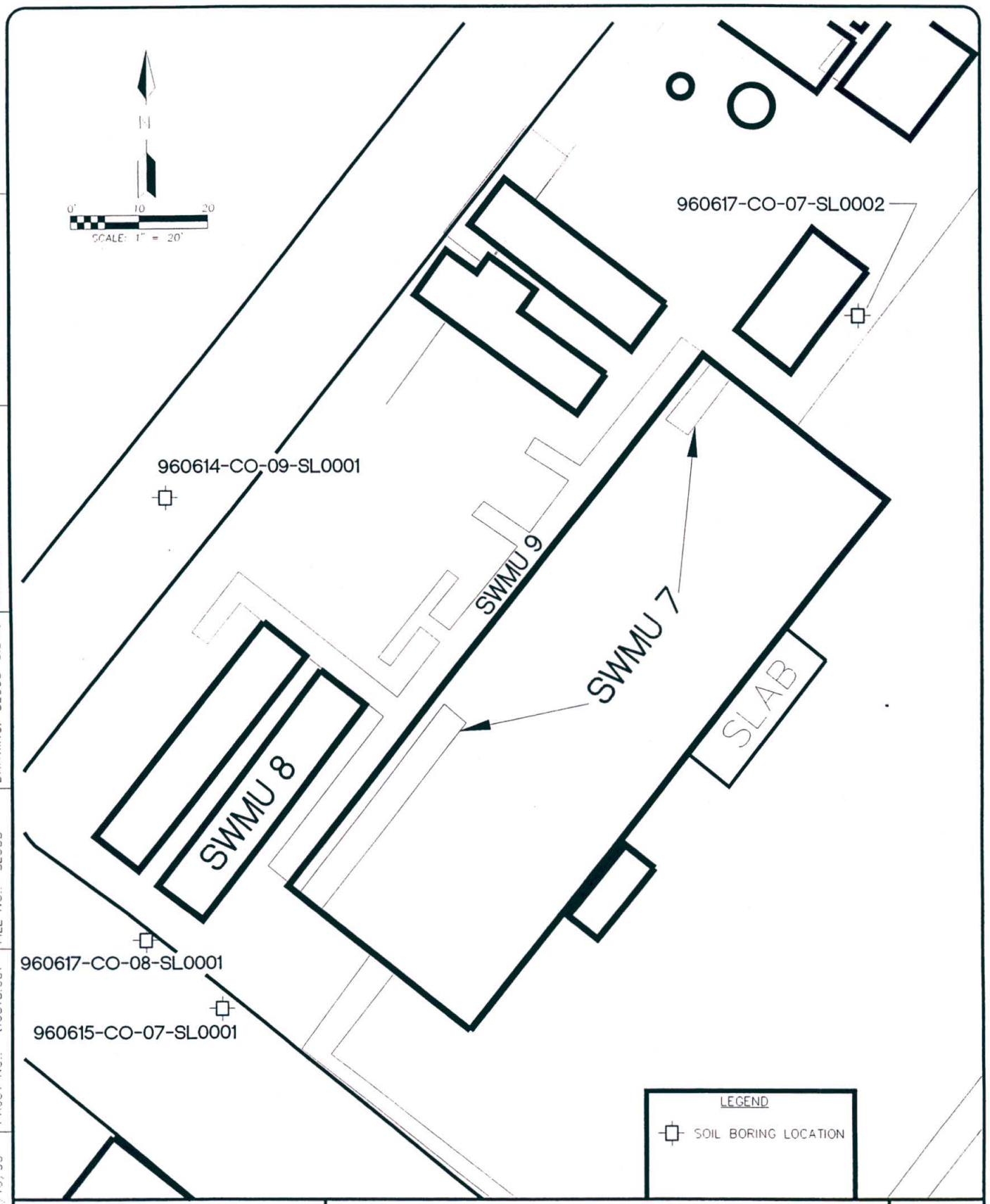
DWG DATE: 10/16/96 | PRJCT NO.: t10318.001 | FILE NO.: SLOSS | DRAWING: SL095-3.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: EJH

GERAGHTY & MILLER, INC.
Environmental Services

SWMU 6 SOIL BORING LOCATION MAP

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
1-4



DWG DATE: 10/16/96 | PRJCT NO.: tf0318.001 | FILE NO.: SLOSS | DRAWING: SL095-3.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: BJH

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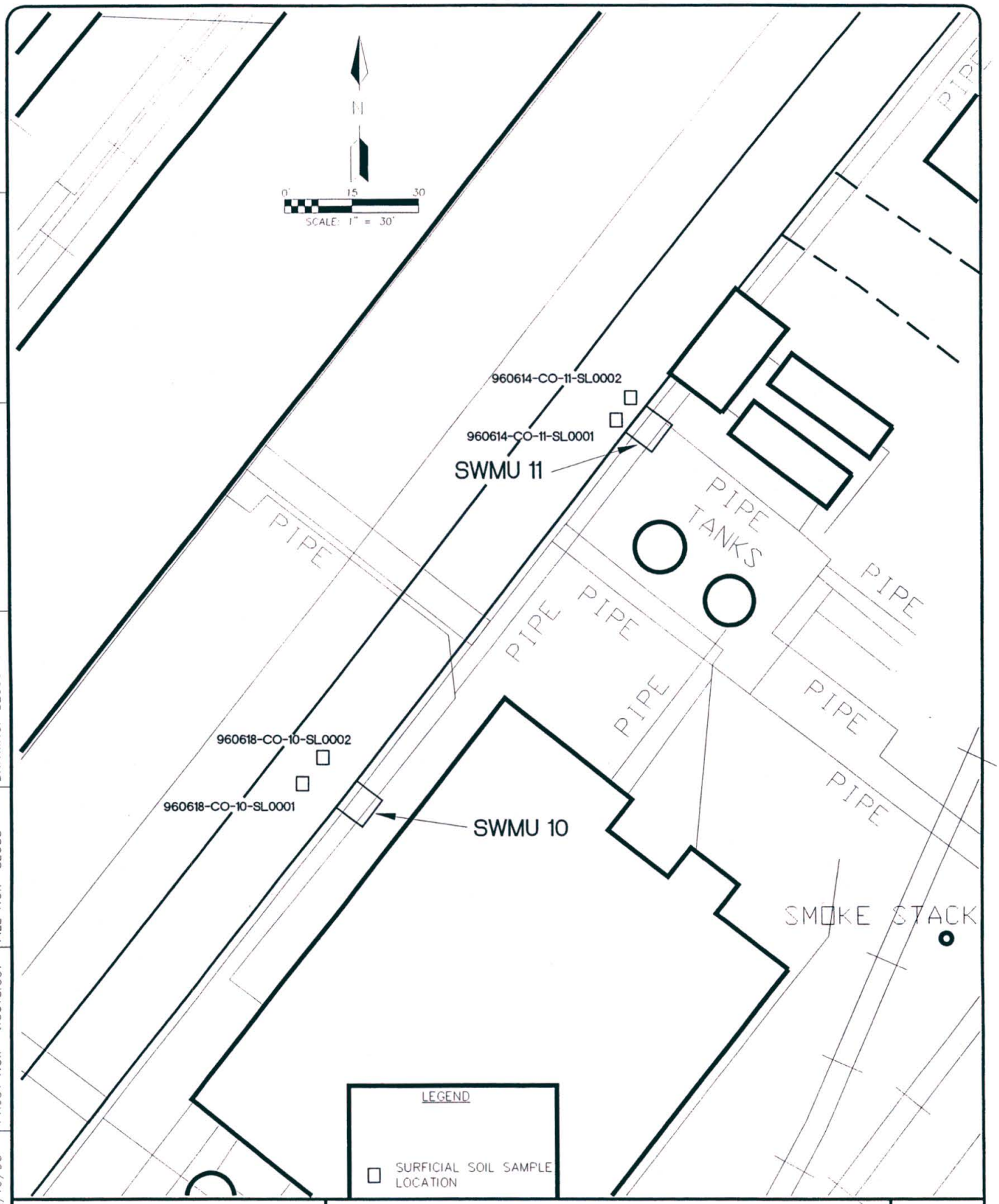
SWMUs 7, 8 AND 9 SOIL BORING LOCATION MAP

COKE MANUFACTURING PLANT RFI
SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE
1-5



DWG DATE: 10/16/96 | PRJCT NO.: tf0318.001 | FILE NO.: SLOSS | DRAWING: SL095-3.DWG | CHECKED: KT | APPROVED: PF | DRAFTER: BJH

GERAGHTY & MILLER, INC.
Environmental Services

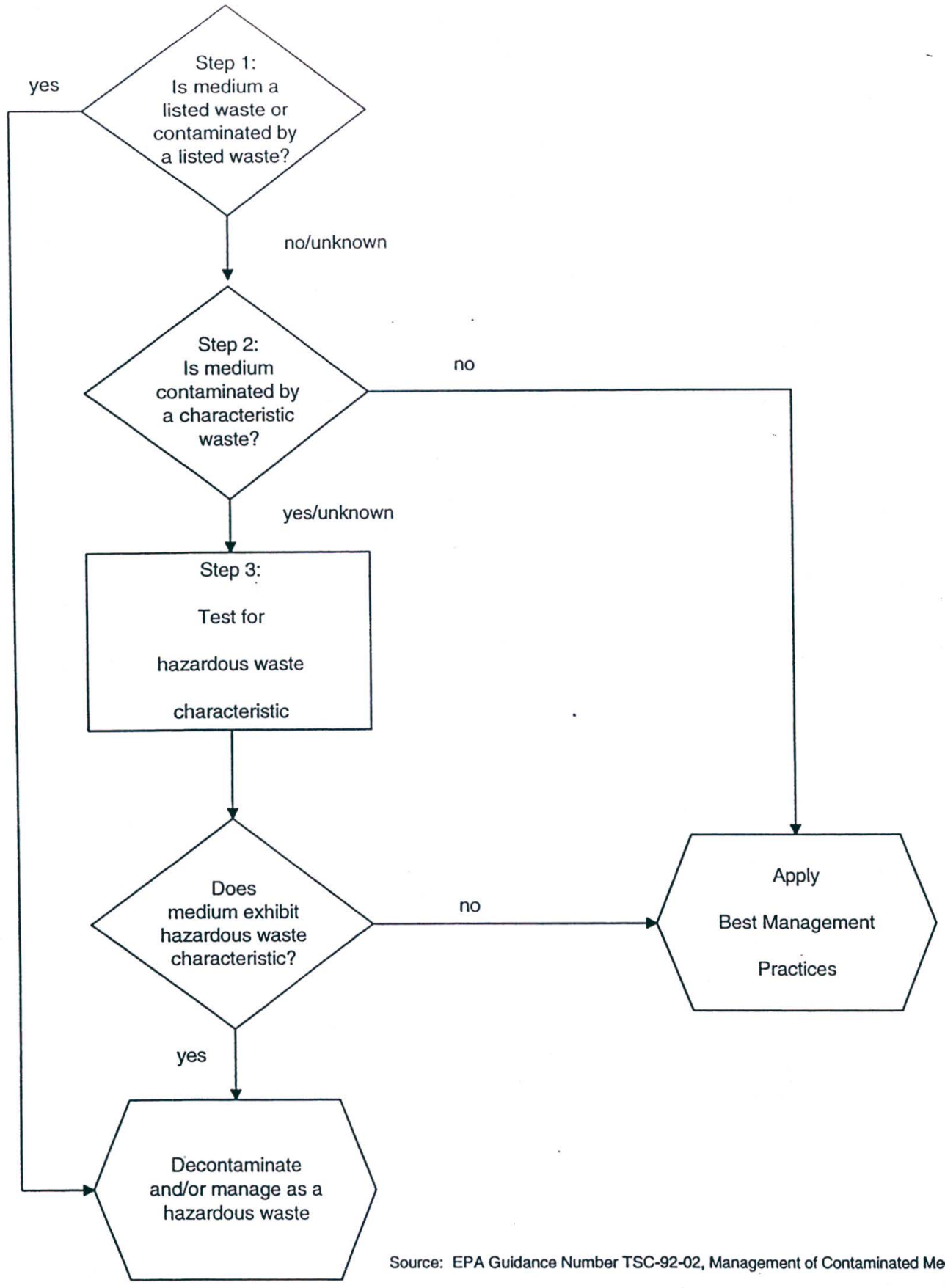
SWMU 10 AND 11 SURFICIAL SOIL SAMPLING LOCATION MAP

COKE MANUFACTURING PLANT RFI

SLOSS INDUSTRIES CORPORATION
BIRMINGHAM, ALABAMA

FIGURE

1-6



Source: EPA Guidance Number TSC-92-02, Management of Contaminated Media

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a heidemij company

DECISION MATRIX FOR MANAGING CONTAMINATED MEDIA

FIGURE 2-1

APPENDIX A

USEPA GUIDANCE NUMBER TSC-92-02
MANAGEMENT OF CONTAMINATED MEDIA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

MEMORANDUM

DATE: DEC 2 8 1992

SUBJECT: Guidance Number TSC-92-02
Management of Contaminated Media

FROM: G. Alan Farmer
Chief, RCRA Branch

TO: Addressees

Attached please final guidance developed by the EPA Region IV RCRA Technical Screening Committee regarding management of contaminated groundwater, surface water and soils. This guidance expands upon the existing "contained-in" policy and also addresses management of environmental media exhibiting a hazardous characteristic.

This guidance should be followed by EPA Region IV staff and all others who actively manage contaminated environmental media within Region IV during any of the following RCRA activities:

- Corrective actions;
- Site investigations;
- Clean up of hazardous waste spills; and
- Closure of RCRA treatment, storage or disposal units.

In addition, this guidance represents an interpretation of RCRA regulations and as such should be considered in evaluating ARARs for CERCLA activities.

The Technical Screening Committee would like to thank everyone who commented on the draft for their contributions to the guidance.

Attachment

Printed on Recycled Paper

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EPA REGION IV RCRA GUIDANCE:
MANAGEMENT OF CONTAMINATED MEDIA
Guidance Number TSC-92-02
August 1992

I. Introduction

On several previous occasions, EPA has issued directives and guidance addressing the regulatory status and proper disposition of contaminated environmental media under the Resource Conservation and Recovery Act (RCRA). However, Region IV continues to receive inquiries from the States and the regulated community requesting more detailed guidance on this subject. This document explains how to properly manage contaminated environmental media (i.e., groundwater, surface water, soils and sediments) during routine field work at hazardous waste sites.

It is important to emphasize that this guidance is only intended to be an interpretation of RCRA regulations. Nothing in this guidance is intended to change or supercede actual RCRA regulatory requirements. Several anticipated rulemakings relate to this guidance, including the Land Disposal Restrictions for Contaminated Soil and Debris and the Hazardous Waste Identification Rule. If any provisions of these future RCRA regulations are in conflict with this guidance, the regulations (once final) will take precedent. 1/

II. Scope and Applicability

This guidance sets forth procedures for the proper management of contaminated environmental media produced and/or managed during the investigation and remediation of hazardous waste sites. Contaminated media should be managed in accordance with this guidance whenever hazardous constituents are present above levels of human health or environmental concern.

This guidance applies to contaminated media generated during the following RCRA activities:

1. corrective actions;
2. site investigations;
3. clean up of spills of listed or characteristic hazardous waste; and
4. closure of RCRA treatment, storage, or disposal units.

1/ The policies and procedures established in this document are intended solely for the guidance of employees of the U.S. Environmental Protection Agency. They are not intended and cannot be relied upon to create any rights, substantive or procedural, enforceable by any party in litigation with the the United States. EPA reserves the right to act at variance with these policies and procedures and to change them at any time without public notice.

The procedures and management practices set forth in this guidance should be followed by EPA Region IV and all others who actively manage contaminated media at sites within the Region, regardless of whether such management activities are voluntary or carried out in response to EPA regulations or directives.

III. Background

The regulatory status of contaminated groundwater was first specifically addressed in a December 26, 1984, memorandum from John Skinner, Director of the Office of Solid Waste to James Scarbrough, Region IV Residuals Management Branch Chief. In that memorandum, Skinner noted that contaminated groundwater that is "collected" and derived from listed wastes or hazardous by characteristic is a hazardous waste and subject to Subtitle C regulations.

A November 13, 1986, memorandum from Marcia Williams, Director of the Office of Solid Waste to Patrick Tobin, Region IV Waste Management Division Director attempted to more precisely explain the EPA position on contaminated groundwater presented by Skinner. The Williams memorandum explained what is now referred to as the "contained-in" policy. Williams stated that groundwater in an aquifer is not a solid waste and thus not a hazardous waste, but that groundwater contaminated with hazardous waste leachate is subject to RCRA Subtitle C regulations because it "contains" a hazardous waste and therefore must be managed as if the groundwater itself was hazardous. However, if groundwater is treated such that it no longer contains a hazardous waste, the groundwater would no longer be subject to regulation under Subtitle C of RCRA.

Subsequent to the 1986 Williams memorandum, the scope of the "contained-in" policy has been applied to contaminated soil, debris, and leachate. For example, in the Land Disposal Restrictions (LDR) First Third Final Rule (53 FR 31142) the Agency clarified the applicability of the LDR treatment standards to residues from types of management other than treatment. [2] Examples cited by EPA are contaminated soil or leachate derived from managing the waste. EPA stated: "In these cases, the mixture is deemed to be the listed waste, either because of the derived-from rule, the mixture rule (40 CFR §261.3(a)(2)(iv)), or because the listed waste is contained in the matrix...". [3]

2/ Residuals from treatment of listed hazardous waste have always been considered hazardous waste by application of the derived-from rule (40 CFR §261.3(c)(2)(i)).

3/ The reference to contaminated soil and leachate as "the mixture" does not mean that contaminated medium is considered hazardous waste by application of the mixture rule. However, the contained-in policy is, in fact, analogous to the mixture rule, involving mixtures of hazardous

(continued. . .)

In a June 19, 1989, letter to Thomas C. Jorling, Commissioner of the New York Department of Environmental Conservation from Jonathan Cannon, Acting Assistant Administrator, EPA reiterated the basis for EPA's authority to regulate contaminated environmental media under Subtitle C of RCRA. Referring to the "mixture" rule and "derived-from" rule, Cannon states

> ...However, these two rules do not pertain to contaminated environmental media. Under our regulations, contaminated media are not considered solid wastes in the sense of being abandoned, recycled, or inherently waste-like as those terms are defined in the regulations. Therefore, contaminated environmental media cannot be considered a hazardous waste via the "mixture" rule (i.e., to have a hazardous waste mixture, a hazardous waste must be mixed with a solid waste per 40 CFR §261.3(a)(2)(iv)). Similarly, the "derived-from" rule does not apply to contaminated media. Our basis for stating that contaminated environmental media must be managed as hazardous waste is that they "contain" listed hazardous waste. These environmental media must be managed as hazardous waste because and only so long as, they "contain" a listed hazardous waste (i.e., until decontaminated).

IV. Regional Interpretation

All currently available EPA policy pertains to environmental media known to be contaminated with a listed hazardous waste. These documents collectively make up the "contained-in" policy. However, the "contained-in" policy does not address contamination from characteristic hazardous waste. Furthermore, in practice there are many times where there is no clear documentation that an environmental medium was contaminated by either a listed or characteristic hazardous waste (as is often the case at solid waste management units). Because we routinely encounter contaminated media situations beyond the scope of the traditional "contained-in" policy, it is appropriate to clarify by establishing a general definition of "contaminated" media.

EPA Region IV has established that the criteria used to determine if media requires controlled management is based upon human health and environmental risk. By definition a medium is "contaminated" if one or more hazardous constituents, as identified in 40 CFR Part 261 Appendix VIII, are present above levels of human health or environmental concern and above naturally occurring (background) levels (this is specifically for areas where there are naturally occurring high levels of Appendix VIII constituents). Contaminated environmental media should either be managed in accordance with RCRA Subtitle C requirements or "best management

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3/(continued. . .)

waste and non-waste materials while the mixture rule governs mixtures of hazardous and solid waste. The mixture rule has been codified, but the interpretive contained-in policy has the same regulatory effect. The interpretation that media containing hazardous waste must be regulated as hazardous waste was upheld in Chemical Waste Management v. U.S. EPA, 869 F.2d 1526, 1540 (D.C. Cir. 1989).

practices" as specified in Section V of this guidance. However, if a contaminated medium is treated to at or below risk-based standards (or to naturally occurring background levels), it can be rendered "decontaminated."

Risk-based levels for hazardous constituents should be derived on a site-specific basis with the aid of a toxicologist (and an ecologist, where appropriate). It is not possible or appropriate for the Region to establish generic "de minimis" levels for constituents absent a new rulemaking. Human health protection limits should be calculated using reference toxicity values for cancer and noncancer effects (i.e., carcinogenic potency factors (CPFs) and reference doses (RfDs), respectively), and exposure rate and route assumptions appropriate to site conditions. Consideration of contaminant attenuation is not an appropriate substitute for direct exposure assumptions in determining decontamination levels for environmental media. This is because a decontaminated medium under this guidance is not subject to controlled management (as opposed to non-hazardous or delisted solid waste, which under Subtitle D of RCRA remains subject to regulatory control). However, consideration of fate and transport for possible leaching to groundwater is necessary to ensure that a contaminated soil is treated to below risk-based standards for all exposure pathways. The RCRA RFI Guidance and the CERCLA Risk Assessment Guidance (RAG) should be consulted for further explanation on risk evaluations.

Once an environmental medium is determined to be "contaminated", knowledge of how the medium became contaminated dictates how that medium must be managed. The attached decision matrix is provided to assist the user in making the correct regulatory decision for management of contaminated media. A contaminated medium must ultimately be managed one of two ways: 1) as if it were a hazardous waste, or 2) in accordance with "best management practices." The discussion below explains the decision matrix logic.

A medium contaminated by listed hazardous waste clearly falls within the scope of the "contained-in" policy (Step 1 on the decision matrix). As established in Section III, the listed hazardous waste is "contained-in" the medium. The P- and U- waste listings represent a special situation whereby contaminated media are listed hazardous wastes. As stated in 40 CFR §261.33(d):

> Any residues or contaminated soil, water or other debris resulting from the cleanup of a spill into or on the land or water of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section, or any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on the land of any off-specification chemical product and would have the generic name listed in paragraph (e) or (f) of this section.

Thoso contaminated media are P- and U-listed hazardous wastes and are subject to all RCRA requirements. Although contaminated soil, water or other debris are considered hazardous wastes under this listing, if they are decontaminated, they no longer meet the listing and therefore are not a listed hazardous waste nor do they "contain" a listed hazardous waste.

Both contaminated media which are themselves listed hazardous wastes (P- and U-listed wastes) and media which "contain" listed hazardous waste must be managed in accordance with Subtitle C regulations. Once a medium is decontaminated such that it no longer is a listed hazardous waste (P- and U-listed wastes) or no longer "contains" the listed hazardous waste, then Subtitle C ceases to apply.

Another way in which media may become "contaminated" is through contact with a characteristic hazardous waste (Step 2 on the decision matrix). If it can be validated that the medium was not contaminated by a characteristic hazardous waste, then the medium may be managed in accordance with best management practices. However, if knowledge of the originating waste stream indicates that contamination did result from a characteristic hazardous waste, or if the source of contamination is unknown, then the medium must be tested to determine whether it exhibits a hazardous waste characteristic (Step 3 on the decision matrix).

Any medium exhibiting a hazardous waste characteristic must be managed in accordance with Subtitle C regulations until it no longer exhibits the characteristic. If the medium is found not to exhibit a hazardous characteristic but is still "contaminated", it must be managed according to best management practices.

In summary, there are two key points to note when using the decision matrix. Contaminated media which are themselves hazardous wastes (P- and U-listed wastes), media which exhibit a hazardous waste characteristic, and media which "contain" listed hazardous waste must be managed in accordance with Subtitle C regulations. Where documentation does not exist to confirm that the contamination source (or the medium of interest, in the case of P- and U-listed wastes) is listed waste and the medium does not exhibit a hazardous waste characteristic, best management practices should be applied.

The management scenarios described above apply to a contaminated medium until such medium is decontaminated. Decontamination is required for all Appendix VIII constituents which are above health-based limits and background, not merely the Appendix VIII constituent for which the waste was listed or which caused the medium to exhibit a hazardous characteristic. All RCRA investigation and corrective action plans submitted to EPA Region IV for review and approval should include a sampling and analysis protocol for verifying that a medium has been decontaminated if treatment is to occur on-site. Sampling frequency for verifying decontamination will depend on a number of site-specific factors, such as the source of the contaminated medium, nature, extent and degree of contamination, and type of treatment. As an example, for small

amounts of contaminated media (soil samples, drill cuttings, well purge water, etc.), testing of each drum or batch might provide adequate verification of decontamination. However, for large scale remediation of groundwater, periodic sampling might be appropriate. Chapter 9 of SW-846 provides more specific information regarding appropriate sampling procedures and frequencies.

A more detailed discussion of what "subject to Subtitle C regulations" means is provided in Section VI. Best management practices will be defined for each situation as part of the review process for sampling, investigation and corrective action plans. Some examples of best management practices are provided in Section V.B.

V. Management Procedures

This portion of the guidance contains several sub-sections which provide specific guidance for managing contaminated media under several common scenarios encountered at hazardous waste sites. This guidance provides the user with a high degree of flexibility to make site-specific management decisions. It also encourages the user to take full advantage of variances and exemptions provided for under RCRA.

A. RCRA Corrective Actions

Any contaminated medium containing a listed hazardous waste that is actively managed under a corrective action is subject to Subtitle C requirements. Any unit used for the treatment, storage, or disposal of such medium is also subject to Subtitle C requirements (see Section VI regarding applicability of Subtitle C requirements).

Any medium contaminated with a characteristic hazardous waste must be tested to determine if the medium exhibits any hazardous characteristics. If the medium does exhibit a hazardous characteristic, it is subject to Subtitle C requirements. Any unit used for the treatment, storage, or disposal of such medium is also subject to Subtitle C. A medium that does not exhibit a characteristic, or is treated such that it does not exhibit a characteristic, but is by definition contaminated, is subject to best management practices, but is not subject to Subtitle C requirements.

Treatment of a contaminated medium, whether it is from a listed or characteristic hazardous waste, may yield a decontaminated medium component and one or more waste components. The decontaminated medium component is not subject to RCRA Subtitle C, but may be subject to State and Local requirements, RCRA Subtitle D, and best management practices. The waste component is subject to RCRA Subtitle C requirements if it exhibits a hazardous waste characteristic or resulted from treatment of media containing a listed hazardous waste. Otherwise, disposal of the waste component is subject to State and Local requirements.

For corrective action purposes, a "no action" alternative should not be selected for a medium that is considered "contaminated", because that medium is still a health and environmental hazard until it is decontaminated.

B. Site Investigation Residues

If it has been determined that the environmental medium to be sampled is itself a hazardous waste (P- and U-listed wastes), exhibits a hazardous waste characteristic or "contains" a listed hazardous waste, then Subtitle C requirements apply to the residues (purge water, drill cuttings, drilling fluids, etc.) that are generated during the sampling event. These residues must be containerized and/or treated and disposed in a manner that is in compliance with Subtitle C of RCRA.

An issue of particular concern is the applicability of land disposal restrictions (LDRs) to site investigation residues. "Land disposal" occurs when hazardous wastes (or contaminated media subject to Subtitle C) are consolidated from different units into one unit, when media are moved outside the unit (for treatment or storage) and returned to the unit, or when media are excavated, placed in a separate waste mangement unit (such as an incinerator or tank within the unit), and redeposited in the unit.

The Agency has developed guidance which addresses the applicability of RCRA LDRs to contaminated residues generated during Superfund site investigations. The CERCLA Guide to Management of Investigation-Derived Waste (OSWER Directive 9345.3-03fs) states that storing investigation-derived waste (IDW) in containers within the Area of Contamination (AOC), and then returning it to its source does not trigger LDR treatment standards as long as the containers are not managed in a such a manner as to constitute a "hazardous waste management unit" as defined in 40 CFR §260.10. 4/ In addition, sampling and direct replacement of wastes within an AOC do not constitute land disposal. It must be emphasized that direct replacement of contaminated media can only occur within an AOC. Contaminated residue outside of the AOC should be containerized and/or treated and disposed in compliance with Subtitle C of RCRA.

The proposed RCRA 40 CFR Part 264 Subpart S rules contain provisions for a corrective action management unit (CAMU), the RCRA analog to the CERCLA AOC. In an August 1992 guidance entitled "Use of the Corrective Management Unit Concept", EPA provided clarification regarding use of the CAMU concept prior to finalization of the

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4/ An April 16, 1991, memorandum from Caroline H. Wehling, Attorney, Solid Waste and Emergency Response, to Steven C. Golian, Chief, Remedial Guidance Section, establishes that EPA does not generally consider drums placed within a landfill to form "container storage areas". Thus, if waste is placed into drums which remain in the AOC and which are not placed into a separate storage or treatment area, such placement would not be considered a unit distinct from the landfill itself.

Subpart S regulations. In this guidance, the Regions were advised that the CAMU concept may be used in some situations to allow designation of an area of broad contamination as a single unit for purposes of determining what RCRA management standards apply. Thus, if the CAMU concept can be used in accordance with the August 1992 guidance to the same extent that the Agency describes a Superfund AOC, then the OSWER Directive 9345.3-03FS interpretation of what constitutes land disposal can also be applied to RCRA site investigation residues.

When sampling in areas or zones of suspected contamination where documentation does not exist to confirm that the contamination source was a listed hazardous waste, residues should be containerized until test results are available to determine whether the residue exhibits a characteristic. If the medium does not exhibit a hazardous waste characteristic, then Subtitle C regulations do not apply but the environmental sampling residues should still be managed in a manner that is protective of human health and the environment (i.e., best management practices). Best management practices should be followed any time that test results indicate residues contain hazardous constituents above a health or environmental based limit (but the residues do not exhibit a hazardous characteristic and the contamination source was not a listed waste). Best management practices suggest that contaminated sampling residues be treated or disposed in a unit that is operated in accordance with an environmental permit (e.g., NPDES, UIC, RCRA, or State solid waste management). If treatment or disposal in a permitted unit at the facility is not an available option, then the residues may be sent to an approved off-site facility for treatment or disposal. Alternatively, the residues may be stored in a secure location at the facility until the waste site under investigation is remediated. The residues should then be included in the remediation process.

It is recommended that the amount of residues generated during a sampling event be minimized (e.g., if possible, conduct pump tests in areas outside the plume of contamination). Residues that are not expected to be contaminated should not be mixed with contaminated residues (e.g., drill cuttings removed from above the water table in an area with no surface soil contamination should not be mixed with cuttings removed from below the water table).

All sampling plans that are submitted to the Region IV RCRA program for review and approval should contain procedures that detail how residues will be managed in compliance with this guidance.

C. Hazardous Waste Spills

EPA has developed a straightforward approach for assessing the regulatory status of spilled hazardous wastes. The approach is based on the premise that "a spill of hazardous material to soil or groundwater is normally a simple act of disposal" (55 FR 22671), or, put more simply, a spill constitutes disposal.

Under this approach, the spill of a hazardous waste constitutes "unpermitted" disposal of hazardous waste. The Agency recognizes the need for prompt action in response to a spill, and has provided that cleanup need not be done under a RCRA permit, provided it is done expeditiously and in an environmentally sound manner (see 40 CFR §264.1(g)(8) and 40 CFR §265.1(c)(11)).

EPA regulations have been promulgated for certain "spill" scenarios, due to the nature of certain kinds of waste. 40 CFR §261.33(d) identifies how the cleanup residues from a spill of P- and U-listed chemical products must be managed. In summary, it says that the residue or contaminated debris (including soil and water) from the cleanup of a spill of P- or U-listed chemical product is a hazardous waste when discarded (or when intended to be discarded). The residues from spills of F- and K-listed wastes and characteristic wastes should be managed in accordance with the procedures set forth in Section IV of this document.

When a spilled material is recycled or able to be recycled, the RCRA recycling regulations may exempt it from any other hazardous waste regulations. But the difficulty of recycling spill residues in such matrices as soil and groundwater indicates that a simple assertion of intent to recycle is not sufficient to claim a recycling exemption from regulation. Therefore, EPA asserts that the burden of proof for recycling remains on the generator.

In 55 FR 22671, EPA identifies five objective considerations for the regulator to apply in reviewing a recycling assertion, namely:

1. whether the generator has begun to recycle the spill;
2. the length of time the spill residue has existed;
3. the value of the spilled material;
4. whether it is technically feasible or practical to recycle the spill; and
5. whether there is any history of the company recycling this type of spill residue.

Other considerations may apply in site-specific cases.

D. RCRA Closures

In closing a RCRA regulated land-based unit, a facility has two options: "clean closure" or leaving the waste and waste residues in place and conducting post-closure care. To clean close, a facility must remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate.

The regulations are not clear regarding management of contaminated subsoils or other environmental media that are removed to achieve clean closure. Specifically, the closure regulations do not

distinguish between contaminated media, which is not a solid waste, and other contaminated materials, which could be solid waste. The regulations at 40 CFR §§265.197, 265.228, 265.258, 265.280 and 265.310 (and the corresponding permit standards in 40 CFR Part 264) all state that removed contaminated soils [5] must be managed as a hazardous waste unless 40 CFR §261.3(d) applies. 40 CFR §261.3(d), which provides for delisting and demonstration of absence of hazardous waste characteristic, only refers to solid waste. Although soils and groundwater are not solid waste, the Region extends the provision for the demonstration of absence of characteristic in 40 CFR §261.3(d) to environmental media.

This interpretation is valid in that it is not appropriate to apply more stringent standards to environmental media than to solid wastes. In addition, although a contaminated medium is not itself a solid waste, the contamination within the medium is a solid waste and 40 CFR §261.3(d) clearly applies. Therefore, contaminated media from RCRA closures must be managed as if they are hazardous wastes and must meet Subtitle C requirements as long as they contain a listed waste or exhibit a hazardous waste characteristic. If a medium does not exhibit a hazardous waste characteristic, best management practices apply.

The treatment of a contaminated medium may yield a decontaminated medium component and one or more waste components. The decontaminated medium component is not subject to RCRA Subtitle C. The waste component remains subject to Subtitle C unless and until 40 CFR §261.3(d) applies.

VI. Subtitle C Requirements

Sections IV and V of this guidance define "contaminated" media and establish which categories of contaminated media are subject to Subtitle C requirements. In summary, Subtitle C requirements apply to active management of any medium which is itself a hazardous waste (P- and U-listed waste), any medium which "contains" a listed hazardous waste, and any medium which exhibits a hazardous waste characteristic.

It is not possible for one guidance to examine all of the Subtitle C requirements which might apply to management of contaminated media.

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[5] As clarified in 52 FR 8703, the Agency interprets the term "soil" broadly to include both unsaturated soils and soils containing groundwater. Uncontaminated groundwater is therefore a requirement for clean closure.

However, once the determination is made that the contaminated medium is subject to Subtitle C requirements, then the applicable Subtitle C requirements are the same as if that medium were in fact a hazardous waste. Thus, it is necessary to consider how the medium is being managed in determining which Subtitle C requirements would apply.

One of the most commonly asked questions is whether management of contaminated media requires a permit, especially if a contaminated medium is being managed as a result of corrective action under RCRA §3004(u), §3004(v) and §3008(h). To address this question, Region IV conducted a legal analysis of the RCRA regulations and corrective action legislative history. In summary, if the source of contamination renders media "subject to Subtitle C requirements" as explained in this guidance, and if the conduct of corrective action under RCRA §3004(u), §3004(v) or §3008(h) includes a storage, treatment or disposal activity that ordinarily requires a permit, such permit [6] must be obtained. While this requirement will undoubtedly retard the corrective action process, it is inescapable absent rulemaking relief.

It is important to remember that RCRA Subtitle C standards include a number of waivers and conditional exemptions which can be applied to contaminated media (just as they are applied to hazardous waste). For example, if air stripping of contaminated groundwater occurs in a wastewater treatment unit subject to §402 or §307(b) of the Clean Water Act, and the unit also meets the RCRA definition of a tank or tank system, the treatment would not require a RCRA permit (40 CFR §264.1(g)(6)). Furthermore, the air stripping operation would not be subject to the Subpart AA air emission standards standards [7] (55 FR 25456). As another example, 40 CFR §261.4(b)(10) exempts from the definition of hazardous waste petroleum-contaminated media and debris that fail the test for Toxicity Characteristic and are subject to corrective action regulations under 40 CFR Part 280. The user of this guidance is encouraged to take full advantage of these and all other RCRA waivers and exemptions to expedite corrective action.

VII. Decision Matrix for Management of Contaminated Media

A decision matrix has been provided to assist the user in making the correct regulatory decision for management of contaminated media. There are two key points to note when using the decision matrix. Contaminated

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6/ Depending on whether the facility already has permit or has interim status, a permit modification under 40 CFR §270.41 or 40 CFR §270.42, or change in interim status under 40 CFR §270.72 would be appropriate.

7/ Nevertheless, corrective action authorities should be used to ensure that the air emissions will not pose a threat to human health and the environment.

media which are themselves hazardous wastes (P- and U-listed wastes), and media which exhibit a hazardous waste characteristic or which "contain" a listed hazardous waste must be managed in accordance with Subtitle C regulations. Where documentation does not exist to confirm that the contamination source (or the medium of interest, in the case of P- and U-listed wastes) is a listed waste and the medium does not exhibit a hazardous waste characteristic, best management practices may be applied.

VIII. Relation to CERCLA Activities

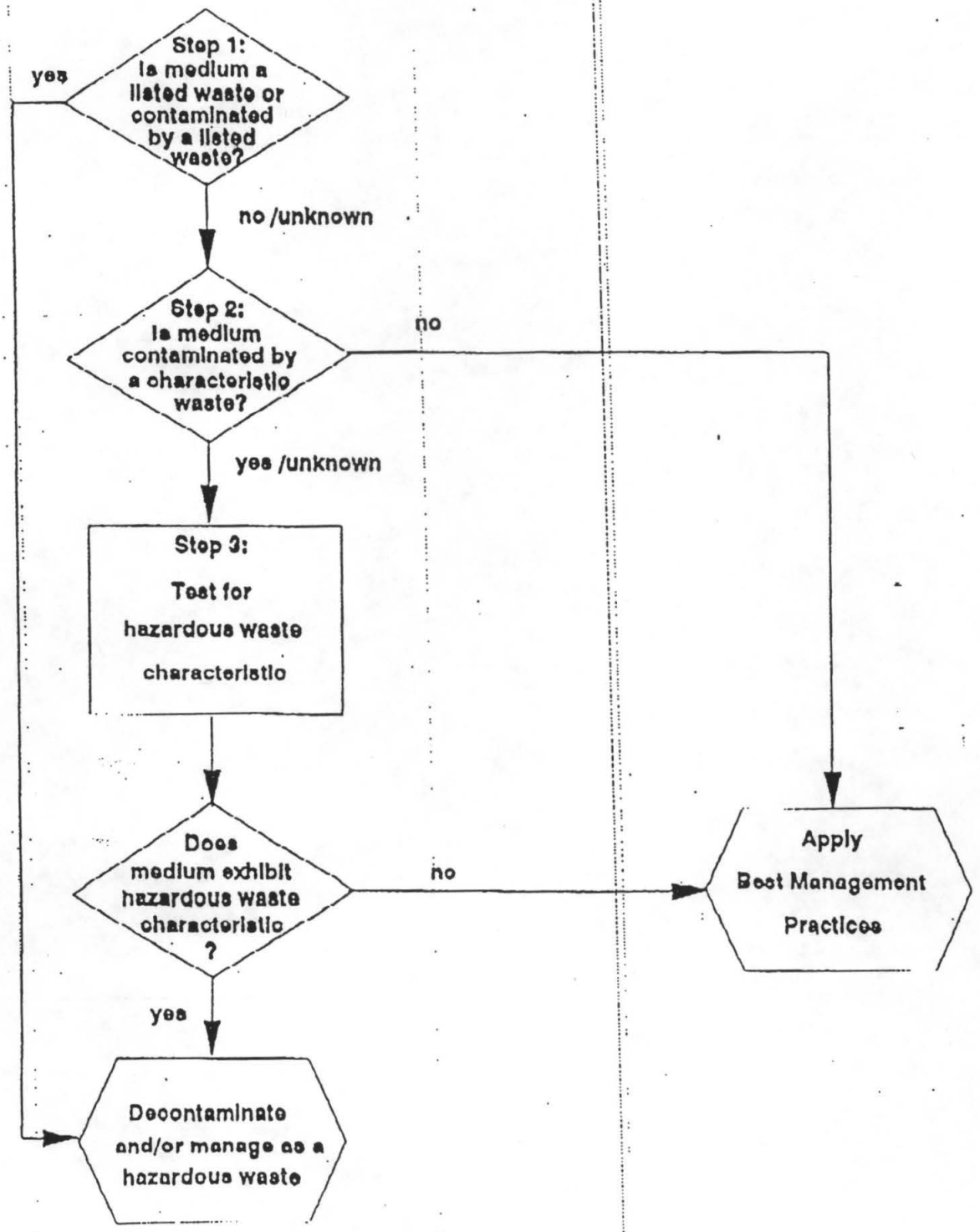
Contaminated environmental media may be generated or actively managed during CERCLA investigations, remedial actions and response actions. The National Contingency Plan (NCP) requires that for all remedial actions, the selected remedy must attain or exceed the applicable or relevant and appropriate requirements (ARARs) in environmental laws. It also requires removal actions to attain ARARs to the greatest extent practicable, considering the exigencies of the circumstances. This guidance is an interpretation of RCRA regulations and as such should be considered in evaluating ARARs for CERCLA activities.

When implementing this guidance into CERCLA activities, the user is encouraged to take full advantage of all waivers and exemptions provided under either RCRA or CERCLA. For example, CERCLA section 121(e) establishes that a RCRA permit is not required for any CERCLA removal and remedial actions conducted entirely on-site at NPL sites. OSWER Policy Directive #9522.00-2 extends this permit waiver authority to uncontrolled sites [8/] if the State has adopted equivalent language to CERCLA section 121(e).

In summary, this guidance represents an interpretation of RCRA regulations, directives and policy. Incorporation of this guidance into CERCLA activities should be evaluated similarly to any other RCRA ARAR.

8/ "Uncontrolled sites" are those hazardous waste sites which are being handled by the State's equivalent to the Superfund program.

DECISION MATRIX FOR MANAGING CONTAMINATED MEDIA



APPENDIX B

USEPA RISK-BASED CONCENTRATIONS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region III

841 Chestnut Street

Philadelphia, Pennsylvania 19107

April 30, 1996

SUBJECT: Risk-Based Concentration Table, January-June 1996

FROM: Roy L. Smith, Ph.D.
Office of RCRA
Technical & Program Support Branch (3HW70)

TO: RBC Table mailing list

Attached is the EPA Region III risk-based concentration (RBC) table, which we distribute semiannually to all interested parties.

Important Message

EPA Region III's Internet website now includes two versions of the RBC Table. (These can be found at http://www.epa.gov/reg3hwmd/riskmenu.htm?=Risk+Guidance. Once there, I suggest you set a bookmark to ease future access.) One version can be browsed on-line, and a second (identical) version in .ZIP format can be quickly downloaded. The cover memo and background information are also included in both formats.

We strongly encourage all RBC table users having Internet access to obtain the table electronically rather than on paper. In this way, users can access the most current RBC table immediately in a form that can be used directly for comparisons with data or risk estimates. This distribution method will also save hundreds of pounds of paper per year and cost substantially less.

Contents, Uses, and Limitations of the RBC Table

The table contains reference doses and carcinogenic potency slopes (obtained from IRIS through April 1, 1996, HEAST through May 1995, the EPA-NCEA Superfund Health Risk Technical Support Center, and other EPA sources) for nearly 600 chemicals. These toxicity constants have been combined with "standard" exposure scenarios to calculate RBCs--chemical concentrations corresponding to fixed levels of risk (*i.e.*, a hazard quotient of one, or lifetime cancer risk of 10-6, whichever occurs at a lower concentration) in water, air, fish tissue, and soil.

The RBC table also includes soil screening levels (SSLs) for protection of groundwater and air. Most SSLs were obtained directly from EPA/OSWER's proposed SSL guidance document, to which we have added some additional SSLs based on the same methodology. Sources of SSLs are noted in the table. SSLs incorporate the same exposure assumptions as RBCs, plus additional assumptions needed for inter-media extrapolation. SSLs are therefore distinct from RBCs, and should be used only in the framework proposed in the OSWER document (available from NTIS as document numbers 9355.4-1.

PB95-965530, or EPA540/R-94/105).

The Region III toxicologists use RBCs to screen sites not yet on the NPL, respond rapidly to citizen inquiries, and spot-check formal baseline risk assessments. The background materials provide the complete basis for all the calculations, with the intent of showing users exactly how the RBCs were developed. Simply put, RBCs are risk assessments run in reverse. For a single contaminant in a single medium, under standard default exposure assumptions, the RBC corresponds to the target risk or hazard quotient.

RBCs also have several important limitations. Specifically excluded from consideration are (1) transfers from soil to air and groundwater, and (2) cumulative risk from multiple contaminants or media. Also, the toxicity information in the table has been assembled by hand, and (despite extensive checking and years of use) may contain errors. It's advisable to cross-check before relying on any RfDs or CPSs in the table. If you find any errors, please send me a note.

Many users want to know if the risk-based concentrations can be used as valid no-action levels or cleanup levels, especially for soils. The answer is a bit complex. First, it is important to realize that the RBC table does not constitute regulation or guidance, and should not be viewed as a substitute for a site-specific risk assessment. For sites where:

1. A single medium is contaminated;

2. A single contaminant contributes nearly all of the health risk;

3. Volatilization or leaching of that contaminant from soil is expected not to be significant;

4. The exposure scenarios used in the RBC table are appropriate for the site;

5. The fixed risk levels used in the RBC table are appropriate for the site; and

6. Risk to ecological receptors is expected not to be significant;

the risk-based concentrations would probably be protective as no-action levels or cleanup goals. However, to the extent that a site deviates from this description, as most do, the RBCs would not necessarily be appropriate.

To summarize, the table should generally not be used to (1) set cleanup or no-action levels at CERCLA sites or RCRA Corrective Action sites, (2) substitute for EPA guidance for preparing baseline risk assessments, or (3) determine if a waste is hazardous under RCRA.

Answers to Frequently Asked Questions

To help you better understand the RBC table, here are answers to our most often-asked questions:

1. How can the age-adjusted inhalation factor (11.66) be less than the inhalation rate for either a child (12) or an adult (20)?

Age-adjusted factors are not intake rates, but rather partial calculations which have different units than intake rates do. The fact that these partial calculations have values similar to intake rates is really coincidental, an artifact of the similar magnitude of years of exposure and time-averaged body weight.

2. Why does arsenic appear in the RBC table separately as a carcinogen and a non- carcinogen, while other contaminants do not?

Arsenic is double-entered to ensure that the risk assessor realizes that non-carcinogenic concerns are significant for arsenic. Otherwise, one might be tempted to accept a 1e-4 risk (43 ppm in residential soil), when the oral reference dose would be exceeded at 23 ppm.

Also, EPA has a little-known risk management policy for arsenic (dating from 1988) that suggests that arsenic-related cancer risks of up to 1e-3 can be accepted because the cancers are squamous cell carcinomas with a low mortality rate. Thus, non-carcinogenic RBCs represent an important limitation on acceptable arsenic concentrations.

3. Many contaminants have no inhaled reference dose or carcinogenic potency slope in IRIS, yet these numbers appear in the RBC table with IRIS given as the source. Where did the numbers come from?

Most inhaled reference doses and potency slopes in the RBC table are converted from reference concentrations and unit risk values which do appear in IRIS. These conversions assume 70-kg persons inhaling 20 m**3/d. For example, the inhalation unit risk for arsenic (4.3e-3 risk per ug/m**3) is divided by 20 m**3/d and multiplied by 70 kg times 1000 ug/mg, yielding a CPSi of 15.1 risk per mg/kg/d.

4. Why does the RBC table base soil RBCs for cadmium and manganese on reference doses that apply only to drinking water?

The RBC table's use of the drinking water RfDs for cadmium and manganese reflects (1) the limited space available in the already-crowded table, and (2) the intended use of the table as a screening tool rather than a source of cleanup levels (thereby making false positives acceptable). For a formal risk assessment, Region III would use the food RfDs for soil ingestion.

At this time, only two substances (as far as we know) have distinct oral RfDs for water and food--cadmium and manganese. Adding the two food RfDs to the table would require an entire column, which would be about 99.9% blank. The table has become so crowded that it would be difficult to accommodate another column. Also, we've given this problem a relatively low priority because the table's primary purpose is to identify environmental problems needing further study. RBCs were never intended for uncritical use as cleanup levels, merely to identify potential problems which need a closer look.

5. What is the source of the child's inhalation rate of 12 m3/d?

The calculation comes from basic physiology. It's a scaling of the mass-specific 20 m3/d rate for adults from a body mass of 70 kg to 15 kg, using the two-thirds power of mass, as follows:

Let: IRcm = mass-specific child inhalation rate (m3/kg/d)

IRc = child inhalation rate (m3/d)

20 m3/d 70kg = 0.286 m3/kg/d (mass-specific adult inhalation rate)

0.286 m3/kg/d x (70**.67) = (IRcm) x (15**.67)

IRcm = (0.286) x (70**.67) (15**.67) = 0.286 x 2.807 = 0.803 m3/kg/d

http://www.epa.gov/reg3hwmd/risk/rbc961.htm

IRc = IRcm x 15kg = 0.803 m3/kg/d x 15kg = 12.04 m3/d

A short (but algebraically equivalent) way to do the conversion:

20 x (15 70)**.333 = 11.97 (different from, but actually more correct than, 12.04 because of rounding error in calculating by the long form).

6. Can the oral RfDs in the RBC table be applied to dermal exposure?

Not directly. EPA's Office of Research and Development is working on dermal RfDs for some substances, but has not yet produced any final values. When dermal RfDs do appear, they will undoubtedly be based on absorbed dose rather than administered dose. Oral RfDs are (usually) based on administered dose and therefore tacitly include a GI absorption factor. Thus, any use of oral RfDs in dermal risk calculations would have to involve removing this absorption factor.

*7. The exposure variables table in the RBC background document lists the averaging time for non-carcinogens as "ED*365". What does that mean?*

ED is exposure duration, in years, and '*' is the computer-ese symbol for multiplication. Multiplying ED by 365 simply converts the duration to days. In fact, the ED term is included in both the numerator and denominator of the RBC algorithms for non-cancer risk, canceling it altogether. We expressed the algorithm this way to allow users to realize this. The total exposure is really adjusted only by EF (days exposed per year) divided by 365. (Note that this explanation applies to non-carcinogenic risk only; for carcinogens, exposure is pro-rated over the number of days in a 70-year life span.)

8. Why is inorganic lead not included in the RBC table?

The reason that lead is missing from the RBC table is simple, and fundamental: EPA has no reference dose or potency slope for inorganic lead, so it wasn't possible to calculate risk-based concentrations. EPA considers lead a special case because:

(1) Lead is ubiquitous in all media, so human exposure comes from multiple sources. Comparing single-medium exposures with a reference dose would be misleading.

(2) If EPA did develop a reference dose for lead by the same methods other reference doses, we would probably find that most people already exceed it. Since EPA already knows this and is moving aggressively to lower lead releases nationally, such findings at individual sites would be irrelevant and unduly alarming.

(3) EPA decided to take a new approach to distinguish important lead exposures from trivial ones. EPA developed a computer model (the IEUBK model) which predicts children's blood lead concentrations using lead levels in various media as inputs. The idea is to evaluate a child's entire environment, and reduce lead exposures in the most cost-effective way.

On the practical side, there are several EPA policies on lead which effectively substitute for RBCs. The EPA Office of Solid Waste has released a detailed directive on risk assessment and cleanup of residential soil lead. The directive recommends that soil lead levels less than 400 ppm be considered safe for residential use. Above that level, the document suggests collecting certain types of data and modeling children's blood lead with the IEUBK model. For the purposes of the RBC table, the *de facto* residential

soil number would be 400 mg/kg. For water, we suggest 15 ppb (from the national EPA Action Level), and for air, the National Ambient Air Quality Standard.

9. Where did the potency slopes for carcinogenic PAHs come from?

The source of the potency slopes for PAHs is "Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons," Final Draft, EPA Environmental Criteria and Assessment Office, Cincinnati, OH. It's available from NTIS as document number ECAO-CIN-842 (March, 1993). The slopes are expressed in terms of order-of-magnitude equivalence factors relating the compounds to benzo[a]pyrene; we have converted these TEQs to potency slopes to fit the format of the table.

10. May I please have a copy of the January 1991 RBC table?

We're sorry, but no. The RBC table doesn't represent regulation or guidance, so past issues have no legal importance. Each time we update the table we destroy all obsolete copies, electronic and paper. We do this to ensure that only one set of RBCs, the one based on current information, exists at any time.

11. I've noticed that some soil RBCs are one million parts per million. Since some of these substances are liquids, that's obviously ridiculous. What is that basis for these calculations?

A soil RBC of one million parts per million means that no amount of the contaminant in soil will cause a receptor to exceed the oral reference dose by incidental ingestion of soil. In fact, some contaminants would have RBCs of more than one million ppm, but the algorithms cap concentrations at 100%. The reason we retain these admittedly impossible numbers is to let users see that the contaminant is not a threat via soil ingestion.

However, it's important to realize that the RBC calculations do not consider the potential of soil contaminants to leach to groundwater or escape to air by volatilization or dust entrainment. To consider these inter-media transfers, it's necessary to either monitor air and groundwater, or to use a mathematical model. Measured or modeled air and groundwater concentrations should then be compared to the RBCs for air and tap water.

We have begun to incorporate inter-media transfers into the RBC table in the form of soil screening levels (SSLs). However, EPA Headquarters has proposed only about a hundred SSLs so far, so the list is still rather short.

12. Please elaborate on the meaning of the 'W' source code in the table.

The "W" code means that a reference dose or potency slope for a contaminant is currently not present on either IRIS or HEAST, but that it once was present on either IRIS or HEAST and was removed. Such withdrawal usually indicates that consensus on the number no longer exists among EPA scientists, but not that EPA believes the contaminant to be unimportant. Older versions of the RBC table had separate codes for IRIS and HEAST withdrawals, but we changed to a single code for both because, after all, it hardly matters.

We retain withdrawn numbers in the table because we still need to deal with these contaminants during the sometimes very long delays before replacement numbers are ready. We take the position that for the purpose of screening an obsolete RBC is better than none at all. The 'W' code should serve as a clear warning that before making any serious decision involving that contaminant you will need to develop an interim value based on current scientific understanding.

http://www.epa.gov/reg3hwmd/risk/rbc961.htm

If you are assessing risks at a site where a major contaminant is coded "W," consider working with your Regional EPA risk assessor to develop a current toxicity constant. If the site is being studied under CERCLA, the EPA-NCEA Regional Technical Support group may be able to assist.

13. Can I get copies of supporting documents for interim toxicity constants which are coded "E" in the RBC table?

Unfortunately, Region 3 does not have a complete set of supporting documents. The EPA-NCEA Superfund Health Risk Technical Support Center prepares these interim toxicity constants in response to site-specific requests from Regional risk assessors, and sends the documentation only to the requestor. The RBC tables contain only the interim values (those with "E" codes) that we've either requested ourselves or otherwise obtained copies of. There may be many more interim values of which we are unaware. Also, we don't receive automatic updates when NCEA revisits a contaminant, so it's likely that some interim values in the RBC table are obsolete.

It has been NCEA's policy to deny requests for documentation of interim toxicity constants. Although Region 3 has sometimes provided this documentation on request, for the above-stated reasons we have no assurance that the assessments, or even the interim numbers, are current. We've decided to discontinue distributing information that may be misleading. If an "E"-coded contaminant is a major risk contributor at your site, we strongly suggest that you work with EPA to develop an up-to-date reference dose or slope factor.

Changes in This Issue of the RBC Table

New or revised EPA toxicity constants are now marked with "**" before the contaminant name. This is to help users quickly pick out substances with new RBCs. Formerly these contaminants were printed in underlined boldface type that copied badly. A new basis code, "M" for MCL, has been added to the upper right corner of each page. This code denotes soil screening levels for groundwater protection that are based on EPA Maximum Contaminant Levels.

If you want to raise issues or get answers to questions about the RBC table, please call the Technical Support Help Line at 215-597-1116. The line has a voice mail system to take your calls if we're not available. We'll return your call as soon as we can. Please limit calls to RBC issues; if you have a question about applying RBCs to a site, please call the EPA Regional office handling the project. Thanks for your help and cooperation, and we hope the RBC table continues to be a useful resource.

Risk-Based Co. .ration Table
January-June 1996
April 30, 1996

CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
Acephate	30560191	4.00E-03	I			8.70E-03	I			7.7	C	0.72	C	0.36	C	660	C	73
Acetaldehyde	75070			2.57E-03	I			7.70E-03	I	94	N	0.81	C					
Acetochlor	34256821	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Acetone	67641	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
Acetone cyanohydrin	75865	7.00E-02	H	4.00E-02	A					2600	N	150	N	95	N	140000	N	5500
Acetonitrile	75078	6.00E-03	I	1.43E-02	A					220	N	52	N	8.1	N	12000	N	470
Acetophenone	98862	1.00E-01	I	5.71E-06	W					x 0.042	N	0.021	N	140	N	200000	N	7800
Acifluorfen	62476599	1.30E-02	I							470	N	47	N	18	N	27000	N	1000
Acrolein	107028	2.00E-02	H	5.71E-06	I					730	N	0.021	N	27	N	41000	N	1600
Acrylamide	79061	2.00E-04	I			4.50E+00	I	4.55E+00	I	0.015	C	0.0014	C	0.0007	C	1.3	C	0.14
Acrylic acid	79107	5.00E-01	I	2.86E-04	I					18000	N	1	N	680	N	1000000	N	39000
Acrylonitrile	107131	1.00E-03	H	5.71E-04	I	5.40E-01	I	2.38E-01	I	0.12	C	0.026	C	0.0058	C	11	C	1.2
Alachlor	15972608	1.00E-02	I			8.00E-02	H			0.84	C	0.078	C	0.039	C	72	C	8
Alar	1596845	1.50E-01	I							5500	N	550	N	200	N	310000	N	12000
Aldicarb	116063	1.00E-03	I							37	N	3.7	N	1.4	N	2000	N	78
Aldicarb sulfone	1646884	1.00E-03	I							37	N	3.7	N	1.4	N	2000	N	78
Aldrin	309002	3.00E-05	I			1.70E+01	I	1.71E+01	I	0.004	C	0.00037	C	0.00019	C	0.34	C	0.038
Ally	74223646	2.50E-01	I							9100	N	910	N	340	N	510000	N	20000
Allyl alcohol	107186	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Allyl chloride	107051	5.00E-02	W	2.86E-04	I					1800	N	1	N	68	N	100000	N	3900
Aluminum	7429905	1.00E+00	E							37000	N	3700	N	1400	N	1000000	N	78000
Aluminum phosphide	20859738	4.00E-04	I							15	N	1.5	N	0.54	N	820	N	31
Amdro	67485294	3.00E-04	I							11	N	1.1	N	0.41	N	610	N	23
Ametryn	834128	9.00E-03	I							330	N	33	N	12	N	18000	N	700
m-Aminophenol	591275	7.00E-02	H							2600	N	260	N	95	N	140000	N	5500
4-Aminopyridine	504245	2.00E-05	H							0.73	N	0.073	N	0.027	N	41	N	1.6
Amitraz	33089611	2.50E-03	I							91	N	9.1	N	3.4	N	5100	N	200
Ammonia	7664417			2.86E-02	I					1000	N	100	N					
Ammonium sulfamate	7773060	2.00E-01	I							7300	N	730	N	270	N	410000	N	16000
Aniline	62533			2.86E-04	I	5.70E-03	I			10	N	1	N	0.55	C	1000	C	110
Antimony and compounds	7440360	4.00E-04	I							15	N	1.5	N	0.54	N	820	N	31
Antimony pentoxide	1314609	5.00E-04	H							18	N	1.8	N	0.68	N	1000	N	39
Antimony potassium tartrate	304610	9.00E-04	H							33	N	3.3	N	1.2	N	1800	N	70
Antimony tetroxide	1332316	4.00E-04	H							15	N	1.5	N	0.54	N	820	N	31
Antimony trioxide	1309644	4.00E-04	H							15	N	1.5	N	0.54	N	820	N	31
Apollo	74115245	1.30E-02	I							470	N	47	N	18	N	27000	N	1000
Aramite	140578	5.00E-02	H			2.50E-02	I	2.49E-02	I	2.7	C	0.25	C	0.13	C	230	C	26
Arsenic	7440382	3.00E-04	I							11	N	1.1	N	0.41	N	610	N	23
Arsenic (as carcinogen)	7440382					1.50E+00	I	1.51E+01	I	0.045	C	0.00041	C	0.0021	C	3.8	C	0.43
Arsine	7784421			1.43E-05	I					0.52	N	0.052	N					
Assure	76578148	9.00E-03	I							330	N	33	N	12	N	18000	N	700
Asulam	3337711	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
Atrazine	1912249	3.50E-02	I			2.22E-01	H			0.3	C	0.028	C	0.014	C	26	C	2.9
Avermectin B1	65195553	4.00E-04	I							15	N	1.5	N	0.54	N	820	N	31
Azobenzene	103333					1.10E-01	I	1.08E-01	I	0.61	C	0.058	C	0.029	C	52	C	5.8

Risk-Based Co... ...ration Table
January-June 1996
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CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
Barium and compounds	7440393	7.00E-02	I	1.43E-04	A					2600	N	0.52	N	95	N	140000	N	5500
Baygon	114261	4.00E-03	I							150	N	15	N	5.4	N	8200	N	310
Bayleton	43121433	3.00E-02	I							1100	N	110	N	41	N	61000	N	2300
Baythroid	68359375	2.50E-02	I							910	N	91	N	34	N	51000	N	2000
Benefin	1861401	3.00E-01	I							11000	N	1100	N	410	N	610000	N	23000
Benomyl	17804352	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
Bentazon	25057890	2.50E-03	I							91	N	9.1	N	3.4	N	5100	N	200
Benzaldehyde	100527	1.00E-01	I							x 610	N	370	N	140	N	200000	N	7800
Benzene	71432			1.71E-03	E	2.90E-02	I	2.90E-02	I	x 0.36	C	0.22	C	0.11	C	200	C	22
Benzenethiol	108985	1.00E-05	H							0.37	N	0.037	N	0.014	N	20	N	0.78
Benzidine	92875	3.00E-03	I			2.30E+02	I	2.35E+02	I	0.00029	C	0.000027	C	0.000014	C	0.025	C	0.0028
Benzoic acid	65850	4.00E+00	I							150000	N	15000	N	5400	N	1000000	N	310000
Benzotrichloride	98077					1.30E+01	I			0.0052	C	0.00048	C	0.00024	C	0.44	C	0.049
Benzyl alcohol	100516	3.00E-01	H							11000	N	1100	N	410	N	610000	N	23000
Benzyl chloride	100447					1.70E-01	I			x 0.062	C	0.037	C	0.019	C	34	C	3.8
Beryllium and compounds	7440417	5.00E-03	I			4.30E+00	I	8.40E+00	I	0.016	C	0.00075	C	0.00073	C	1.3	C	0.15
Bidrin	141662	1.00E-04	I							3.7	N	0.37	N	0.14	N	200	N	7.8
Biphenthrin (Talstar)	82657043	1.50E-02	I							550	N	55	N	20	N	31000	N	1200
1,1-Biphenyl	92524	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
Bis(2-chloroethyl)ether	111444					1.10E+00	I	1.16E+00	I	x 0.0092	C	0.0054	C	0.0029	C	5.2	C	0.58
Bis(2-chloroisopropyl)ether	39638329	4.00E-02	I			7.00E-02	H	3.50E-02	H	x 0.26	C	0.18	C	0.045	C	82	C	9.1
Bis(chloromethyl)ether	542881					2.20E+02	I	2.17E+02	I	x 0.000049	C	0.000029	C	0.000014	C	0.026	C	0.0029
Bis(2-chloro-1-methylethyl)ether						7.00E-02	W	7.00E-02	W	0.96	C	0.089	C	0.045	C	82	C	9.1
Bis(2-ethylhexyl)phthalate (DEHP)	117817	2.00E-02	I			1.40E-02	I			4.8	C	0.45	C	0.23	C	410	C	46
Bisphenol A	80057	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
Boron (and borates)	7440428	9.00E-02	I	5.71E-03	H					3300	N	21	N	120	N	180000	N	7000
Boron trifluoride	7637072			2.00E-04	H					7.3	N	0.73	N					
Bromodichloromethane	75274	2.00E-02	I			6.20E-02	I			x 0.17	C	0.1	C	0.051	C	92	C	10
Bromoethene	593602							1.10E-01	H	x 0.096	C	0.057	C					
Bromoform (tribromomethane)	75252	2.00E-02	I			7.90E-03	I	3.85E-03	I	x 2.4	C	1.6	C	0.4	C	720	C	81
Bromomethane	74839	1.40E-03	I	1.43E-03	I					x 8.7	N	5.2	N	1.9	N	2900	N	110
4-Bromophenyl phenyl ether	101553	5.80E-02	O							2100	N	210	N	78	N	120000	N	4500
Bromophos	2104963	5.00E-03	H							180	N	18	N	6.8	N	10000	N	390
Bromoxynil	1689845	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Bromoxynil octanoate	1689992	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
1,3-Butadiene	106990							9.80E-01	I	x 0.011	C	0.0064	C					
1-Butanol	71363	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
Butyl benzyl phthalate	85687	2.00E-01	I							7300	N	730	N	270	N	410000	N	16000
Butylate	2008415	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
sec-Butylbenzene	135988	1.00E-02	E							x 61	N	37	N	14	N	20000	N	780
tert-Butylbenzene	104518	1.00E-02	E							x 61	N	37	N	14	N	20000	N	780
Butylphthalyl butylglycolate	85701	1.00E+00	I							37000	N	3700	N	1400	N	1000000	N	78000
Cacodylic acid	75605	3.00E-03	H							110	N	11	N	4.1	N	6100	N	230
Cadmium and compounds	7440439	5.00E-04	I	5.71E-05	E			6.30E+00	I	18	N	0.00099	C	0.68	N	1000	N	39
Caprolactam	105602	5.00E-01	I							18000	N	1800	N	680	N	1000000	N	39000

Risk-Based Co. .ration Table
January-June 1996
April 30, 1996

CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
Captafol	2425061	2.00E-03	I			8.60E-03	H			7.8	C	0.73	C	0.37	C	670	C	74
Captan	133062	1.30E-01	I			3.50E-03	H			19	C	1.8	C	0.9	C	1600	C	180
Carbaryl	63252	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
Carbofuran	1563662	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Carbon disulfide	75150	1.00E-01	I	2.00E-01	I					x 1000	N	730	N	140	N	200000	N	7800
Carbon tetrachloride	56235	7.00E-04	I	5.71E-04	E	1.30E-01	I	5.25E-02	I	x 0.16	C	0.12	C	0.024	C	44	C	4.9
Carbosulfan	55285148	1.00E-02	I							370	N	37	N	14	N	20000	N	780
Carboxin	5234684	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
Chloral	75876	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
Chloramben	133904	1.50E-02	I							550	N	55	N	20	N	31000	N	1200
Chloranil	118752					4.03E-01	H			0.17	C	0.016	C	0.0078	C	14	C	1.6
Chlordane	57749	6.00E-05	I			1.30E+00	I	1.29E+00	I	0.052	C	0.0049	C	0.0024	C	4.4	C	0.49
Chlorimuron-ethyl	90982324	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Chlorine	7782505	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
Chlorine dioxide	10049044			5.71E-05	I					2.1	N	0.21	N					
Chloroacetaldehyde	107200	6.90E-03	O							250	N	25	N	9.3	N	14000	N	540
Chloroacetic acid	79118	2.00E-03	H							73	N	7.3	N	2.7	N	4100	N	160
2-Chloroacetophenone	532274			8.57E-06	I					0.31	N	0.031	N					
4-Chloroaniline	106478	4.00E-03	I							150	N	15	N	5.4	N	8200	N	310
Chlorobenzene	108907	2.00E-02	I	5.71E-03	A					x 39	N	21	N	27	N	41000	N	1600
Chlorobenzilate	510156	2.00E-02	I			2.70E-01	H	2.70E-01	H	0.25	C	0.023	C	0.012	C	21	C	2.4
p-Chlorobenzoic acid	74113	2.00E-01	H							7300	N	730	N	270	N	410000	N	16000
4-Chlorobenzotrifluoride	98566	2.00E-02	H							730	N	73	N	27	N	41000	N	1600
2-Chloro-1,3-butadiene	126998	2.00E-02	A	2.00E-03	H					x 14	N	7.3	N	27	N	41000	N	1600
1-Chlorobutane	109693	4.00E-01	H							x 2400	N	1500	N	540	N	820000	N	31000
Chlorodibromomethane	124481	2.00E-02	I			8.40E-02	I			x 0.13	C	0.075	C	0.038	C	68	C	7.6
1-Chloro-1,1-difluoroethane	75683		I	1.43E+01						x 87000	N	52000	N					
Chlorodifluoromethane	75456			1.43E+01	I					x 87000	N	52000	N					
Chloroethane	75003	4.00E-01	E	2.86E+00	I					x 8600	N	10000	N	540	N	820000	N	31000
2-Chloroethyl vinyl ether	110758	2.50E-02	O							x 150	N	91	N	34	N	51000	N	2000
Chloroform	67663	1.00E-02	I			6.10E-03	I	8.05E-02	I	x 0.15	C	0.078	C	0.52	C	940	C	100
Chloromethane	74873					1.30E-02	H	6.30E-03	H	x 1.4	C	0.99	C	0.24	C	440	C	49
4-Chloro-2,2-methylaniline hydrochloride	3165933					4.60E-01	H			0.15	C	0.014	C	0.0069	C	12	C	1.4
4-Chloro-2-methylaniline	95692					5.80E-01	H			0.12	C	0.011	C	0.0054	C	9.9	C	1.1
beta-Chloronaphthalene	91587	8.00E-02	I							2900	N	290	N	110	N	160000	N	6300
o-Chloronitrobenzene	88733					2.50E-02	H			x 0.42	C	0.25	C	0.13	C	230	C	26
p-Chloronitrobenzene	100005					1.80E-02	H			x 0.59	C	0.35	C	0.18	C	320	C	35
2-Chlorophenol	95578	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
2-Chloropropane	75296			2.86E-02	H					x 170	N	100	N					
Chlorothalonil	1897456	1.50E-02	I			1.10E-02	H			6.1	C	0.57	C	0.29	C	520	C	58
o-Chlorotoluene	95498	2.00E-02	I							x 120	N	73	N	27	N	41000	N	1600
Chlorpropham	101213	2.00E-01	I							7300	N	730	N	270	N	410000	N	16000
Chlorpyrifos	2921882	3.00E-03	I							110	N	11	N	4.1	N	6100	N	230
Chlorpyrifos-methyl	5598130	1.00E-02	H							370	N	37	N	14	N	20000	N	780
Chlorsulfuron	64902723	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900

CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
Chlorthiophos	60238564	8.00E-04	H							29	N	2.9	N	1.1	N	1600	N	63
Chromium III and compounds	16065831	1.00E+00	I	5.71E-07	W					37000	N	0.0021	N	1400	N	1000000	N	78000
Chromium VI and compounds	18540299	5.00E-03	I					4.20E+01	I	180	N	0.00015	C	6.8	N	10000	N	390
Coal tar	8001589							2.20E+00	W			0.0028	C					
Cobalt	7440484	6.00E-02	E							2200	N	220	N	81	N	120000	N	4700
Coke Oven Emissions	8007452							2.17E+00	I			0.0029	C					
Copper and compounds	7440508	4.00E-02	E							1500	N	150	N	54	N	82000	N	3100
Crotonaldehyde	123739	1.00E-02	W			1.90E+00	H	1.90E+00	W	0.035	C	0.0033	C	0.0017	C	3	C	0.34
Cumene	98828	4.00E-02	I	2.57E-03	H					1500	N	9.4	N	54	N	82000	N	3100
Cyanides:																		
Barium cyanide	542621	1.00E-01	W							3700	N	370	N	140	N	200000	N	7800
Calcium cyanide	592018	4.00E-02	I							1500	N	150	N	54	N	82000	N	3100
Copper cyanide	544923	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Cyanazine	21725462	2.00E-03	H			8.40E-01	H			0.08	C	0.0075	C	0.0038	C	6.8	C	0.76
Cyanogen	460195	4.00E-02	I							1500	N	150	N	54	N	82000	N	3100
Cyanogen bromide	506683	9.00E-02	I							3300	N	330	N	120	N	180000	N	7000
Cyanogen chloride	506774	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
Free cyanide	57125	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Hydrogen cyanide	74908	2.00E-02	I	8.57E-04	I					730	N	3.1	N	27	N	41000	N	1600
Potassium cyanide	151508	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
Potassium silver cyanide	506616	2.00E-01	I							7300	N	730	N	270	N	410000	N	16000
Silver cyanide	506649	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
Sodium cyanide	143339	4.00E-02	I							1500	N	150	N	54	N	82000	N	3100
Thiocyanate		2.00E-02	E							730	N	73	N	27	N	41000	N	1600
Zinc cyanide	557211	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
Cyclohexanone	108941	5.00E+00	I							x 30000	N	18000	N	6800	N	1000000	N	390000
Cyclohexlamine	108918	2.00E-01	I							7300	N	730	N	270	N	410000	N	16000
Cyhalothrin/Karate	68085858	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Cypermethrin	52315078	1.00E-02	I							370	N	37	N	14	N	20000	N	780
Cyromazine	66215278	7.50E-03	I							270	N	27	N	10	N	15000	N	590
Dacthal	1861321	1.00E-02	I							370	N	37	N	14	N	20000	N	780
Dalapon	75990	3.00E-02	I							1100	N	110	N	41	N	61000	N	2300
Danitol	39515418	2.50E-02	I							910	N	91	N	34	N	51000	N	2000
DDD	72548					2.40E-01	I			0.28	C	0.026	C	0.013	C	24	C	2.7
DDE	72559					3.40E-01	I			0.2	C	0.018	C	0.0093	C	17	C	1.9
DDT	50293	5.00E-04	I			3.40E-01	I	3.40E-01	I	0.2	C	0.018	C	0.0093	C	17	C	1.9
Decabromodiphenyl ether	1163195	1.00E-02	I							x 61	N	37	N	14	N	20000	N	780
Demeton	8065483	4.00E-05	I							1.5	N	0.15	N	0.054	N	82	N	3.1
Diallate	2303164					6.10E-02	H			x 0.17	C	0.1	C	0.052	C	94	C	10
Diazinon	333415	9.00E-04	H							33	N	3.3	N	1.2	N	1800	N	70
Dibenzofuran	132649	4.00E-03	E							150	N	15	N	5.4	N	8200	N	310
1,4-Dibromobenzene	106376	1.00E-02	I							x 61	N	37	N	14	N	20000	N	780
1,2-Dibromo-3-chloropropane	96128			5.71E-05	I	1.40E+00	H	2.42E-03	H	x 0.048	C	0.21	N	0.0023	C	4.1	C	0.46
1,2-Dibromoethane	106934			5.71E-05	H	8.50E+01	I	7.70E-01	I	x 0.00075	C	0.0081	C	0.000037	C	0.067	C	0.0075
Dibutyl phthalate	84742	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800

CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
Dicamba	1918009	3.00E-02	I							1100	N	110	N	41	N	61000	N	2300
1,2-Dichlorobenzene	95501	9.00E-02	I	4.00E-02	A					x 270	N	150	N	120	N	180000	N	7000
1,3-Dichlorobenzene	541731	8.90E-02	O							x 540	N	320	N	120	N	180000	N	7000
1,4-Dichlorobenzene	106467			2.29E-01	I	2.40E-02	H			x 0.44	C	0.26	C	0.13	C	240	C	27
3,3'-Dichlorobenzidine	91941					4.50E-01	I			0.15	C	0.014	C	0.007	C	13	C	1.4
1,4-Dichloro-2-butene	764410							9.30E+00	H	x 0.0011	C	0.00067	C					
Dichlorodifluoromethane	75718	2.00E-01	I	5.71E-02	A					x 390	N	210	N	270	N	410000	N	16000
1,1-Dichloroethane	75343	1.00E-01	H	1.43E-01	A					x 810	N	520	N	140	N	200000	N	7800
1,2-Dichloroethane (EDC)	107062			2.86E-03	E	9.10E-02	I	9.10E-02	I	x 0.12	C	0.069	C	0.035	C	63	C	7
1,1-Dichloroethylene	75354	9.00E-03	I			6.00E-01	I	1.75E-01	I	x 0.044	C	0.036	C	0.0053	C	9.5	C	1.1
1,2-Dichloroethylene (cis)	156592	1.00E-02	H							x 61	N	37	N	14	N	20000	N	780
1,2-Dichloroethylene (trans)	156605	2.00E-02	I							x 120	N	73	N	27	N	41000	N	1600
1,2-Dichloroethylene (mixture)	540590	9.00E-03	H							x 55	N	33	N	12	N	18000	N	700
2,4-Dichlorophenol	120832	3.00E-03	I							110	N	11	N	4.1	N	6100	N	230
2,4-Dichlorophenoxyacetic Acid (2,4-D)	94757	1.00E-02	I							x 61	N	37	N	14	N	20000	N	780
4-(2,4-Dichlorophenoxy)butyric Acid	94826	8.00E-03	I							290	N	29	N	11	N	16000	N	630
1,2-Dichloropropane	78875			1.14E-03	I	6.80E-02	H			x 0.16	C	0.092	C	0.046	C	84	C	9.4
2,3-Dichloropropanol	616239	3.00E-03	I							110	N	11	N	4.1	N	6100	N	230
1,3-Dichloropropene	542756	3.00E-04	I	5.71E-03	I	1.75E-01	H	1.30E-01	H	x 0.077	C	0.048	C	0.018	C	33	C	3.7
Dichlorvos	62737	5.00E-04	I	1.43E-04	I	2.90E-01	I			0.23	C	0.022	C	0.011	C	20	C	2.2
Dicofol	115322					4.40E-01	W			0.15	C	0.014	C	0.0072	C	13	C	1.5
Dicyclopentadiene	77736	3.00E-02	H	5.71E-05	A					x 0.42	N	0.21	N	41	N	61000	N	2300
Dieldrin	60571	5.00E-05	I			1.60E+01	I	1.61E+01	I	0.0042	C	0.00039	C	0.0002	C	0.36	C	0.04
Diesel emissions				1.43E-03	I					52	N	5.2	N					
Diethyl phthalate	84662	8.00E-01	I							29000	N	2900	N	1100	N	1000000	N	63000
Diethylene glycol, monobutyl ether	112345			5.71E-03	H					210	N	21	N					
Diethylene glycol, monoethyl ether	111900	2.00E+00	H							73000	N	7300	N	2700	N	1000000	N	160000
Diethylforamide	617845	1.10E-02	H							400	N	40	N	15	N	22000	N	860
Di(2-ethylhexyl)adipate	103231	6.00E-01	I			1.20E-03	I			56	C	5.2	C	2.6	C	4800	C	530
Diethylstilbestrol	56531					4.70E+03	H			0.000014	C	1.30E-06	C	7.00E-07	C	0.0012	C	0.00014
Difenzoquat (Avenge)	43222486	8.00E-02	I							2900	N	290	N	110	N	160000	N	6300
Diflubenzuron	35367385	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
1,1-Difluoroethane	75376			1.14E+01	I					x 69000	N	42000	N					
Diisopropyl methylphosphonate (DIMP)	1445756	8.00E-02	I							2900	N	290	N	110	N	160000	N	6300
Dimethipin	55290647	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Dimethoate	60515	2.00E-04	I							7.3	N	0.73	N	0.27	N	410	N	16
3,3'-Dimethoxybenzidine	119904					1.40E-02	H			4.8	C	0.45	C	0.23	C	410	C	46
Dimethylamine	124403			5.71E-06	W					0.21	N	0.021	N					
2,4-Dimethylaniline hydrochloride	21436964					5.80E-01	H			0.12	C	0.011	C	0.0054	C	9.9	C	1.1
2,4-Dimethylaniline	95681					7.50E-01	H			0.09	C	0.0083	C	0.0042	C	7.6	C	0.85
N-N-Dimethylaniline	121697	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
3,3'-Dimethylbenzidine	119937					9.20E+00	H			0.0073	C	0.00068	C	0.00034	C	0.62	C	0.069
N,N-Dimethylformamide	68122	1.00E-01	H	8.57E-03	I					3700	N	31	N	140	N	200000	N	7800
1,1-Dimethylhydrazine	57147					2.60E+00	W	3.50E+00	W	0.026	C	0.0018	C	0.0012	C	2.2	C	0.25
1,2-Dimethylhydrazine	540738					3.70E+01	W	3.70E+01	W	0.0018	C	0.00017	C	0.000085	C	0.15	C	0.017

CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
2,4-Dimethylphenol	105679	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
2,6-Dimethylphenol	576261	6.00E-04	I							22	N	2.2	N	0.81	N	1200	N	47
3,4-Dimethylphenol	95658	1.00E-03	I							37	N	3.7	N	1.4	N	2000	N	78
Dimethyl phthalate	131113	1.00E+01	H							370000	N	37000	N	14000	N	1000000	N	780000
Dimethyl terephthalate	120616	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
1,2-Dinitrobenzene	528290	4.00E-04	H							15	N	1.5	N	0.54	N	820	N	31
1,3-Dinitrobenzene	99650	1.00E-04	I							3.7	N	0.37	N	0.14	N	200	N	7.8
1,4-Dinitrobenzene	100254	4.00E-04	H							15	N	1.5	N	0.54	N	820	N	31
4,6-Dinitro-o-cyclohexyl phenol	131895	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
2,4-Dinitrophenol	51285	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
Dinitrotoluene mixture						6.80E-01	I			0.099	C	0.0092	C	0.0046	C	8.4	C	0.94
2,4-Dinitrotoluene	121142	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
2,6-Dinitrotoluene	606202	1.00E-03	H							37	N	3.7	N	1.4	N	2000	N	78
Dinoseb	88857	1.00E-03	I							37	N	3.7	N	1.4	N	2000	N	78
di-n-Octyl phthalate	117840	2.00E-02	H							730	N	73	N	27	N	41000	N	1600
1,4-Dioxane	123911					1.10E-02	I			6.1	C	0.57	C	0.29	C	520	C	58
Diphenamid	957517	3.00E-02	I							1100	N	110	N	41	N	61000	N	2300
Diphenylamine	122394	2.50E-02	I							910	N	91	N	34	N	51000	N	2000
1,2-Diphenylhydrazine	122667					8.00E-01	I	7.70E-01	I	0.084	C	0.0081	C	0.0039	C	7.2	C	0.8
Diquat	85007	2.20E-03	I							80	N	8	N	3	N	4500	N	170
Direct black 38	1937377					8.60E+00	H			0.0078	C	0.00073	C	0.00037	C	0.67	C	0.074
Direct blue 6	2602462					8.10E+00	H			0.0083	C	0.00077	C	0.00039	C	0.71	C	0.079
Direct brown 95	16071866					9.30E+00	H			0.0072	C	0.00067	C	0.00034	C	0.62	C	0.069
Disulfoton	298044	4.00E-05	I							1.5	N	0.15	N	0.054	N	82	N	3.1
1,4-Dithiane	505293	1.00E-02	I							370	N	37	N	14	N	20000	N	780
Diuron	330541	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
Dodine	2439103	4.00E-03	I							150	N	15	N	5.4	N	8200	N	310
Endosulfan	115297	6.00E-03	I							220	N	22	N	8.1	N	12000	N	470
Endothall	145733	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Endrin	72208	3.00E-04	I							11	N	1.1	N	0.41	N	610	N	23
Epichlorohydrin	106898	2.00E-03	H	2.86E-04	I	9.90E-03	I	4.20E-03	I	6.8	C	1	N	0.32	C	580	C	65
1,2-Epoxybutane	106887			5.71E-03	I					210	N	21	N					
Ethephon (2-chloroethyl phosphonic acid)	16672870	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Ethion	563122	5.00E-04	I							18	N	1.8	N	0.68	N	1000	N	39
2-Ethoxyethanol acetate	111159	3.00E-01	A							11000	N	1100	N	410	N	610000	N	23000
2-Ethoxyethanol	110805	4.00E-01	H	5.71E-02	I					15000	N	210	N	540	N	820000	N	31000
Ethyl acrylate	140885					4.80E-02	H			1.4	C	0.13	C	0.066	C	120	C	13
EPTC (S-Ethyl dipropylthiocarbamate)	759944	2.50E-02	I							910	N	91	N	34	N	51000	N	2000
Ethyl acetate	141786	9.00E-01	I							33000	N	3300	N	1200	N	1000000	N	70000
Ethylbenzene	100414	1.00E-01	I	2.86E-01	I					x 1300	N	1000	N	140	N	200000	N	7800
Ethylene cyanohydrin	109784	3.00E-01	H							11000	N	1100	N	410	N	610000	N	23000
Ethylene diamine	107153	2.00E-02	H							730	N	73	N	27	N	41000	N	1600
Ethylene glycol	107211	2.00E+00	I							73000	N	7300	N	2700	N	1000000	N	160000
Ethylene glycol, monobutyl ether	111762			5.71E-03	H					210	N	21	N					
Ethylene oxide	75218					1.02E+00	H	3.50E-01	H	0.066	C	0.018	C	0.0031	C	5.6	C	0.63

Risk-Based Co ration Table
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CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
Ethylene thiourea (ETU)	96457	8.00E-05	I			1.19E-01	H			0.57	C	0.053	C	0.027	C	48	C	5.4
Ethyl ether	60297	2.00E-01	I							x 1200	N	730	N	270	N	410000	N	16000
Ethyl methacrylate	97632	9.00E-02	H							3300	N	330	N	120	N	180000	N	7000
Ethyl p-nitrophenyl phenylphosphorothioate	2104645	1.00E-05	I							0.37	N	0.037	N	0.014	N	20	N	0.78
Ethylnitrosourea	759739					1.40E+02	W			0.00048	C	0.000045	C	0.000023	C	0.041	C	0.0046
Ethylphthalyl ethyl glycolate	84720	3.00E+00	I							110000	N	11000	N	4100	N	1000000	N	230000
Express	10120	8.00E-03	I							290	N	29	N	11	N	16000	N	630
Fenamiphos	22224926	2.50E-04	I							9.1	N	0.91	N	0.34	N	510	N	20
Fluometuron	2164172	1.30E-02	I							470	N	47	N	18	N	27000	N	1000
Fluoride	7782414	6.00E-02	I							2200	N	220	N	81	N	120000	N	4700
Fluoridone	59756604	8.00E-02	I							2900	N	290	N	110	N	160000	N	6300
Flurprimidol	56425913	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Flutolanil	66332965	6.00E-02	I							2200	N	220	N	81	N	120000	N	4700
Fluvalinate	69409945	1.00E-02	I							370	N	37	N	14	N	20000	N	780
Folpet	133073	1.00E-01	I			3.50E-03	I			19	C	1.8	C	0.9	C	1600	C	180
Fomesafen	72178020					1.90E-01	I			0.35	C	0.033	C	0.017	C	30	C	3.4
Fonofos	944229	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
Formaldehyde	50000	2.00E-01	I					4.55E-02	I	7300	N	0.14	C	270	N	410000	N	16000
Formic Acid	64186	2.00E+00	H							73000	N	7300	N	2700	N	1000000	N	160000
Fosetyl-al	39148248	3.00E+00	I							110000	N	11000	N	4100	N	1000000	N	230000
Furan	110009	1.00E-03	I							37	N	3.7	N	1.4	N	2000	N	78
Furazolidone	67458					3.80E+00	H			0.018	C	0.0016	C	0.00083	C	1.5	C	0.17
Furfural	98011	3.00E-03	I	1.43E-02	A					110	N	52	N	4.1	N	6100	N	230
Furium	531828					5.00E+01	H			0.0013	C	0.00013	C	0.000063	C	0.11	C	0.013
Furmecyclox	60568050					3.00E-02	I			2.2	C	0.21	C	0.11	C	190	C	21
Glufosinate-ammonium	77182822	4.00E-04	I							15	N	1.5	N	0.54	N	820	N	31
Glycidaldehyde	765344	4.00E-04	I	2.86E-04	H					15	N	1	N	0.54	N	820	N	31
Glyphosate	1071836	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
Haloxyfop-methyl	69806402	5.00E-05	I							1.8	N	0.18	N	0.068	N	100	N	3.9
Harmony	79277273	1.30E-02	I							470	N	47	N	18	N	27000	N	1000
HCH (alpha)	319846					6.30E+00	I	6.30E+00	I	0.011	C	0.00099	C	0.0005	C	0.91	C	0.1
HCH (beta)	319857					1.80E+00	I	1.80E+00	I	0.037	C	0.0035	C	0.0018	C	3.2	C	0.35
HCH (gamma) Lindane	58899	3.00E-04	I			1.30E+00	H			0.052	C	0.0048	C	0.0024	C	4.4	C	0.49
HCH-technical	608731					1.80E+00	I	1.79E+00	I	0.037	C	0.0035	C	0.0018	C	3.2	C	0.35
Heptachlor	76448	5.00E-04	I			4.50E+00	I	4.55E+00	I	x 0.0023	C	0.0014	C	0.0007	C	1.3	C	0.14
Heptachlor epoxide	1024573	1.30E-05	I			9.10E+00	I	9.10E+00	I	x 0.0012	C	0.00069	C	0.00035	C	0.63	C	0.07
Hexabromobenzene	87821	2.00E-03	I							x 12	N	7.3	N	2.7	N	4100	N	160
Hexachlorobenzene	118741	8.00E-04	I			1.60E+00	I	1.61E+00	I	x 0.0066	C	0.0039	C	0.002	C	3.6	C	0.4
Hexachlorobutadiene	87683	2.00E-04	H			7.80E-02	I	7.70E-02	I	x 0.14	C	0.081	C	0.04	C	73	C	8.2
Hexachlorocyclopentadiene	77474	7.00E-03	I	2.00E-05	H					x 0.15	N	0.073	N	9.5	N	14000	N	550
Hexachlorodibenzo-p-dioxin mixture	19408743					6.20E+03	I	4.55E+03	I	0.000011	C	1.40E-06	C	5.00E-07	C	0.00092	C	0.0001
Hexachloroethane	67721	1.00E-03	I			1.40E-02	I	1.40E-02	I	x 0.75	C	0.45	C	0.23	C	410	C	46
Hexachlorophene	70304	3.00E-04	I							11	N	1.1	N	0.41	N	610	N	23
Hexahydro-1,3,5-trinitro-1,3,5-triazine	121824	3.00E-03	I			1.10E-01	I			0.61	C	0.057	C	0.029	C	52	C	5.8
1,6-Hexamethylene diisocyanate	822060			2.86E-06	I					0.1	N	0.01	N					

Risk-Based Co. .ration Table
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CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
n-Hexane	110543	6.00E-02	H	5.71E-02	I					x 350	N	210	N	81	N	120000	N	4700
Hexazinone	51235042	3.30E-02	I							1200	N	120	N	45	N	67000	N	2600
Hydrazine, hydrazine sulfate	302012					3.00E+00	I	1.71E+01	I	0.022	C	0.00037	C	0.0011	C	1.9	C	0.21
Hydrogen chloride	7647010			5.71E-03	I					210	N	21	N					
Hydrogen sulfide	7783064	3.00E-03	I	2.85E-04	I					110	N	1	N	4.1	N	6100	N	230
Hydroquinone	123319	4.00E-02	H							1500	N	150	N	54	N	82000	N	3100
Imazalil	35554440	1.30E-02	I							470	N	47	N	18	N	27000	N	1000
Imazaquin	81335377	2.50E-01	I							9100	N	910	N	340	N	510000	N	20000
Iprodione	36734197	4.00E-02	I							1500	N	150	N	54	N	82000	N	3100
Iron	7439896	3.00E-01	E							11000	N	1100	N	410	N	610000	N	23000
Isobutanol	78831	3.00E-01	I							x 1800	N	1100	N	410	N	610000	N	23000
Isophorone	78591	2.00E-01	I			9.50E-04	I			71	C	6.6	C	3.3	C	6000	C	670
Isopropalin	33820530	1.50E-02	I							550	N	55	N	20	N	31000	N	1200
Isopropyl methyl phosphonic acid	1832548	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
Isoxaben	82558507	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
Kepone	143500					1.80E+01	E			0.0037	C	0.00035	C	0.00018	C	0.32	C	0.035
Lactofen	77501634	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
Linuron	330552	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
Lithium	7439932	2.00E-02	E							730	N	73	N	27	N	41000	N	1600
Londax	83056996	2.00E-01	I							7300	N	730	N	270	N	410000	N	16000
Malathion	121755	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Maleic anhydride	108316	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
Maleic hydrazide	123331	5.00E-01	I							18000	N	1800	N	680	N	1000000	N	39000
Malononitrile	109773	2.00E-05	H							0.73	N	0.073	N	0.027	N	41	N	1.6
Mancozeb	8018017	3.00E-02	H							1100	N	110	N	41	N	61000	N	2300
Maneb	12427382	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Manganese and compounds	7439965	5.00E-03	I	1.43E-05	I					180	N	0.052	N	6.8	N	10000	N	390
Mephosfolan	950107	9.00E-05	H							3.3	N	0.33	N	0.12	N	180	N	7
Mepiquat chloride	24307264	3.00E-02	I							1100	N	110	N	41	N	61000	N	2300
Mercuric chloride	7487947	3.00E-04	I							11	N	1.1	N	0.41	N	610	N	23
Mercury (inorganic)	7439976	3.00E-04	H	8.57E-05	H					11	N	0.31	N	0.41	N	610	N	23
Mercury (methyl)	22967926	1.00E-04	I							3.7	N	0.37	N	0.14	N	200	N	7.8
Merphos	150505	3.00E-05	I							1.1	N	0.11	N	0.041	N	61	N	2.3
Merphos oxide	78488	3.00E-05	I							1.1	N	0.11	N	0.041	N	61	N	2.3
Metalaxyl	57837191	6.00E-02	I							2200	N	220	N	81	N	120000	N	4700
Methacrylonitrile	126987	1.00E-04	I	2.00E-04	A					3.7	N	0.73	N	0.14	N	200	N	7.8
Methamidophos	10265926	5.00E-05	I							1.8	N	0.18	N	0.068	N	100	N	3.9
Methanol	67561	5.00E-01	I							18000	N	1800	N	680	N	1000000	N	39000
Methidathion	950378	1.00E-03	I							37	N	3.7	N	1.4	N	2000	N	78
Methomyl	16752775	2.50E-02	I							910	N	91	N	34	N	51000	N	2000
Methoxychlor	72435	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
2-Methoxyethanol acetate	110496	2.00E-03	A							73	N	7.3	N	2.7	N	4100	N	160
2-Methoxyethanol	109864	1.00E-03	H	5.71E-03	I					37	N	21	N	1.4	N	2000	N	78
2-Methoxy-5-nitroaniline	99592					4.60E-02	H			1.5	C	0.14	C	0.069	C	120	C	14
Methyl acetate	79209	1.00E+00	H							37000	N	3700	N	1400	N	1000000	N	78000

CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
Methyl acrylate	96333	3.00E-02	A							1100	N	110	N	41	N	61000	N	2300
2-Methylaniline hydrochloride	636215					1.80E-01	H			0.37	C	0.035	C	0.018	C	32	C	3.5
2-Methylaniline	95534					2.40E-01	H			0.28	C	0.026	C	0.013	C	24	C	2.7
Methyl chlorocarbonate	79221	1.00E+00	W							37000	N	3700	N	1400	N	1000000	N	78000
4-(2-Methyl-4-chlorophenoxy) butyric acid	94815	1.00E-02	I							370	N	37	N	14	N	20000	N	780
2-Methyl-4-chlorophenoxyacetic acid	94746	5.00E-04	I							18	N	1.8	N	0.68	N	1000	N	39
2-(2-Methyl-14-chlorophenoxy)propionic acid	93652	1.00E-03	I							37	N	3.7	N	1.4	N	2000	N	78
Methylcyclohexane	108872			8.57E-01	H					31000	N	3100	N					
Methylene bromide	74953	1.00E-02	A							x 61	N	37	N	14	N	20000	N	780
Methylene chloride	75092	6.00E-02	I	8.57E-01	H	7.50E-03	I	1.64E-03	I	x 4.1	C	3.8	C	0.42	C	760	C	85
4,4'-Methylene bis(2-chloroaniline)	101144	7.00E-04	H			1.30E-01	H	1.30E-01	H	0.52	C	0.048	C	0.024	C	44	C	4.9
4,4'-Methylenebisbenzeneamine	101779					2.50E-01	W			0.27	C	0.025	C	0.013	C	23	C	2.6
4,4'-Methylene bis(N,N'-dimethyl)aniline	101611					4.60E-02	I			1.5	C	0.14	C	0.069	C	120	C	14
4,4'-Methylenediphenyl isocyanate	101688			5.71E-06	I					x 0.035	N	0.021	N					
Methyl ethyl ketone	78933	6.00E-01	I	2.86E-01	I					x 1900	N	1000	N	810	N	1000000	N	47000
Methyl hydrazine	60344					1.10E+00	W			0.061	C	0.0057	C	0.0029	C	5.2	C	0.58
Methyl isobutyl ketone	108101	8.00E-02	H	2.29E-02	A					2900	N	84	N	110	N	160000	N	6300
Methyl methacrylate	80626	8.00E-02	H							2900	N	290	N	110	N	160000	N	6300
2-Methyl-5-nitroaniline	99558					3.30E-02	H			2	C	0.19	C	0.096	C	170	C	19
Methyl parathion	298000	2.50E-04	I							9.1	N	0.91	N	0.34	N	510	N	20
2-Methylphenol (o-cresol)	95487	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
3-Methylphenol (m-cresol)	103394	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
4-Methylphenol (p-cresol)	106445	5.00E-03	H							180	N	18	N	6.8	N	10000	N	390
Methyl styrene (mixture)	25013154	6.00E-03	A	1.14E-02	A					x 60	N	42	N	8.1	N	12000	N	470
Methyl styrene (alpha)	98839	7.00E-02	A							x 430	N	260	N	95	N	140000	N	5500
Methyl tertbutyl ether (MTBE)	1634044	5.00E-03	E	8.57E-01	I					x 180	N	3100	N	6.8	N	10000	N	390
Metolaclor (Dual)	51218452	1.50E-01	H							5500	N	550	N	200	N	310000	N	12000
Metribuzin	21087649	2.50E-02	I							910	N	91	N	34	N	51000	N	2000
Mirex	2385855	2.00E-04	I			1.80E+00	W			0.037	C	0.0035	C	0.0018	C	3.2	C	0.35
Molinate	2212671	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
Molybdenum	7439987	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Monochloramine	10599903	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
Naled	300765	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
2-Naphthylamine	91598					1.30E+02	E			0.00052	C	0.000048	C	0.000024	C	0.044	C	0.0049
Napropamide	15299997	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
Nickel refinery dust								8.40E-01	I			0.0075	C					
Nickel and compounds	7440020	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Nickel subsulfide	12035722							1.70E+00	I			0.0037	C					
Nitrapyrin	1929824	1.50E-03	W							55	N	5.5	N	2	N	3100	N	120
Nitrate	14797558	1.60E+00	I							58000	N	5800	N	2200	N	1000000	N	130000
Nitric Oxide	10102439	1.00E-01	W							3700	N	370	N	140	N	200000	N	7800
Nitrite	14797650	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
2-Nitroaniline	88744	6.00E-05	W	5.71E-05	H					2.2	N	0.21	N	0.081	N	120	N	4.7
3-Nitroaniline	99092	3.00E-03	O							110	N	11	N	4.1	N	6100	N	230
4-Nitroaniline	100016	3.00E-03	O							110	N	11	N	4.1	N	6100	N	230

CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
Nitrobenzene	98953	5.00E-04	I	5.71E-04	A					x 3.4	N	2.1	N	0.68	N	1000	N	39
Nitrofurantoin	67209	7.00E-02	H							2600	N	260	N	95	N	140000	N	5500
Nitrofurazone	59870					1.50E+00	H	9.40E+00	H	0.045	C	0.00067	C	0.0021	C	3.8	C	0.43
Nitrogen dioxide	10102440	1.00E+00	W							37000	N	3700	N	1400	N	1000000	N	78000
Nitroguanidine	556887	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
4-Nitrophenol	100027	6.20E-02	O							2300	N	230	N	84	N	130000	N	4800
2-Nitropropane	79469			5.71E-03	I			9.40E+00	H	210	N	0.00067	C					
N-Nitrosodi-n-butylamine	924163					5.40E+00	I	5.60E+00	I	0.012	C	0.0011	C	0.00058	C	1.1	C	0.12
N-Nitrosodiethanolamine	1116547					2.80E+00	I			0.024	C	0.0022	C	0.0011	C	2	C	0.23
N-Nitrosodiethylamine	55185					1.50E+02	I	1.51E+02	I	0.00045	C	0.000041	C	0.000021	C	0.038	C	0.0043
N-Nitrosodimethylamine	62759					5.10E+01	I	4.90E+01	I	0.0013	C	0.00013	C	0.000062	C	0.11	C	0.013
N-Nitrosodiphenylamine	86306					4.90E-03	I			14	C	1.3	C	0.64	C	1200	C	130
N-Nitroso di-n-propylamine	621647					7.00E+00	I			0.0096	C	0.00089	C	0.00045	C	0.82	C	0.091
N-Nitroso-N-methylethylamine	10595956					2.20E+01	I			0.0031	C	0.00028	C	0.00014	C	0.26	C	0.029
N-Nitrosopyrrolidine	930552					2.10E+00	I	2.13E+00	I	0.032	C	0.0029	C	0.0015	C	2.7	C	0.3
m-Nitrotoluene	99081	1.00E-02	H							x 61	N	37	N	14	N	20000	N	780
o-Nitrotoluene	88722	1.00E-02	H							x 61	N	37	N	14	N	20000	N	780
p-Nitrotoluene	99990	1.00E-02	H							x 61	N	37	N	14	N	20000	N	780
Norflurazon	27314132	4.00E-02	I							1500	N	150	N	54	N	82000	N	3100
NuStar	85509199	7.00E-04	I							26	N	2.6	N	0.95	N	1400	N	55
Octabromodiphenyl ether	32536520	3.00E-03	I							110	N	11	N	4.1	N	6100	N	230
Octahydro-1357-tetranitro-1357-tetrazocine	2691410	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
Octamethylpyrophosphoramide	152169	2.00E-03	H							73	N	7.3	N	2.7	N	4100	N	160
Oryzalin	19044883	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
Oxadiazon	19666309	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Oxamyl	23135220	2.50E-02	I							910	N	91	N	34	N	51000	N	2000
Oxyfluorfen	42874033	3.00E-03	I							110	N	11	N	4.1	N	6100	N	230
Paclobutrazol	76738620	1.30E-02	I							470	N	47	N	18	N	27000	N	1000
Paraquat	1910425	4.50E-03	I							160	N	16	N	6.1	N	9200	N	350
Parathion	56382	6.00E-03	H							220	N	22	N	8.1	N	12000	N	470
Pebulate	1114712	5.00E-02	H							1800	N	180	N	68	N	100000	N	3900
Pendimethalin	40487421	4.00E-02	I							1500	N	150	N	54	N	82000	N	3100
Pentabromo-6-chloro cyclohexane	87843					2.30E-02	H			2.9	C	0.27	C	0.14	C	250	C	28
Pentabromodiphenyl ether	32534819	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
Pentachlorobenzene	608935	8.00E-04	I							x 4.9	N	2.9	N	1.1	N	1600	N	63
Pentachloronitrobenzene	82688	3.00E-03	I			2.60E-01	H			x 0.041	C	0.024	C	0.012	C	22	C	2.5
Pentachlorophenol	87865	3.00E-02	I			1.20E-01	I			0.56	C	0.052	C	0.026	C	48	C	5.3
Permethrin	52645531	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900
Phenmedipham	13684634	2.50E-01	I							9100	N	910	N	340	N	510000	N	20000
Phenol	108952	6.00E-01	I							22000	N	2200	N	810	N	1000000	N	47000
m-Phenylenediamine	108452	6.00E-03	I							220	N	22	N	8.1	N	12000	N	470
p-Phenylenediamine	106503	1.90E-01	H							6900	N	690	N	260	N	390000	N	15000
Phenylmercuric acetate	62384	8.00E-05	I							2.9	N	0.29	N	0.11	N	160	N	6.3
2-Phenylphenol	90437					1.94E-03	H			35	C	3.2	C	1.6	C	3000	C	330
Phorate	298022	2.00E-04	H							7.3	N	0.73	N	0.27	N	410	N	16

CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
Phosmet	732116	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Phosphine	7803512	3.00E-04	I	8.57E-05	H					11	N	0.31	N	0.41	N	610	N	23
Phosphoric acid	7664382		I	2.86E-03						100	N	10	N					
Phosphorus (white)	7723140	2.00E-05	I							0.73	N	0.073	N	0.027	N	41	N	1.6
p-Phthalic acid	100210	1.00E+00	H							37000	N	3700	N	1400	N	1000000	N	78000
Phthalic anhydride	85449	2.00E+00	I	3.43E-02	H					73000	N	130	N	2700	N	1000000	N	160000
Picloram	1918021	7.00E-02	I							2600	N	260	N	95	N	140000	N	5500
Pirimiphos-methyl	29232937	1.00E-02	I							370	N	37	N	14	N	20000	N	780
Polybrominated biphenyls		7.00E-06	H			8.90E+00	H			0.0076	C	0.0007	C	0.00035	C	0.64	C	0.072
Polychlorinated biphenyls (PCBs)	1336363					7.70E+00	I			0.0087	C	0.00081	C	0.00041	C	0.74	C	0.083
Aroclor 1016	12674112	7.00E-05	I							2.6	N	0.26	N	0.095	N	140	N	5.5
Aroclor 1254	11097691	2.00E-05	I							0.73	N	0.073	N	0.027	N	41	N	1.6
Polychlorinated terphenyls (PCTs)						4.50E+00	E			0.015	C	0.0014	C	0.0007	C	1.3	C	0.14
Polynuclear aromatic hydrocarbons																		
Acenaphthene	83329	6.00E-02	I							2200	N	220	N	81	N	120000	N	4700
Anthracene	120127	3.00E-01	I							11000	N	1100	N	410	N	610000	N	23000
Benz[a]anthracene	56553					7.30E-01	E	6.10E-01	E	0.092	C	0.01	C	0.0043	C	7.8	C	0.88
Benzo[b]fluoranthene	205992					7.30E-01	E	6.10E-01	E	0.092	C	0.01	C	0.0043	C	7.8	C	0.88
Benzo[k]fluoranthene	207089					7.30E-02	E	6.10E-02	E	0.92	C	0.1	C	0.043	C	78	C	8.8
Benzo[a]pyrene	50328					7.30E+00	I	6.10E+00	W	0.0092	C	0.001	C	0.00043	C	0.78	C	0.088
Carbazole	86748					2.00E-02	H			3.4	C	0.31	C	0.16	C	290	C	32
Chrysene	218019					7.30E-03	E	6.10E-03	E	9.2	C	1	C	0.43	C	780	C	88
Dibenz[ah]anthracene	53703					7.30E+00	E	6.10E+00	E	0.0092	C	0.001	C	0.00043	C	0.78	C	0.088
Fluoranthene	206440	4.00E-02	I							1500	N	150	N	54	N	82000	N	3100
Fluorene	86737	4.00E-02	I							1500	N	150	N	54	N	82000	N	3100
Indeno[1,2,3-cd]pyrene	193395					7.30E-01	E	6.10E-01	E	0.092	C	0.01	C	0.0043	C	7.8	C	0.88
Naphthalene	91203	4.00E-02	W							1500	N	150	N	54	N	82000	N	3100
Pyrene	129000	3.00E-02	I							1100	N	110	N	41	N	61000	N	2300
Prochloraz	67747095	9.00E-03	I			1.50E-01	I			0.45	C	0.042	C	0.021	C	38	C	4.3
Profluralin	26399360	6.00E-03	H							220	N	22	N	8.1	N	12000	N	470
Prometon	1610180	1.50E-02	I							550	N	55	N	20	N	31000	N	1200
Prometryn	7287196	4.00E-03	I							150	N	15	N	5.4	N	8200	N	310
Pronamide	23950585	7.50E-02	I							2700	N	270	N	100	N	150000	N	5900
Propachlor	1918167	1.30E-02	I							470	N	47	N	18	N	27000	N	1000
Propanil	709988	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Propargite	2312358	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Propargyl alcohol	107197	2.00E-03	I							73	N	7.3	N	2.7	N	4100	N	160
Propazine	139402	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Propham	122429	2.00E-02	I							730	N	73	N	27	N	41000	N	1600
Propiconazole	60207901	1.30E-02	I							470	N	47	N	18	N	27000	N	1000
Propylene glycol	57556	2.00E+01	H							730000	N	73000	N	27000	N	1000000	N	1000000
Propylene glycol, monoethyl ether	52125538	7.00E-01	H							26000	N	2600	N	950	N	1000000	N	55000
Propylene glycol, monomethyl ether	107982	7.00E-01	H	5.71E-01	I					26000	N	2100	N	950	N	1000000	N	55000
Propylene oxide	75569			8.57E-03	I	2.40E-01	I	1.29E-02	I	0.28	C	0.49	C	0.013	C	24	C	2.7
Pursuit	81335775	2.50E-01	I							9100	N	910	N	340	N	510000	N	20000

Risk-Based C. .ntration Table
January-June 1996
April 30, 1996

CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
Pydrin	51630581	2.50E-02	I							910	N	91	N	34	N	51000	N	2000
Pyridine	110861	1.00E-03	I							37	N	3.7	N	1.4	N	2000	N	78
Quinalphos	13593038	5.00E-04	I							18	N	1.8	N	0.68	N	1000	N	39
Quinoline	91225					1.20E+01	H			0.0056	C	0.00052	C	0.00026	C	0.48	C	0.053
Resmethrin	10463868	3.00E-02	I							1100	N	110	N	41	N	61000	N	2300
Ronnel	299843	5.00E-02	H							1800	N	180	N	68	N	100000	N	3900
Rotenone	83794	4.00E-03	I							150	N	15	N	5.4	N	8200	N	310
Savey	78587050	2.50E-02	I							910	N	91	N	34	N	51000	N	2000
Selenious Acid	7783008	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Selenium	7782492	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Selenourea	630104	5.00E-03	H							180	N	18	N	6.8	N	10000	N	390
Sethoxydim	74051802	9.00E-02	I							3300	N	330	N	120	N	180000	N	7000
Silver and compounds	7440224	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Simazine	122349	5.00E-03	I			1.20E-01	H			0.56	C	0.052	C	0.026	C	48	C	5.3
Sodium azide	26628228	4.00E-03	I							150	N	15	N	5.4	N	8200	N	310
Sodium diethyldithiocarbamate	148185	3.00E-02	I			2.70E-01	H			0.25	C	0.023	C	0.012	C	21	C	2.4
Sodium fluoroacetate	62748	2.00E-05	I							0.73	N	0.073	N	0.027	N	41	N	1.6
Sodium metavanadate	13718268	1.00E-03	H							37	N	3.7	N	1.4	N	2000	N	78
Strontium, stable	7440246	6.00E-01	I							22000	N	2200	N	810	N	1000000	N	47000
Strychnine	57249	3.00E-04	I							11	N	1.1	N	0.41	N	610	N	23
Styrene	100425	2.00E-01	I	2.86E-01	I					x 1600	N	1000	N	270	N	410000	N	16000
Systhane	88671890	2.50E-02	I							910	N	91	N	34	N	51000	N	2000
2,3,7,8-TCDD (dioxin)	1746016					1.56E+05	H	1.16E+05	H	4.30E-07	C	5.40E-08	C		C	0.000037	C	4.10E-06
Tebuthiuron	34014181	7.00E-02	I							2600	N	260	N	95	N	140000	N	5500
Temephos	3383968	2.00E-02	H							730	N	73	N	27	N	41000	N	1600
Terbacil	5902512	1.30E-02	I							470	N	47	N	18	N	27000	N	1000
Terbufos	13071799	2.50E-05	H							0.91	N	0.091	N	0.034	N	51	N	2
Terbutryn	886500	1.00E-03	I							37	N	3.7	N	1.4	N	2000	N	78
1,2,4,5-Tetrachlorobenzene	95943	3.00E-04	I							x 1.8	N	1.1	N	0.41	N	610	N	23
1,1,1,2-Tetrachloroethane	630206	3.00E-02	I			2.60E-02	I	2.59E-02	I	x 0.41	C	0.24	C	0.12	C	220	C	25
1,1,2,2-Tetrachloroethane	79345					2.00E-01	I	2.03E-01	I	x 0.052	C	0.031	C	0.016	C	29	C	3.2
Tetrachloroethylene (PCE)	127184	1.00E-02	I			5.20E-02	E	2.03E-03	E	x 1.1	C	3.1	C	0.061	C	110	C	12
2,3,4,6-Tetrachlorophenol	58902	3.00E-02	I							1100	N	110	N	41	N	61000	N	2300
p,a,a,a-Tetrachlorotoluene	5216251					2.00E+01	H			x 0.00053	C	0.00031	C	0.00016	C	0.29	C	0.032
Tetrachlorovinphos	961115	3.00E-02	I			2.40E-02	H			2.8	C	0.26	C	0.13	C	240	C	27
Tetraethyldithiopyrophosphate	3689245	5.00E-04	I							18	N	1.8	N	0.68	N	1000	N	39
Tetraethyl lead	78002	1.00E-07	I							0.0037	N	0.00037	N	0.00014	N	0.2	N	0.0078
1,1,1,2-Tetrafluoroethane	811972		I	2.29E+01						x 140000	N	84000	N					
Thallic oxide	1314325	7.00E-05	W							2.6	N	0.26	N	0.095	N	140	N	5.5
Thallium																		
Thallium acetate	563688	9.00E-05	I							3.3	N	0.33	N	0.12	N	180	N	7
Thallium carbonate	6533739	8.00E-05	I							2.9	N	0.29	N	0.11	N	160	N	6.3
Thallium chloride	7791120	8.00E-05	I							2.9	N	0.29	N	0.11	N	160	N	6.3
Thallium nitrate	10102451	9.00E-05	I							3.3	N	0.33	N	0.12	N	180	N	7
Thallium selenite	12039520	9.00E-05	W							3.3	N	0.33	N	0.12	N	180	N	7

Risk-Based C[illegible]ntration Table
January-June 1996
April 30, 1996

CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
Thallium sulfate	7446186	8.00E-05	I							2.9	N	0.29	N	0.11	N	160	N	6.3
Thiobencarb	28249776	1.00E-02	I							370	N	37	N	14	N	20000	N	780
2-(Thiocyanomethylthio)-benzothiazole	21564170	3.00E-02	H							1100	N	110	N	41	N	61000	N	2300
Thiofanox	39196184	3.00E-04	H							11	N	1.1	N	0.41	N	610	N	23
Thiophanate-methyl	23564058	8.00E-02	I							2900	N	290	N	110	N	160000	N	6300
Thiram	137268	5.00E-03	I							180	N	18	N	6.8	N	10000	N	390
Tin and compounds		6.00E-01	H							22000	N	2200	N	810	N	1000000	N	47000
Toluene	108883	2.00E-01	I	1.14E-01	I					x 750	N	420	N	270	N	410000	N	16000
Toluene-2,4-diamine	95807					3.20E+00	H			0.021	C	0.002	C	0.00099	C	1.8	C	0.2
Toluene-2,5-diamine	95705	6.00E-01	H							22000	N	2200	N	810	N	1000000	N	47000
Toluene-2,6-diamine	823405	2.00E-01	H							7300	N	730	N	270	N	410000	N	16000
p-Toluidine	106490					1.90E-01	H			0.35	C	0.033	C	0.017	C	30	C	3.4
Toxaphene	8001352					1.10E+00	I	1.12E+00	I	0.061	C	0.0056	C	0.0029	C	5.2	C	0.58
Tralomethrin	66841256	7.50E-03	I							270	N	27	N	10	N	15000	N	590
Triallate	2303175	1.30E-02	I							470	N	47	N	18	N	27000	N	1000
Triasulfuron	82097505	1.00E-02	I							370	N	37	N	14	N	20000	N	780
1,2,4-Tribromobenzene	615543	5.00E-03	I							x 30	N	18	N	6.8	N	10000	N	390
Tributyltin oxide (TBTO)	56359	3.00E-05	I							1.1	N	0.11	N	0.041	N	61	N	2.3
2,4,6-Trichloroaniline hydrochloride	33663502					2.90E-02	H			2.3	C	0.22	C	0.11	C	200	C	22
2,4,6-Trichloroaniline	634935					3.40E-02	H			2	C	0.18	C	0.093	C	170	C	19
1,2,4-Trichlorobenzene	120821	1.00E-02	I	5.71E-02	H					x 190	N	210	N	14	N	20000	N	780
1,1,1-Trichloroethane	71556	9.00E-02	W	2.86E-01	W					x 1300	N	1000	N	120	N	180000	N	7000
1,1,2-Trichloroethane	79005	4.00E-03	I			5.70E-02	I	5.60E-02	I	x 0.19	C	0.11	C	0.055	C	100	C	11
Trichloroethylene (TCE)	79016	6.00E-03	E			1.10E-02	W	6.00E-03	E	x 1.6	C	1	C	0.29	C	520	C	58
Trichlorofluoromethane	75694	3.00E-01	I	2.00E-01	A					x 1300	N	730	N	410	N	610000	N	23000
2,4,5-Trichlorophenol	95954	1.00E-01	I							3700	N	370	N	140	N	200000	N	7800
2,4,6-Trichlorophenol	88062					1.10E-02	I	1.09E-02	I	6.1	C	0.57	C	0.29	C	520	C	58
2,4,5-Trichlorophenoxyacetic acid	93765	1.00E-02	I							370	N	37	N	14	N	20000	N	780
2-(2,4,5-Trichlorophenoxy)propionic acid	93721	8.00E-03	I							290	N	29	N	11	N	16000	N	630
1,1,2-Trichloropropane	598776	5.00E-03	I							x 30	N	18	N	6.8	N	10000	N	390
1,2,3-Trichloropropane	96184	6.00E-03	I			7.00E+00	I			x 0.0015	C	0.00089	C	0.00045	C	0.82	C	0.091
1,2,3-Trichloropropene	96195	5.00E-03	H							x 30	N	18	N	6.8	N	10000	N	390
1,1,2-Trichloro-1,2,2- trifluoroethane	76131	3.00E+01	I	8.57E+00	H					x 59000	N	31000	N	41000	N	1000000	N	1000000
Tridiphane	58138082	3.00E-03	I							110	N	11	N	4.1	N	6100	N	230
Triethylamine	121448			2.00E-03	I					73	N	7.3	N					
Trifluralin	1582098	7.50E-03	I			7.70E-03	I			8.7	C	0.81	C	0.41	C	740	C	83
1,2,4-Trimethylbenzene	95636	5.00E-02	E							x 300	N	180	N	68	N	100000	N	3900
1,3,5-Trimethylbenzene	108678	5.00E-02	E							x 300	N	180	N	68	N	100000	N	3900
Trimethyl phosphate	512561					3.70E-02	H			1.8	C	0.17	C	0.085	C	150	C	17
1,3,5-Trinitrobenzene	99354	5.00E-05	I							1.8	N	0.18	N	0.068	N	100	N	3.9
Trinitrophenylmethylnitramine	479458	1.00E-02	H							370	N	37	N	14	N	20000	N	780
2,4,6-Trinitrotoluene	118967	5.00E-04	I			3.00E-02	I			2.2	C	0.21	C	0.11	C	190	C	21
Uranium (soluble salts)	7440611	3.00E-03	I							110	N	11	N	4.1	N	6100	N	230
Vanadium	7440622	7.00E-03	H							260	N	26	N	9.5	N	14000	N	550
Vanadium pentoxide	1314621	9.00E-03	I							330	N	33	N	12	N	18000	N	700

Risk-Based C ntration Table
January-June 1996
April 30, 1996

CHEMNAME	CAS	RFDO		RFDI		CPSO		CPSI		VOC DW_ppb		AIR_ug/m	3	FISH_ppm		CSOIL_pp	m	RSOIL_pp
Vanadium sulfate	36907423	2.00E-02	H							730	N	73	N	27	N	41000	N	1600
Vernam	1929777	1.00E-03	I							37	N	3.7	N	1.4	N	2000	N	78
Vinclozolin	50471448	2.50E-02	I							910	N	91	N	34	N	51000	N	2000
Vinyl acetate	108054	1.00E+00	H	5.71E-02	I					37000	N	210	N	1400	N	1000000	N	78000
Vinyl bromide	593602			8.57E-04	I					x 5.2	N	3.1	N					
Vinyl chloride	75014					1.90E+00	H	3.00E-01	H	x 0.019	C	0.021	C	0.0017	C	3	C	0.34
Warfarin	81812	3.00E-04	I							11	N	1.1	N	0.41	N	610	N	23
m-Xylene	108323	2.00E+00	H	2.00E-01	W					x 1400	N	730	N	2700	N	1000000	N	160000
o-Xylene	95476	2.00E+00	H	2.00E-01	W					x 1400	N	730	N	2700	N	1000000	N	160000
p-Xylene	106423			8.57E-02	W					x 520	N	310	N					
Xylene (mixed)	1330207	2.00E+00	I							x 12000	N	7300	N	2700	N	1000000	N	160000
Zinc	7440666	3.00E-01	I							11000	N	1100	N	410	N	610000	N	23000
Zinc phosphide	1314847	3.00E-04	I							11	N	1.1	N	0.41	N	610	N	23
Zineb	12122677	5.00E-02	I							1800	N	180	N	68	N	100000	N	3900

APPENDIX C

DECONTAMINATION PAD SOIL CUTTINGS SOIL SAMPLING LOG

GERAGHTY & MILLER, INC.
Environmental Services

SOIL/SEDIMENT SAMPLING LOG

Project No. Sloss Industries TF0320.014 Page 1 of 1

Site Location Birmingham, Alabama

Sample I.D. No. 960620 - CO - 1N - SL 0001 (___ - ___') Coded/Replicate No. —

Date 6 / 20 / 96 Time of Sampling: Begin 1645 End ___

Weather SUNNY 80's No ppt

Site Description ON CONCRETE DECON PAD. SAMPLE FROM 1 DRUM - DECON SOIL DRUM

SAMPLING DATA

Collection Method STAINLESS STEEL SPOON - ALL EXCEPT B260 COMPOSITED IN STAINLESS STEEL BOWL W/ STAINLESS STEEL SPOON

Depth DRUM SAMPLE Moisture Content SATURATED

Color MOD REDDISH BROWN Odor —

Description CLAY

Analyses Required

Container Description

From Lab X or G&M ___

EPA 8260	4 oz. glass jar
EPA 8270	8 oz. glass jar
Priority Pollutant Metals	8 oz. glass jar
Barium	8 oz. glass jar
Cyanide	8 oz. glass jar

Sample Monitoring (TIP, OVA, HNU, etc.)

OVM

Remarks SAMPLE FROM 1 DRUM GENERATED AT DECON AREA

Sampler(s) Joseph Hughes

I, L D Dustin, am responsible for filing documents in the (Name of file) Sloss Ind. Inc. file. The attached document, (Name of document) RCRA Facil. Inv. C of Be Manuf. Plnt Vol II of III was originally submitted to the Alabama Department of Environmental Management in a 3-ring binder.

For ease of filing, only the binder has changed. No material has changed in the document. No other alterations have been made to said document, and it is otherwise in its original form as submitted to the Alabama Department of Environmental Management.

L D Dustin

Done this 27th of Dec, 2000

Witness:

RCRA Facility Investigation
Coke Manufacturing Plant
Volume III of III

Analytical Data
(November 1996 - Revised November 2000)

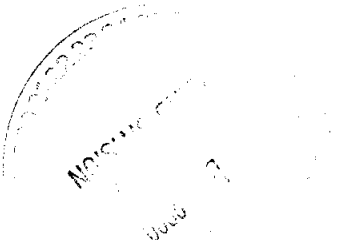
ARCADIS GERAGHTY & MILLER

27 November 2000

PREPARED FOR

Sloss Industries, Inc.
Birmingham, Alabama

ARCADIS GERAGHTY & MILLER



RCRA Facility Investigation
Coke Manufacturing Plant
Volume III of III

Analytical Data
(November 1996 - Revised November 2000)

Prepared for:
Sloss Industries, Inc.
Birmingham, Alabama

Prepared by:
ARCADIS Geraghty & Miller Inc
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Tel 813 961 1921
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Our Ref.:
TF000320.0022

Date:
27 November 2000

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SAMPLE DESIGNATION

A sample identification system has been developed to enable the field sampling personnel to establish unique and appropriate identifications for each sample collected. This system incorporates identifiers for the type of investigation, SWMU (when applicable), sample matrix, and the sample location. The identification number will consist of a date code, investigation code, SWMU code, sample matrix code, and sample number. Each of these codes is described below.

Date Code. The date code will consist of a six-digit number. The first two digits refer to the year, the second two digits refer to the month, and the last two digits refer to the day.

Investigation Code. The investigation code will consist of a two-character alpha code. The investigation codes for all samples collected throughout the five-year project are defined as follows.

Facility-Wide	FW
Coke Manufacturing	CO
Land Disposal Areas	LD
Chemical Manufacturing Plant	CM
Biological Treatment Facility	BT

SWMU Code. The SWMU code is a location code. This code will be a number, e.g., "21" for SWMU No. 21, "IW" for investigation-derived waste, or "00" for other samples without a specific location designation (i.e., for background samples) collected during the Facility-Wide Investigation.

Sample Matrix Code. This code includes field QC samples. The sample matrix code will be a two-character alpha code that describes the type of sample matrix. The following codes will be used:

Soil:	SL
Sediment:	SD
Surface Water:	SW
Groundwater (piezometer or monitor well):	GW
Ambient Air:	AA
Waste, Sludge, Landfills, Waste Piles:	SM
Field Blank (Water):	FB
Equipment Blank:	EB
Trip Blank:	TB
Process Water	PW

Sample Number Code. The sample number code will be a four-digit number starting with 0001, proceeding sequentially with 0002, 0003, through 0999. This allows for potentially 999 samples from any matrix at any SWMU.

Field Replicate (Duplicate) Samples. Field replicate samples will be uniquely identified with a "9" immediately following the matrix code. Specific notation of this number and the sample number of its mate shall be noted, with clarity, in the field logs. The Quality Assurance (QA) Officer shall be provided with these notes so that replicate analyses can be identified during data validation procedures.

Examples. The following numbers are provided as examples to illustrate how the sample coding will work for each matrix. Assume the field samples and the QC samples were collected during the Facility-Wide investigation and Coke Manufacturing Plant investigation on June 8-12, 1996.

Investigation-derived Groundwater Samples from Piezometer 12:	960608-FW-IW-GW0012
Soil Samples from one interval at SWMU 2A location 1:	960609-CO-02A-SL0001 (2-4')
Sediment Samples from Location 6:	950609-FW-00-SD0006
Quench Water Samples from SWMU 2A at Location 1:	960609-CO-02A-PW0001
Field Replicate of Soil from one interval at SWUM 8 Location 1:	960608-CO-08-SL9001
Field Blank associated with Soil Sampling at SWMU 8:	960608-CO-08-FB0001
Field Blank associated with quench water sampling at SWMU 7:	960608-CO-07-PW0002
Equipment Blank associated with soil sampling at SWMU 7:	960612-CO-07-SDEB02
Trip Blank associated with SWMU 7:	950611-CO-07-TB0001

Note that the equipment blank identifier has the type of equipment designated before the "EB" designation. This is to allow for database sorting of samples by matrix and associated equipment blanks.

G:\proj\tf320birminghamqc\sampIDco.doc

VOLUME III

USEPA CONTRACT LABORATORY PROGRAM NATIONAL FUNCTIONAL GUIDELINES FOR ORGANIC DATA REVIEW (FEBRUARY 1994)

GUIDELINES USED TO DETERMINE WHETHER DETECTED CHEMICALS ARE LABORATORY OR FIELD CONTAMINANTS

Publication 9240.1-05
PB94-963501
EPA540/R-94/012
February 1994

USEPA CONTRACT LABORATORY PROGRAM NATIONAL FUNCTIONAL GUIDELINES FOR ORGANIC DATA REVIEW

Office of Emergency and Remedial Response
U.S. Environmental Protection Agency
Washington, DC 20460

V. Blanks

A. Review Items: Form I VOA *[Form I LCV]*, Form IV VOA *[Form IV LCV]*, chromatograms, and quantitation reports.

B. Objective:

The purpose of laboratory (or field) blank analysis is to determine the existence and magnitude of contamination resulting from laboratory (or field) activities. The criteria for evaluation of blanks apply to any blank associated with the samples (e.g., method blanks, instrument blanks, trip blanks, and equipment blanks). If problems with any blank exist, all associated data must be carefully evaluated to determine whether or not there is an inherent variability in the data, or if the problem is an isolated occurrence not affecting other data.

C. Criteria:

1. No contaminants should be found in the blanks.

2. A method blank analysis must be performed after the calibration standards and once for every 12-hour time period beginning with the injection of BFB.

3. The method blank must be analyzed on each GC/MS system used to analyze samples for each type of analysis, i.e., unheated purge (water and medium level soil) and heated purge (low level soil).

4. A storage blank must be prepared upon receipt of the first samples from an SDG, and stored with samples until analysis. The storage blank must be analyzed once per SDG.

5. An instrument blank must be analyzed after any sample that has saturated ions from a given compound to check that the blank is free of interference and the system is not contaminated.

D. Evaluation:

1. Review the results of all associated blanks on the forms and raw data (chromatograms and quantitation reports) to evaluate the presence of target and non-target compounds in the blanks.

2. Verify that a method blank analysis has been reported per matrix, per concentration level, for each 12-hour time period on each GC/MS system used to analyze volatile samples. The reviewer can use the Method Blank Summary (Form IV VOA *[Form IV LCV]*) to identify the samples associated with each method blank.

3. Verify that a storage blank has been analyzed and included with each SDG and that the storage blanks are free of contamination.

4. Verify that the instrument blank analysis has been performed following any sample analysis where a target analyte(s) is/are reported at high concentration(s).

E. Action:

If the appropriate blanks were not analyzed with the frequency described in Criteria 2, 3, and 4, and 5 then the data reviewer should use professional judgement to determine if the associated sample data should be qualified. The reviewer may need to obtain additional information from the laboratory. The situation should be noted for TPO action.

Action regarding unsuitable blank results depends on the circumstances and origin of the blank. Positive sample results should be reported unless the concentration of the compound in the sample is less than or equal to 10 times (10x) the amount in any blank for the common volatile laboratory contaminants (**methylene chloride, acetone, and 2-butanone**), or 5 times (5x) the amount for other volatile target compounds. In instances where more than one blank is associated with a given sample, qualification should be based upon a comparison with the associated blank having the highest concentration of a contaminant. The results must not be corrected by subtracting any blank value.

Specific actions are as follows:

1. If a volatile compound is found in a blank but not found in the sample, no action is taken. If the contaminants found are volatile target compounds (or interfering non-target compounds) at significant concentrations above the CRQL, then this should be noted for TPO action.

2. Any volatile compound detected in the sample (other than the common volatile laboratory contaminants), that was also detected in any associated blank, is qualified if the sample concentration is less than five times (5x) the blank concentration. The quantitation limit may also be elevated. Typically, the sample CRQL is elevated to the concentration found in the sample. The reviewer should use professional judgement to determine if further elevation of the CRQL is required. For the common volatile laboratory contaminants, the results are qualified by elevating the quantitation limit to the concentration found in the sample when the sample concentration is less than 10 times (10x) the blank concentration.

   The reviewer should note that blanks may not involve the same weights, volumes, or dilution factors as the associated samples. These factors must be taken into consideration when applying the "5x" and "10x" criteria, such that a comparison of the total amount of contamination is actually made.

Additionally, there may be instances where little or no contamination was present in the associated blanks, but qualification of the sample is deemed necessary. If the reviewer determines that the contamination is from a source other than the sample, he/she should qualify the data. Contamination introduced through dilution water is one example. Although it is not always possible to determine, instances of this occurring can be detected when contaminants are found in the diluted sample result, but are absent in the undiluted sample result. Since both results are not routinely reported, it may be impossible to verify this source of contamination. In this case, the "5x" or "10x" rules may not apply; the target compound should be reported as not detected, and an explanation of the data qualification should be provided in the data review narrative.

3. If gross contamination exists (i.e., saturated peaks by GC/MS), all affected compounds in the associated samples should be qualified as unusable (R) due to interference. This should be noted for TPO action if the contamination is suspected of having an effect on the sample results.

4. If inordinate numbers of other target compounds are found at low levels in the blank(s), it may be indicative of a problem and should be noted for TPO action.

5. The same consideration given to the target compounds should also be given to Tentatively Identified Compounds (TICs), which are found in both the sample and associated blank(s). (See VOA Section XII for TIC guidance.)

6. If contaminants are found in the storage blanks, the following action is recommended.

   a. The associated method blank data should be reviewed to determine if the contaminant(s) was also present in the method blank. If the analyte was present at a comparable level in the method blank, then the source of the contamination may be in the analytical system and the action recommended for the method blank would apply.

      If the analyte was not present in the method blank, then the source of contamination may be in the storage and all associated samples should be considered for possible cross-contamination.

   b. If the storage blank contains a volatile TCL compound(s) at a concentration greater than the CRQL, then all positive results for that compounds(s) should be qualified with "J". If the concentration level in the blank is significantly high, then positive sample results may require rejection and be qualified with "R". Non-detected volatile target compounds should not require qualificatior unless the contamination is so high that it interferes with the analysis of the non-detect compounds.

7. If an instrument blank was not analyzed following a sample analysis which contained an analyte(s) at high concentration(s), sample analysis results after the high concentration sample must be evaluated for carryover. Professional judgement should be used to determine if instrument cross-contamination has affected any positive compound identification(s). If instrument cross-contamination is suggested, then this should be noted for TPO action if the cross-contamination is suspected of having an effect on the sample results.

The following are examples of applying the blank qualification guidelines. Certain circumstances may warrant deviations from these guidelines.

Example 1: Sample result is greater than the Contract Required Quantitation Limit (CRQL), but is less than the 5x or 10x multiple of the blank result.

	Rule	
	10x	5x
Blank Result	7	7
CRQL	5	5
Sample Result	60	30
Final Sample Result	60U	30U

In the example for the "10x" rule, sample results less than 70 (or 10 x 7) would be qualified as not detected. In the case of the "5x" rule, sample results less than 35 (or 5 x 7) would be qualified as not detected.

Example 2: Sample result is less than the CRQL, and is also less than the 5x or 10x multiple of the blank result.

	Rule	
	10x	5x
Blank Result	6	6
CRQL	5	5
Sample Result	4J	4J
Final Sample Result	5U	5U

Note that data are not reported as 4U, as this would be reported as a detection limit below the CRQL.

Example 3: Sample result is greater than the 5x or 10x multiple of the blank result.

	Rule	
	10x	5x
Blank Result	10	10
CRQL	5	5
Sample Result	120	60
Final Sample Result	120	60

For both the "10x" and "5x" rules, sample results exceeded the adjusted blank results of 100 (or 10x10) and 50 (or 5x10), respectively, and therefore are not qualified.

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Sloss Industries
PROJECT NUMBER: TF0320.014
SAMPLING DATE: June 5-7, 1996 VALIDATION DATE: Aug. 11, 1996
SAMPLE IDENTIFICATION: Coke Manufacturing Plant
Lab IDs: 96-6157 through 96-6165, 96-6240 through 96-6247
SAMPLING TEAM: J. Hughes / J. Scotto
ANALYZING LABORATORY: Center for Applied Engineering
ANALYSES PERFORMED: 8260/8270/ Peroxity: Pollutant Metals + barium, cyanide
SAMPLE MATRIX: H_2O Quench Tower
QA REPORTING LEVEL: Geraghty + Miller Level II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		X		X	
2. SAMPLING TEAM INDICATED		X		X	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		X		X	
4. SAMPLE LOCATION		X		X	
5. SAMPLE DEPTH FOR SOILS	X	X			X
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		X		X	
7. FIELD SAMPLE PREPARATION TECHNIQUES		X		X	
8. SAMPLE TYPE (GRAB, COMPOSITE)		X		X	
9. SAMPLE CONTAINER TYPE		X		X	
10. PRESERVATION METHODS		X		X	
11. CHAIN OF CUSTODY FORM COMPLETED		X		X	
12. REQUIRED ANALYTICAL METHODS REQUESTED		X		X	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		X		X	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		X		X	
15. FIELD EQUIPMENT CALIBRATION		X		X	
16. FIELD EQUIPMENT DECONTAMINATION		X		X (a)	
17. SAMPLE SHIPPING		X		X	
18. LABORATORY TASK ORDER	X		X (b)		

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:
(a) Field Eq. ~~Cattle~~ Decontamination needs to be documented daily
(b) LTO was not available for review / LTO was not referenced on the COCs

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		X		X	
2. PARAMETERS ANALYZED		X		X	
3. METHOD OF ANALYSIS		X		X	
4. DETECTION LIMITS OF ANALYSIS		X		X	
5. MASTER TRACKING LIST		X		X	
6. SAMPLE COLLECTION DATE		X		X	
7. LAB SAMPLE RECEIVED DATE		X		X	
8. SAMPLE PREPARATION/EXTRACTION DATE		X		X	
9. SAMPLE ANALYSIS DATE		X		X	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		X		X	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		X		X	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments:

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks					
2. Extraction Blanks					
3. MS[4/] (Batch Specific)					
4. MSD[5/] (Batch Specific)					
5. LD[6/] (Optional)					
6. MS/MSD RPD or Sample/LD RPD					
7. RWS					
8. RWSD					
9. RWS RPD					
10. Surrogate Spikes					

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks		X		X	
2. Extraction Blanks		X		X	
3. MS (Batch Specific)		X		X	
4. MSD (Batch Specific)		X		X	
5. LD (Optional)	X				X
6. MS/MSD RPD or Sample/LD RPD		X		X	
7. RWS		X		X	
8. RWSD	X				X
9. RWS RPD	X				X
10. Surrogate Spikes		X		X[a]	

COMMENTS:
(a) Several samples qualified due to surrogate recoveries

1/ RWS = Reagent Water Spike; 2/ RWSD = Reagent Water Spike Duplicate;
3/ RPD = Relative Percent Difference; 4/ MS = Matrix Spike;
5/ MSD = Matrix Spike Duplicate; 6/ LD = Lab Dup

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES

METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		X		X	
2. MS % RECOVERY (%R)		X		X	
3. MSD OR LAB DUPLICATE % R		X		X	
4. RWS % R		X		X	
5. RWSD % R	X				X
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD		X		X	
7. LCS[8] %R	X				X
8. ICVS [9] %R	X				X

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)[10]

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12] %R (ICP ONLY)					
7. DCS[13] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES.
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE CONTINUED

ORGANIC ANALYSES

QA REPORTING LEVEL: III
REQUIREMENTS

A. GAS CHROMATOGRAPH OR WET CHEMISTRY	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. WATER BLANKS (VOC)					
2. EXTRACTION BLANKS					
3. MS[1/] %R SAMPLE SPECIFIC					
4. MSD[2/] %R SAMPLE SPECIFIC					
5. LD[3/] SAMPLE SPECIFIC (OPTIONAL)					
6. MS/MSD RPD[4/] OR SAMPLE/LD RPD					
7. RWS[5/]					
8. RWSD[6/]					
9. RWS/RWSD RPD					
10. SURROGATE SPIKES					

B. GAS CHROMATOGRAPH/MASS SPECTROMETER					
1. BFB OR DFTPP TUNING[7/]					
2. INITIAL CALIBRATION (IC)					
A. SPCC COMPOUNDS (RRF[8/] >0.3/0.05)					
B. CCC COMPOUNDS (RSD[9/] < 30%)					
C. OTHER COMPOUNDS (RRF > 0.05)					
3. CONTINUING CALIBRATION (CC)					
A. SPCC COMPOUNDS (RRF >0.3/0.05)					
B. CCC COMPOUNDS (MAX %D[10/] < 25%)					
C. OTHER COMPOUNDS (RRF >0.05)					
4. WATER BLANKS					
5. EXTRACTION BLANKS					
6. RWS					
7. RWSD					
8. RWS/RWSD RPD					
9. MS (SAMPLE SPECIFIC)					
10. MSD (SAMPLE SPECIFIC)					
11. SURROGATE SPIKE					

COMMENTS: _____

1/ MS = MATRIX SPIKE; 2/ MSD = MATRIX SPIKE DUPLICATE; 3/ LD = LAB DUP
4/ RPD = RELATIVE PERCENT DIFFERENCE; 5/ RWS = REAGENT WATER SPIKE;
6/ RWSD = REAGENT WATER SPIKE DUPLICATE; 7/ BFB TUNING IS FOR VOLATILES AND DFTPP TUNING IS FOR SEMI-VOLATILES (BNA EXTRACTABLES). 8/ RRF = RELATIVE RESPONSE FACTOR;
9/ RSD = RELATIVE STANDARD DEVIATION; 10/ %D = PERCENT DIFFERENCE;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY

PROJECT NAME: Moss Industries PROJECT NUMBER: TF0320.014
QA REPORTING LEVEL: II VALIDATION DATE: Aug. 11, 1994

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS

	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA	X				X
2. FIELD RECORDS		X		X	
3. METHODS (GEN. INFO. SECTION ONE)		X		X	
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES		X		X	
B. ANALYSIS HOLDING TIMES		X		X	
5. DETECTION LIMITS (SECTION ONE)		X		X	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS		X		X	
B. FIELD BLANKS		X		X	
C. TRIP BLANKS		X		X	
D. LABORATORY BLANKS		X		X	
7. FIELD REPLICATES		X		X	
8. FIELD SPLITS	X				X
9. GEOPHYSICAL COMPARISONS					
A. CATION VS ANION	X				X
B. TDS VS SPEC. CONDUCTANCE	X				X
C. PH VS ALK/ACIDITY	X				X
D. OTHER	X				X
10. METALS QA DATA (SECTION TWO)		X		X	
11. INORGANIC WET CHEMISTRY (SEC. TWO)	X				X
12. ORGANIC QA DATA-GC (SECTION THREE-A)	X				X
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)	X				X
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		X		X	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

000008

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING

PROJECT NAME: Glass Industries PROJECT NUMBER: TF0320.014
QA REPORTING LEVEL: II VALIDATION DATE: Aug. 11, 1996

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION:

Reference the attached Table for all qualified analytical results associate with this data package.

VALIDATION PERFORMED BY: Cindy Arnold

SIGNED: Cindy Arnold

DATE: 9/26/96

Table 1
Summary of Qualified Analytical Results
for Sloss Industries
Coke Manufacturing Plant
Birmingham, AL

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
QUENCH TOWER WATER				
960605-CO-02B-PW0001	toluene	1.9 ug/L	U	Toluene 1.7 ug/L detected in the associated trip blank
960605-CO-02B-PW0001	Total As	55 ug/L	U	Arsenic 31 ug/L detected in the associated field blank
960605-CO-02B-PW0001	Dissol As	50 ug/L	U	Arsenic 31 ug/L detected in the associated field blank
960605-CO-02B-PW0001	Dissol Ag	10 ug/L	UJ	Dissolved silver (Ag) matrix spike recovery 62%
960605-CO-02B-PW0001	2-cholorethyl vinyl ether	10 ug/L	UJ	QC Batch No. 23183 MS recovery 1%
960605-CO-02B-PW0001	acenaphthene	10 ug/L	UJ	QC Batch N0. 23570 LCS recovery 52%
960605-CO-02B-PW9001	toluene	2.1 ug/L	U	Toluene 1.7 ug/L detected in the associated trip blank
960605-CO-02B-PW9001	Total As	57 ug/L	U	Arsenic 31 ug/L detected in the associated field blank
960605-CO-02B-PW9001	Dissol As	54 ug/L	U	Arsenic 31 ug/L detected in the associated field blank
960605-CO-02B-PW9001	Dissol Ag	10 ug/L	UJ	Dissolved silver (Ag) matrix spike recovery 62%
960605-CO-02B-PW9001	2-cholorethyl vinyl ether	10 ug/L	UJ	QC Batch No. 23183 MS recovery 1%
960605-CO-02B-PW9001	acenaphthene	10 ug/L	UJ	QC Batch N0. 23570 LCS recovery 52%
960607-CO-02A-PW0001	Total As	73 ug/L	U	Arsenic 31 ug/L detected in the associated field blank
960607-CO-02A-PW0001	Dissol As	70 ug/L	U	Arsenic 31 ug/L detected in the associated field blank
960607-CO-02A-PW0001	Dissol Ag	10 ug/L	UJ	Dissolved silver (Ag) matrix spike recovery 62%
960607-CO-02A-PW0001	acrolein	100 ug/L	UJ	QC Batch No. 23416 MS recovery 49%
960607-CO-02A-PW0001	acenaphthene	10 ug/L	UJ	QC Batch N0. 23570 LCS recovery 52%

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Center For Applied Engineering, Inc.
Environmental Testing Services

CASE NARRATIVE

Lab sample ID.	G&M sample ID.
96-6157	960605-CO-02B-PW0001
96-6161	960605-CO-02B-PW9001
96-6162	TRIP BLANK
96-6163	960605-CO-02B-FB001
96-6164	960605-CO-02B-PWEB01
96-6165	TRIP BLANK
96-6240	960607-CO-12-TB0004
96-6244	960607-CO-02A-PW0001
96-6245	960607-CO-12-TB0003
96-6246	960606-CO-12-FB0002
96-6247	960606-CO-12-SLEB02

Volatiles

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) results for 4-methyl-2-pentanone and acrylonitrile in sample 96-6157 are slightly above the accuracy limits listed in the project QA plan. The limits were developed by another laboratory. The results are within our historical limits of 69-135% and 45-150% respectively. MS/MSD data is also reported for sample 96-6245 in this group. Recovery of 1,2,3-trichloropropane is above the upper limit in the MS, but within the limits for the MSD. Acrolein and vinyl acetate MS recoveries are below the lower limit, but the MSD recoveries are within the limits. Iodomethane, carbon disulfide, acrylonitrile and dichlorodifluoromethane recoveries for both MS and MSD were below the project limits.

2-chloroethylvinyl ether was not recovered in either MS/MSD set due to hydrolysis from the acid preservation of the samples.

Variability in the recovery of some of these compounds was also noted in the Laboratory Control Samples (LCS) (QCRS, Reagent Water Spikes). Continuing calibration was in control.

Precision was generally good except for iodomethane and vinyl acetate which had high RPD due to the variability in the MS/MSD data.

Method blanks were below detectable limits.

Additional MS and MS/MSD data is available in this package from samples outside this group due to run sequence proximity.

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Semivolatiles

MS/MSD recoveries are all within control limits.

LCS recovery of acenaphthene is below the project limit, but is within the laboratory's historical limits of 47-135%.

Method blanks were below detectable limits. Some of the samples listed as Field and Equipment Blanks showed contamination from di-n-butyl-phthalate.

Metals

Silver MS/MSD recovery was below the acceptance limits, probably due to matrix effects. All LCS and blank data is in control. RPD for Selenium MS/MSD results was just above the precision limit, possibly due to matrix effects.

Cyanide

No problems were encountered with the performance of the cyanide analysis.

Respectfully Submitted

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

Attention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14722
Date Collected: 06/05/96 14:00
Collected By: CST
Date Received: 06/06/96 10:30

Cust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

Sample Desc: 960605-CO-02B-PW0001, Birmingham, AL

FL-DEP CompQAP: 900359G

Lab ID: 96 0006157

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
METALS							
DISSOLVED							
Silver, Dissolved	BDL	UG/L	10	5	6020	06/12	22989
Arsenic, Dissolved	50	UG/L	10	5	6020	06/12	22989
Barium, Dissolved	190	UG/L	10	5	6020	06/12	22989
Beryllium, Dissolved	BDL	UG/L	5	5	6020	06/13	23015
Cadmium, Dissolved	BDL	UG/L	5	5	6020	06/12	22989
Chromium, Dissolved	BDL	UG/L	10	5	6020	06/12	22989
Copper, Dissolved	BDL	UG/L	25	5	6020	06/13	23015
Mercury, Dissolved	BDL	UG/L	50	1	7470	06/13	23000
Nickel, Dissolved	BDL	UG/L	40	5	6020	06/13	23015
Lead, Dissolved	BDL	UG/L	50	5	6020	06/12	22989
Antimony, Dissolved	BDL	UG/L	50	5	6020	06/12	22989
Selenium, Dissolved	BDL	UG/L	10	1	270.2	06/19	23101
Thallium, Dissolved	BDL	UG/L	10	5	6020	06/13	23015
Zinc, Dissolved	BDL	UG/L	20	5	6020	06/13	23015
TOTAL							
Silver, Total	BDL	UG/L	10	5	6020	06/12	22987
Arsenic, Total	55	UG/L	10	5	6020	06/12	22987
Barium, Total	220	UG/L	10	5	6020	06/12	22987
Beryllium, Total	BDL	UG/L	5	5	6020	06/13	23014
Cadmium, Total	BDL	UG/L	5	5	6020	06/12	22987
Chromium, Total	BDL	UG/L	10	5	6020	06/12	22987
Copper, Total	BDL	UG/L	25	5	6020	06/13	23014
Mercury, Total	BDL	UG/L	50	1	7470	06/13	22999
Nickel, Total	BDL	UG/L	40	5	6020	06/13	23014
Lead, Total	BDL	UG/L	50	5	6020	06/12	22987
Antimony, Total	BDL	UG/L	50	5	6020	06/12	22987

Note 'BDL' = Below Detection Limit

Distribution of Report:
Charles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

3030 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14722
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ast Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960605-CO-02B-PW0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006157

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23101
Thallium, Total	BDL	UG/L	10	5	6020	06/13	23014
Zinc, Total	BDL	UG/L	20	5	6020	06/13	23014
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/02	23570
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/02	23570
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/02	23570
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/02	23570
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/02	23570
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/02	23570
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/02	23570
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/02	23570
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/02	23570
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/02	23570
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/02	23570
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/02	23570
2-Chlorophenol	BDL	UG/L	10	1	8270	07/02	23570
bis-(2-Ethylhexyl) phthalate	BDL	UG/L	10	1	8270	07/02	23570
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/02	23570
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/02	23570
2-Nitroaniline	BDL	UG/L	50	1	8270	07/02	23570
2-Nitrophenol	BDL	UG/L	10	1	8270	07/02	23570
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/02	23570
3-Nitroaniline	BDL	UG/L	50	1	8270	07/02	23570
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/02	23570
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/02	23570
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/02	23570

ote 'BDL' = Below Detection Limit

0000014

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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ample Desc: 960605-CO-02B-PW0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006157

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
4-Chloroaniline	BDL	UG/L	20	1	8270	07/02	23570
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/02	23570
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/02	23570
4-Nitroaniline	BDL	UG/L	50	1	8270	07/02	23570
4-Nitrophenol	BDL	UG/L	50	1	8270	07/02	23570
Acenaphthene	BDL	UG/L	10	1	8270	07/02	23570
Acenaphthylene	BDL	UG/L	10	1	8270	07/02	23570
Anthracene	BDL	UG/L	10	1	8270	07/02	23570
Benzyl alcohol	BDL	UG/L	10	1	8270	07/02	23570
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/02	23570
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/02	23570
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/02	23570
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/02	23570
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/02	23570
Chrysene	BDL	UG/L	10	1	8270	07/02	23570
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/02	23570
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/02	23570
Dibenzofuran	BDL	UG/L	10	1	8270	07/02	23570
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/02	23570
Di-n-butylphthalate	BDL	UG/L	10	1	8270	07/02	23570
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/02	23570
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/02	23570
Diethylphthalate	BDL	UG/L	10	1	8270	07/02	23570
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/02	23570
Dimethylphthalate	BDL	UG/L	10	1	8270	07/02	23570
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/02	23570
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/02	23570
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/02	23570

0006157

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
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ample Desc: 960605-CO-02B-PW0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006157

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/02	23570
Fluorene	BDL	UG/L	10	1	8270	07/02	23570
Fluoranthene	BDL	UG/L	10	1	8270	07/02	23570
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/02	23570
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/02	23570
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/02	23570
Hexachloroethane	BDL	UG/L	10	1	8270	07/02	23570
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/02	23570
Isophorone	BDL	UG/L	10	1	8270	07/02	23570
Naphthalene	BDL	UG/L	10	1	8270	07/02	23570
Nitrobenzene	BDL	UG/L	10	1	8270	07/02	23570
Pentachlorophenol	BDL	UG/L	50	1	8270	07/02	23570
Phenol	BDL	UG/L	10	1	8270	07/02	23570
Phenanthrene	BDL	UG/L	10	1	8270	07/02	23570
Pyrene	BDL	UG/L	10	1	8270	07/02	23570
Pyridine	BDL	UG/L	200	1	8270	07/02	23570
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/12	23183
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/12	23183
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/12	23183
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/12	23183
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/12	23183
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/12	23183
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/12	23183
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/12	23183
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/12	23183
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/12	23183
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/12	23183

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

Attention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Cust Proj: TF0320.014

Sample Desc: 960605-CO-02B-PW0001, Birmingham, AL

Lab ID: 96 0006157

Date of Report: 07/23/96
C-of-C Number: C14722
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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Hexanone	BDL	UG/L	50	1	8260	06/12	23183
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/12	23183
Acetone	BDL	UG/L	50	1	8260	06/12	23183
Acrolein	BDL	UG/L	100	1	8260	06/12	23183
Acrylonitrile	BDL	UG/L	100	1	8260	06/12	23183
Benzene	BDL	UG/L	5	1	8260	06/12	23183
Bromodichloromethane	BDL	UG/L	5	1	8260	06/12	23183
Bromoform	BDL	UG/L	5	1	8260	06/12	23183
Bromomethane	BDL	UG/L	10	1	8260	06/12	23183
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/12	23183
Chloroform	BDL	UG/L	5	1	8260	06/12	23183
Chlorobenzene	BDL	UG/L	5	1	8260	06/12	23183
Chloroethane	BDL	UG/L	10	1	8260	06/12	23183
Chloromethane	BDL	UG/L	10	1	8260	06/12	23183
Carbon disulfide	BDL	UG/L	5	1	8260	06/12	23183
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/12	23183
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/12	23183
Dibromochloromethane	BDL	UG/L	10	1	8260	06/12	23183
Dibromomethane	BDL	UG/L	5	1	8260	06/12	23183
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/12	23183
Ethylbenzene	BDL	UG/L	5	1	8260	06/12	23183
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/12	23183
Iodomethane	BDL	UG/L	5	1	8260	06/12	23183
m- and p-Xylenes	1.0	UG/L	.5	1	8260	06/12	23183
Methylene chloride	BDL	UG/L	5	1	8260	06/12	23183
o-Xylene	0.6	UG/L	.5	1	8260	06/12	23183
Styrene	BDL	UG/L	5	1	8260	06/12	23183
Trichloroethene	BDL	UG/L	.5	1	8260	06/12	23183

0006157

Note 'BDL' = Below Detection Limit

Distribution of Report:
Charles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14722
Date Collected: 06/05/96 14:00
Collected By: CST
Date Received: 06/06/96 10:30

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960605-CO-02B-PW0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006157

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/12	23183
Tetrachloroethene	BDL	UG/L	5	1	8260	06/12	23183
Toluene	1.9	UG/L	.5	1	8260	06/12	23183
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/12	23183
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/12	23183
Vinyl acetate	BDL	UG/L	10	1	8260	06/12	23183
Vinyl chloride	BDL	UG/L	10	1	8260	06/12	23183
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/11	22962

000018

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

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FL-DHRS Cert. No: E84254/84453

ample Desc: 960605-CO-02B-PW9001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006161

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
DISSOLVED							
Silver, Dissolved	BDL	UG/L	10	5	6020	06/12	22989
Arsenic, Dissolved	54	UG/L	10	5	6020	06/12	22989
Barium, Dissolved	200	UG/L	10	5	6020	06/12	22989
Beryllium, Dissolved	BDL	UG/L	5	5	6020	06/13	23015
Cadmium, Dissolved	BDL	UG/L	5	5	6020	06/12	22989
Chromium, Dissolved	BDL	UG/L	10	5	6020	06/12	22989
Copper, Dissolved	BDL	UG/L	25	5	6020	06/13	23015
Mercury, Dissolved	BDL	UG/L	50	1	7470	06/13	23000
Nickel, Dissolved	BDL	UG/L	40	5	6020	06/13	23015
Lead, Dissolved	BDL	UG/L	50	5	6020	06/12	22989
Antimony, Dissolved	BDL	UG/L	50	5	6020	06/12	22989
Selenium, Dissolved	BDL	UG/L	10	1	270.2	06/19	23101
Thallium, Dissolved	BDL	UG/L	10	5	6020	06/13	23015
Zinc, Dissolved	BDL	UG/L	20	5	6020	06/13	23015
TOTAL							
Silver, Total	BDL	UG/L	10	5	6020	06/12	22987
Arsenic, Total	57	UG/L	10	5	6020	06/12	22987
Barium, Total	230	UG/L	10	5	6020	06/12	22987
Beryllium, Total	BDL	UG/L	5	5	6020	06/13	23014
Cadmium, Total	BDL	UG/L	5	5	6020	06/12	22987
Chromium, Total	BDL	UG/L	10	5	6020	06/12	22987
Copper, Total	BDL	UG/L	25	5	6020	06/13	23014
Mercury, Total	BDL	UG/L	50	1	7470	06/13	22999
Nickel, Total	BDL	UG/L	40	5	6020	06/13	23014
Lead, Total	BDL	UG/L	50	5	6020	06/12	22987
Antimony, Total	BDL	UG/L	50	5	6020	06/12	22987

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

Attention: Kathy Thalman
Geraghty & Miller, Tampa, FL
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Date of Report: 07/23/96
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Collected By: CST
Date Received: 06/06/96 10:30

Cust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

Sample Desc: 960605-CO-02B-PW9001, Birmingham, AL

FL-DEP CompQAP: 900359G

Lab ID: 96 0006161

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23101
Thallium, Total	BDL	UG/L	10	5	6020	06/13	23014
Zinc, Total	BDL	UG/L	20	5	6020	06/13	23014
ORGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/03	23570
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/03	23570
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/03	23570
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/03	23570
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/03	23570
2-Chlorophenol	BDL	UG/L	10	1	8270	07/03	23570
bis-(2-Ethylhexyl) phthalate	BDL	UG/L	10	1	8270	07/03	23570
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/03	23570
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/03	23570
2-Nitroaniline	BDL	UG/L	50	1	8270	07/03	23570
2-Nitrophenol	BDL	UG/L	10	1	8270	07/03	23570
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/03	23570
3-Nitroaniline	BDL	UG/L	50	1	8270	07/03	23570
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/03	23570
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/03	23570
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/03	23570

020000

Note 'BDL' = Below Detection Limit

Distribution of Report:
Charles A. Jones - Sloss Industries

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Chris Given
Laboratory Director

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Environmental Testing Services

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ample Desc: 960605-CO-02B-PW9001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006161

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
4-Chloroaniline	BDL	UG/L	20	1	8270	07/03	23570
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/03	23570
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/03	23570
4-Nitroaniline	BDL	UG/L	50	1	8270	07/03	23570
4-Nitrophenol	BDL	UG/L	50	1	8270	07/03	23570
Acenaphthene	BDL	UG/L	10	1	8270	07/03	23570
Acenaphthylene	BDL	UG/L	10	1	8270	07/03	23570
Anthracene	BDL	UG/L	10	1	8270	07/03	23570
Benzyl alcohol	BDL	UG/L	10	1	8270	07/03	23570
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/03	23570
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/03	23570
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/03	23570
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/03	23570
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/03	23570
Chrysene	BDL	UG/L	10	1	8270	07/03	23570
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/03	23570
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/03	23570
Dibenzofuran	BDL	UG/L	10	1	8270	07/03	23570
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/03	23570
Di-n-butylphthalate	BDL	UG/L	10	1	8270	07/03	23570
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/03	23570
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
Diethylphthalate	BDL	UG/L	10	1	8270	07/03	23570
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/03	23570
Dimethylphthalate	BDL	UG/L	10	1	8270	07/03	23570
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/03	23570
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/03	23570
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/03	23570

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
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Chris Given
Laboratory Director

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Environmental Testing Services

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FL-DEP CompQAP: 900359G

ab ID: 96 0006161

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/03	23570
Fluorene	BDL	UG/L	10	1	8270	07/03	23570
Fluoranthene	BDL	UG/L	10	1	8270	07/03	23570
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/03	23570
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/03	23570
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
Hexachloroethane	BDL	UG/L	10	1	8270	07/03	23570
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/03	23570
Isophorone	BDL	UG/L	10	1	8270	07/03	23570
Naphthalene	BDL	UG/L	10	1	8270	07/03	23570
Nitrobenzene	BDL	UG/L	10	1	8270	07/03	23570
Pentachlorophenol	BDL	UG/L	50	1	8270	07/03	23570
Phenol	BDL	UG/L	10	1	8270	07/03	23570
Phenanthrene	BDL	UG/L	10	1	8270	07/03	23570
Pyrene	BDL	UG/L	10	1	8270	07/03	23570
Pyridine	BDL	UG/L	200	1	8270	07/03	23570
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/12	23183
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/12	23183
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/12	23183
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/12	23183
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/12	23183
1,2,3-Trichloropropane	1.2	UG/L	.5	1	8260	06/12	23183
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/12	23183
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/12	23183
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/12	23183
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/12	23183
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/12	23183

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

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ttention: Kathy Thalman
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FL-DEP CompQAP: 900359G

ab ID: 96 0006161

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Hexanone	BDL	UG/L	50	1	8260	06/12	23183
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/12	23183
Acetone	BDL	UG/L	50	1	8260	06/12	23183
Acrolein	BDL	UG/L	100	1	8260	06/12	23183
Acrylonitrile	BDL	UG/L	100	1	8260	06/12	23183
Benzene	BDL	UG/L	5	1	8260	06/12	23183
Bromodichloromethane	BDL	UG/L	5	1	8260	06/12	23183
Bromoform	BDL	UG/L	5	1	8260	06/12	23183
Bromomethane	BDL	UG/L	10	1	8260	06/12	23183
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/12	23183
Chloroform	BDL	UG/L	5	1	8260	06/12	23183
Chlorobenzene	BDL	UG/L	5	1	8260	06/12	23183
Chloroethane	BDL	UG/L	10	1	8260	06/12	23183
Chloromethane	BDL	UG/L	10	1	8260	06/12	23183
Carbon disulfide	BDL	UG/L	5	1	8260	06/12	23183
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/12	23183
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/12	23183
Dibromochloromethane	BDL	UG/L	10	1	8260	06/12	23183
Dibromomethane	BDL	UG/L	5	1	8260	06/12	23183
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/12	23183
Ethylbenzene	BDL	UG/L	5	1	8260	06/12	23183
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/12	23183
Iodomethane	BDL	UG/L	5	1	8260	06/12	23183
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/12	23183
Methylene chloride	BDL	UG/L	5	1	8260	06/12	23183
o-Xylene	0.6	UG/L	.5	1	8260	06/12	23183
Styrene	BDL	UG/L	5	1	8260	06/12	23183
Trichloroethene	BDL	UG/L	.5	1	8260	06/12	23183

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

000023

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

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ample Desc: 960605-CO-02B-PW9001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006161

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/12	23183
Tetrachloroethene	BDL	UG/L	5	1	8260	06/12	23183
Toluene	2.1	UG/L	.5	1	8260	06/12	23183
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/12	23183
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/12	23183
Vinyl acetate	BDL	UG/L	10	1	8260	06/12	23183
Vinyl chloride	BDL	UG/L	10	1	8260	06/12	23183
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/13	22962

ote 'BDL' = Below Detection Limit

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Laboratory Director

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Environmental Testing Services

ANALYSIS REPORT

Attention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Cust Proj: TF0320.014

Sample Desc: Trip Blank, Birmingham, AL

Lab ID: 96 0006162

Date of Report: 07/23/96
C-of-C Number: C14722
Date Collected: 05/31/96 10:40
Collected By: lrw
Date Received: 06/06/96 10:30

FL-DHRS Cert. No: E84254/84453

FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ORGANIC							
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/11	23209
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/11	23209
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/11	23209
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/11	23209
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/11	23209
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/11	23209
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/11	23209
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/11	23209
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/11	23209
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/11	23209
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/11	23209
2-Hexanone	BDL	UG/L	50	1	8260	06/11	23209
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/11	23209
Acetone	BDL	UG/L	50	1	8260	06/11	23209
Acrolein	BDL	UG/L	100	1	8260	06/11	23209
Acrylonitrile	BDL	UG/L	100	1	8260	06/11	23209
Benzene	BDL	UG/L	5	1	8260	06/11	23209
Bromodichloromethane	BDL	UG/L	5	1	8260	06/11	23209
Bromoform	BDL	UG/L	5	1	8260	06/11	23209
Bromomethane	BDL	UG/L	10	1	8260	06/11	23209
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/11	23209
Chloroform	BDL	UG/L	5	1	8260	06/11	23209
Chlorobenzene	BDL	UG/L	5	1	8260	06/11	23209
Chloroethane	BDL	UG/L	10	1	8260	06/11	23209
Chloromethane	BDL	UG/L	10	1	8260	06/11	23209
Carbon disulfide	BDL	UG/L	5	1	8260	06/11	23209

Note 'BDL' = Below Detection Limit

Distribution of Report:
Charles A. Jones - Sloss Industries

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Reviewed and Approved by:

Chris Given
Laboratory Director

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ust Proj: TF0320.014

ample Desc: Trip Blank, Birmingham, AL

ab ID: 96 0006162

Date of Report: 07/23/96
C-of-C Number: C14722
Date Collected: 05/31/96 10:40
Collected By: lrw
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FL-DHRS Cert. No: E84254/84453

FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/11	23209
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/11	23209
Dibromochloromethane	BDL	UG/L	10	1	8260	06/11	23209
Dibromomethane	BDL	UG/L	5	1	8260	06/11	23209
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/11	23209
Ethylbenzene	BDL	UG/L	5	1	8260	06/11	23209
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/11	23209
Iodomethane	BDL	UG/L	5	1	8260	06/11	23209
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/11	23209
Methylene chloride	BDL	UG/L	5	1	8260	06/11	23209
o-Xylene	BDL	UG/L	.5	1	8260	06/11	23209
Styrene	BDL	UG/L	5	1	8260	06/11	23209
Trichloroethene	BDL	UG/L	.5	1	8260	06/11	23209
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/11	23209
Tetrachloroethene	BDL	UG/L	5	1	8260	06/11	23209
Toluene	BDL	UG/L	.5	1	8260	06/11	23209
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/11	23209
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/11	23209
Vinyl acetate	BDL	UG/L	10	1	8260	06/11	23209
Vinyl chloride	BDL	UG/L	10	1	8260	06/11	23209

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLO[illegible]3716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14722
Date Collected: 06/05/96 11:15
Collected By: CST
Date Received: 06/06/96 10:30

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960605-CO-02B-FB0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006163

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	UG/L	10	5	6020	06/12	22987
Arsenic, Total	BDL	UG/L	10	5	6020	06/12	22987
Barium, Total	BDL	UG/L	10	5	6020	06/12	22987
Beryllium, Total	BDL	UG/L	5	5	6020	06/13	23014
Cadmium, Total	BDL	UG/L	5	5	6020	06/12	22987
Chromium, Total	BDL	UG/L	10	5	6020	06/12	22987
Copper, Total	BDL	UG/L	25	5	6020	06/13	23014
Mercury, Total	BDL	UG/L	50	1	7470	06/13	22999
Nickel, Total	BDL	UG/L	40	5	6020	06/13	23014
Lead, Total	BDL	UG/L	50	5	6020	06/12	22987
Antimony, Total	BDL	UG/L	50	5	6020	06/12	22987
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23101
Thallium, Total	BDL	UG/L	10	5	6020	06/13	23014
Zinc, Total	BDL	UG/L	20	5	6020	06/13	23014
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/03	23570
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/03	23570
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/03	23570
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/03	23570

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9333 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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Suite 115
Tampa FL 33618

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ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960605-CO-02B-FB0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006163

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/03	23570
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/03	23570
2-Chlorophenol	BDL	UG/L	10	1	8270	07/03	23570
bis-(2-Ethylhexyl) phthalate	BDL	UG/L	10	1	8270	07/03	23570
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/03	23570
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/03	23570
2-Nitroaniline	BDL	UG/L	50	1	8270	07/03	23570
2-Nitrophenol	BDL	UG/L	10	1	8270	07/03	23570
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/03	23570
3-Nitroaniline	BDL	UG/L	50	1	8270	07/03	23570
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/03	23570
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/03	23570
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/03	23570
4-Chloroaniline	BDL	UG/L	20	1	8270	07/03	23570
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/03	23570
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/03	23570
4-Nitroaniline	BDL	UG/L	50	1	8270	07/03	23570
4-Nitrophenol	BDL	UG/L	50	1	8270	07/03	23570
Acenaphthene	BDL	UG/L	10	1	8270	07/03	23570
Acenaphthylene	BDL	UG/L	10	1	8270	07/03	23570
Anthracene	BDL	UG/L	10	1	8270	07/03	23570
Benzyl alcohol	BDL	UG/L	10	1	8270	07/03	23570
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/03	23570
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/03	23570
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/03	23570
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/03	23570
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/03	23570
Chrysene	BDL	UG/L	10	1	8270	07/03	23570

820000

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istribution of Report:
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Environmental Testing Services

ANALYSIS REPORT

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Tampa FL 33618

ast Proj: TF0320.014

ample Desc: 960605-CO-02B-FB0001, Birmingham, AL

ab ID: 96 0006163

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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/03	23570
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/03	23570
Dibenzofuran	BDL	UG/L	10	1	8270	07/03	23570
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/03	23570
Di-n-butylphthalate	BDL	UG/L	10	1	8270	07/03	23570
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/03	23570
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
Diethylphthalate	BDL	UG/L	10	1	8270	07/03	23570
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/03	23570
Dimethylphthalate	BDL	UG/L	10	1	8270	07/03	23570
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/03	23570
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/03	23570
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/03	23570
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/03	23570
Fluorene	BDL	UG/L	10	1	8270	07/03	23570
Fluoranthene	BDL	UG/L	10	1	8270	07/03	23570
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/03	23570
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/03	23570
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
Hexachloroethane	BDL	UG/L	10	1	8270	07/03	23570
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/03	23570
Isophorone	BDL	UG/L	10	1	8270	07/03	23570
Naphthalene	BDL	UG/L	10	1	8270	07/03	23570
Nitrobenzene	BDL	UG/L	10	1	8270	07/03	23570
Pentachlorophenol	BDL	UG/L	50	1	8270	07/03	23570
Phenol	BDL	UG/L	10	1	8270	07/03	23570
Phenanthrene	BDL	UG/L	10	1	8270	07/03	23570
Pyrene	BDL	UG/L	10	1	8270	07/03	23570

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
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Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ample Desc: 960605-CO-02B-FB0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006163

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Pyridine	BDL	UG/L	200	1	8270	07/03	23570
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/12	23183
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/12	23183
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/12	23183
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/12	23183
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/12	23183
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/12	23183
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/12	23183
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/12	23183
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/12	23183
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/12	23183
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/12	23183
2-Hexanone	BDL	UG/L	50	1	8260	06/12	23183
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/12	23183
Acetone	BDL	UG/L	50	1	8260	06/12	23183
Acrolein	BDL	UG/L	100	1	8260	06/12	23183
Acrylonitrile	BDL	UG/L	100	1	8260	06/12	23183
Benzene	BDL	UG/L	5	1	8260	06/12	23183
Bromodichloromethane	BDL	UG/L	5	1	8260	06/12	23183
Bromoform	BDL	UG/L	5	1	8260	06/12	23183
Bromomethane	BDL	UG/L	10	1	8260	06/12	23183
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/12	23183
Chloroform	BDL	UG/L	5	1	8260	06/12	23183
Chlorobenzene	BDL	UG/L	5	1	8260	06/12	23183
Chloroethane	BDL	UG/L	10	1	8260	06/12	23183
Chloromethane	BDL	UG/L	10	1	8260	06/12	23183
Carbon disulfide	BDL	UG/L	5	1	8260	06/12	23183

0006163

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

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ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960605-CO-02B-FB0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006163

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/12	23183
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/12	23183
Dibromochloromethane	BDL	UG/L	10	1	8260	06/12	23183
Dibromomethane	BDL	UG/L	5	1	8260	06/12	23183
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/12	23183
Ethylbenzene	BDL	UG/L	5	1	8260	06/12	23183
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/12	23183
Iodomethane	BDL	UG/L	5	1	8260	06/12	23183
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/12	23183
Methylene chloride	BDL	UG/L	5	1	8260	06/12	23183
o-Xylene	BDL	UG/L	.5	1	8260	06/12	23183
Styrene	BDL	UG/L	5	1	8260	06/12	23183
Trichloroethene	BDL	UG/L	.5	1	8260	06/12	23183
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/12	23183
Tetrachloroethene	BDL	UG/L	5	1	8260	06/12	23183
Toluene	BDL	UG/L	.5	1	8260	06/12	23183
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/12	23183
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/12	23183
Vinyl acetate	BDL	UG/L	10	1	8260	06/12	23183
Vinyl chloride	BDL	UG/L	10	1	8260	06/12	23183
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/13	22962

0000031

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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FL-DHRS Cert. No: E84254/84453

ample Desc: 960605-CO-02B-PWEB01, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006164

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
DISSOLVED							
Silver, Dissolved	BDL	UG/L	10	5	6020	06/12	22989
Arsenic, Dissolved	BDL	UG/L	10	5	6020	06/12	22989
Barium, Dissolved	BDL	UG/L	10	5	6020	06/12	22989
Beryllium, Dissolved	BDL	UG/L	5	5	6020	06/13	23015
Cadmium, Dissolved	BDL	UG/L	5	5	6020	06/12	22989
Chromium, Dissolved	BDL	UG/L	10	5	6020	06/12	22989
Copper, Dissolved	BDL	UG/L	25	5	6020	06/13	23015
Mercury, Dissolved	BDL	UG/L	50	1	7470	06/13	23000
Nickel, Dissolved	BDL	UG/L	40	5	6020	06/13	23015
Lead, Dissolved	BDL	UG/L	50	5	6020	06/12	22989
Antimony, Dissolved	BDL	UG/L	50	5	6020	06/12	22989
Selenium, Dissolved	BDL	UG/L	10	1	270.2	06/19	23101
Thallium, Dissolved	BDL	UG/L	10	5	6020	06/13	23015
Zinc, Dissolved	BDL	UG/L	20	5	6020	06/13	23015
TOTAL							
Silver, Total	BDL	UG/L	10	5	6020	06/12	22987
Arsenic, Total	BDL	UG/L	10	5	6020	06/12	22987
Barium, Total	BDL	UG/L	10	5	6020	06/12	22987
Beryllium, Total	BDL	UG/L	5	5	6020	06/13	23014
Cadmium, Total	BDL	UG/L	5	5	6020	06/12	22987
Chromium, Total	BDL	UG/L	10	5	6020	06/12	22987
Copper, Total	BDL	UG/L	25	5	6020	06/13	23014
Mercury, Total	BDL	UG/L	50	1	7470	06/13	22999
Nickel, Total	BDL	UG/L	40	5	6020	06/13	23014
Lead, Total	BDL	UG/L	50	5	6020	06/12	22987
Antimony, Total	BDL	UG/L	50	5	6020	06/12	22987

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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Cust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

Sample Desc: 960605-CO-02B-PWEB01, Birmingham, AL

FL-DEP CompQAP: 900359G

Lab ID: 96 0006164

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23101
Thallium, Total	BDL	UG/L	10	5	6020	06/13	23014
Zinc, Total	BDL	UG/L	20	5	6020	06/13	23014
ORGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/08	23570
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23570
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23570
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23570
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/08	23570
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23570
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23570
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/08	23570
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23570
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23570
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23570
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/08	23570
2-Chlorophenol	BDL	UG/L	10	1	8270	07/08	23570
bis-(2-Ethylhexyl) phthalate	BDL	UG/L	10	1	8270	07/08	23570
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/08	23570
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/08	23570
2-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23570
2-Nitrophenol	BDL	UG/L	10	1	8270	07/08	23570
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/08	23570
3-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23570
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/08	23570
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23570
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/08	23570

0000033

Note 'BDL' = Below Detection Limit

Distribution of Report:
Charles A. Jones - Sloss Industries

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ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960605-CO-02B-PWEB01, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006164

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
4-Chloroaniline	BDL	UG/L	20	1	8270	07/08	23570
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23570
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/08	23570
4-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23570
4-Nitrophenol	BDL	UG/L	50	1	8270	07/08	23570
Acenaphthene	BDL	UG/L	10	1	8270	07/08	23570
Acenaphthylene	BDL	UG/L	10	1	8270	07/08	23570
Anthracene	BDL	UG/L	10	1	8270	07/08	23570
Benzyl alcohol	BDL	UG/L	10	1	8270	07/08	23570
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/08	23570
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/08	23570
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/08	23570
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/08	23570
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/08	23570
Chrysene	BDL	UG/L	10	1	8270	07/08	23570
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/08	23570
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/08	23570
Dibenzofuran	BDL	UG/L	10	1	8270	07/08	23570
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/08	23570
Di-n-butylphthalate	390	UG/L	10	1	8270	07/08	23570
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/08	23570
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23570
Diethylphthalate	BDL	UG/L	10	1	8270	07/08	23570
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/08	23570
Dimethylphthalate	BDL	UG/L	10	1	8270	07/08	23570
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/08	23570
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/08	23570
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/08	23570

0000034

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14722
Date Collected: 06/05/96 11:30
Collected By: CST
Date Received: 06/06/96 10:30

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960605-CO-02B-PWEB01, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006164

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/08	23570
Fluorene	BDL	UG/L	10	1	8270	07/08	23570
Fluoranthene	BDL	UG/L	10	1	8270	07/08	23570
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/08	23570
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/08	23570
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/08	23570
Hexachloroethane	BDL	UG/L	10	1	8270	07/08	23570
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/08	23570
Isophorone	BDL	UG/L	10	1	8270	07/08	23570
Naphthalene	BDL	UG/L	10	1	8270	07/08	23570
Nitrobenzene	BDL	UG/L	10	1	8270	07/08	23570
Pentachlorophenol	BDL	UG/L	50	1	8270	07/08	23570
Phenol	BDL	UG/L	10	1	8270	07/08	23570
Phenanthrene	BDL	UG/L	10	1	8270	07/08	23570
Pyrene	BDL	UG/L	10	1	8270	07/08	23570
Pyridine	BDL	UG/L	200	1	8270	07/08	23570
VOLATILES-GC/MS							
1,1,1-Trichloroethane	0.8	UG/L	.5	1	8260	06/12	23183
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/12	23183
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/12	23183
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/12	23183
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/12	23183
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/12	23183
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/12	23183
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/12	23183
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/12	23183
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/12	23183
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/12	23183

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

9030 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
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Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14722
Date Collected: 06/05/96 11:30
Collected By: CST
Date Received: 06/06/96 10:30

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960605-CO-02B-PWEB01, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006164

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Hexanone	BDL	UG/L	50	1	8260	06/12	23183
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/12	23183
Acetone	BDL	UG/L	50	1	8260	06/12	23183
Acrolein	BDL	UG/L	100	1	8260	06/12	23183
Acrylonitrile	BDL	UG/L	100	1	8260	06/12	23183
Benzene	BDL	UG/L	5	1	8260	06/12	23183
Bromodichloromethane	BDL	UG/L	5	1	8260	06/12	23183
Bromoform	BDL	UG/L	5	1	8260	06/12	23183
Bromomethane	BDL	UG/L	10	1	8260	06/12	23183
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/12	23183
Chloroform	BDL	UG/L	5	1	8260	06/12	23183
Chlorobenzene	BDL	UG/L	5	1	8260	06/12	23183
Chloroethane	BDL	UG/L	10	1	8260	06/12	23183
Chloromethane	BDL	UG/L	10	1	8260	06/12	23183
Carbon disulfide	BDL	UG/L	5	1	8260	06/12	23183
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/12	23183
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/12	23183
Dibromochloromethane	BDL	UG/L	10	1	8260	06/12	23183
Dibromomethane	BDL	UG/L	5	1	8260	06/12	23183
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/12	23183
Ethylbenzene	BDL	UG/L	5	1	8260	06/12	23183
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/12	23183
Iodomethane	BDL	UG/L	5	1	8260	06/12	23183
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/12	23183
Methylene chloride	BDL	UG/L	5	1	8260	06/12	23183
o-Xylene	BDL	UG/L	.5	1	8260	06/12	23183
Styrene	BDL	UG/L	5	1	8260	06/12	23183
Trichloroethene	BDL	UG/L	.5	1	8260	06/12	23183

000036

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14722
Date Collected: 06/05/96 11:30
Collected By: CST
Date Received: 06/06/96 10:30

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960605-CO-02B-PWEB01, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006164

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/12	23183
Tetrachloroethene	BDL	UG/L	5	1	8260	06/12	23183
Toluene	BDL	UG/L	.5	1	8260	06/12	23183
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/12	23183
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/12	23183
Vinyl acetate	BDL	UG/L	10	1	8260	06/12	23183
Vinyl chloride	BDL	UG/L	10	1	8260	06/12	23183
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/13	22962

0000037

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

tention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

st Proj: TF0320.014

mple Desc: Trip Blank, Birmingham, AL

b ID: 96 0006165

Date of Report: 07/23/96
C-of-C Number: C14722
Date Collected: 05/31/96 10:44
Collected By: lrw
Date Received: 06/06/96 10:30

FL-DHRS Cert. No: E84254/84453

FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
GANIC							
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/11	23209
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/11	23209
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/11	23209
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/11	23209
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/11	23209
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/11	23209
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/11	23209
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/11	23209
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/11	23209
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/11	23209
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/11	23209
2-Hexanone	BDL	UG/L	50	1	8260	06/11	23209
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/11	23209
Acetone	BDL	UG/L	50	1	8260	06/11	23209
Acrolein	BDL	UG/L	100	1	8260	06/11	23209
Acrylonitrile	BDL	UG/L	100	1	8260	06/11	23209
Benzene	BDL	UG/L	5	1	8260	06/11	23209
Bromodichloromethane	BDL	UG/L	5	1	8260	06/11	23209
Bromoform	BDL	UG/L	5	1	8260	06/11	23209
Bromomethane	BDL	UG/L	10	1	8260	06/11	23209
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/11	23209
Chloroform	BDL	UG/L	5	1	8260	06/11	23209
Chlorobenzene	BDL	UG/L	5	1	8260	06/11	23209
Chloroethane	BDL	UG/L	10	1	8260	06/11	23209
Chloromethane	BDL	UG/L	10	1	8260	06/11	23209
Carbon disulfide	BDL	UG/L	5	1	8260	06/11	23209

te 'BDL' = Below Detection Limit

stribution of Report:
arles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
Suite 115
Tampa FL 33618

ust Proj: TF0320.014

ample Desc: Trip Blank, Birmingham, AL

ab ID: 96 0006165

Date of Report: 07/23/96
C-of-C Number: C14722
Date Collected: 05/31/96 10:44
Collected By: lrw
Date Received: 06/06/96 10:30

FL-DHRS Cert. No: E84254/84453

FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/11	23209
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/11	23209
Dibromochloromethane	BDL	UG/L	10	1	8260	06/11	23209
Dibromomethane	BDL	UG/L	5	1	8260	06/11	23209
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/11	23209
Ethylbenzene	BDL	UG/L	5	1	8260	06/11	23209
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/11	23209
Iodomethane	BDL	UG/L	5	1	8260	06/11	23209
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/11	23209
Methylene chloride	BDL	UG/L	5	1	8260	06/11	23209
o-Xylene	BDL	UG/L	.5	1	8260	06/11	23209
Styrene	BDL	UG/L	5	1	8260	06/11	23209
Trichloroethene	BDL	UG/L	.5	1	8260	06/11	23209
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/11	23209
Tetrachloroethene	BDL	UG/L	5	1	8260	06/11	23209
Toluene	BDL	UG/L	.5	1	8260	06/11	23209
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/11	23209
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/11	23209
Vinyl acetate	BDL	UG/L	10	1	8260	06/11	23209
Vinyl chloride	BDL	UG/L	10	1	8260	06/11	23209

000035

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14749
Date Collected: 06/07/96 00:00
Collected By: CST
Date Received: 06/08/96 11:30

ast Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

mple Desc: 960607-CO-12-TB0004, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006240

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
RGANIC							
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/13	23183
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/13	23183
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/13	23183
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/13	23183
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/13	23183
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/13	23183
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/13	23183
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/13	23183
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/13	23183
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/13	23183
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/13	23183
2-Hexanone	BDL	UG/L	50	1	8260	06/13	23183
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/13	23183
Acetone	BDL	UG/L	50	1	8260	06/13	23183
Acrolein	BDL	UG/L	100	1	8260	06/13	23183
Acrylonitrile	BDL	UG/L	100	1	8260	06/13	23183
Benzene	BDL	UG/L	5	1	8260	06/13	23183
Bromodichloromethane	BDL	UG/L	5	1	8260	06/13	23183
Bromoform	BDL	UG/L	5	1	8260	06/13	23183
Bromomethane	BDL	UG/L	10	1	8260	06/13	23183
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/13	23183
Chloroform	BDL	UG/L	5	1	8260	06/13	23183
Chlorobenzene	BDL	UG/L	5	1	8260	06/13	23183
Chloroethane	BDL	UG/L	10	1	8260	06/13	23183
Chloromethane	BDL	UG/L	10	1	8260	06/13	23183
Carbon disulfide	BDL	UG/L	5	1	8260	06/13	23183

0006240

ote 'BDL' = Below Detection Limit

.stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
Suite 115
Tampa FL 33618

ast Proj: TF0320.014

ample Desc: 960607-CO-12-TB0004, Birmingham, AL

ab ID: 96 0006240

Date of Report: 07/23/96
C-of-C Number: C14749
Date Collected: 06/07/96 00:00
Collected By: CST
Date Received: 06/08/96 11:30

FL-DHRS Cert. No: E84254/84453

FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/13	23183
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/13	23183
Dibromochloromethane	BDL	UG/L	10	1	8260	06/13	23183
Dibromomethane	BDL	UG/L	5	1	8260	06/13	23183
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/13	23183
Ethylbenzene	BDL	UG/L	5	1	8260	06/13	23183
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/13	23183
Iodomethane	BDL	UG/L	5	1	8260	06/13	23183
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/13	23183
Methylene chloride	BDL	UG/L	5	1	8260	06/13	23183
o-Xylene	BDL	UG/L	.5	1	8260	06/13	23183
Styrene	BDL	UG/L	5	1	8260	06/13	23183
Trichloroethene	BDL	UG/L	.5	1	8260	06/13	23183
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/13	23183
Tetrachloroethene	BDL	UG/L	5	1	8260	06/13	23183
Toluene	BDL	UG/L	.5	1	8260	06/13	23183
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/13	23183
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/13	23183
Vinyl acetate	BDL	UG/L	10	1	8260	06/13	23183
Vinyl chloride	BDL	UG/L	10	1	8260	06/13	23183

000041

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14749
Date Collected: 06/07/96 14:15
Collected By: CST
Date Received: 06/08/96 11:30

ast Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

mple Desc: 960607-CO-02A-PW0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006244

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
DISSOLVED							
Silver, Dissolved	BDL	UG/L	10	5	6020	06/12	22989
Arsenic, Dissolved	70	UG/L	10	5	6020	06/12	22989
Barium, Dissolved	200	UG/L	10	5	6020	06/12	22989
Beryllium, Dissolved	BDL	UG/L	5	5	6020	06/13	23015
Cadmium, Dissolved	BDL	UG/L	5	5	6020	06/12	22989
Chromium, Dissolved	BDL	UG/L	10	5	6020	06/12	22989
Copper, Dissolved	BDL	UG/L	25	5	6020	06/13	23015
Mercury, Dissolved	BDL	UG/L	50	1	7470	06/13	23000
Nickel, Dissolved	BDL	UG/L	40	5	6020	06/13	23015
Lead, Dissolved	BDL	UG/L	50	5	6020	06/12	22989
Antimony, Dissolved	BDL	UG/L	50	5	6020	06/12	22989
Selenium, Dissolved	BDL	UG/L	10	1	270.2	06/19	23101
Thallium, Dissolved	BDL	UG/L	10	5	6020	06/13	23015
Zinc, Dissolved	BDL	UG/L	20	5	6020	06/13	23015
TOTAL							
Silver, Total	BDL	UG/L	10	5	6020	06/12	22987
Arsenic, Total	73	UG/L	10	5	6020	06/12	22987
Barium, Total	230	UG/L	10	5	6020	06/12	22987
Beryllium, Total	BDL	UG/L	5	5	6020	06/13	23014
Cadmium, Total	BDL	UG/L	5	5	6020	06/12	22987
Chromium, Total	BDL	UG/L	10	5	6020	06/12	22987
Copper, Total	BDL	UG/L	25	5	6020	06/13	23014
Mercury, Total	BDL	UG/L	50	1	7470	06/13	22999
Nickel, Total	BDL	UG/L	40	5	6020	06/13	23014
Lead, Total	BDL	UG/L	50	5	6020	06/12	22987
Antimony, Total	BDL	UG/L	50	5	6020	06/12	22987

ote 'BDL' = Below Detection Limit

.stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14749
Date Collected: 06/07/96 14:15
Collected By: CST
Date Received: 06/08/96 11:30

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960607-CO-02A-PW0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006244

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23101
Thallium, Total	BDL	UG/L	10	5	6020	06/13	23014
Zinc, Total	BDL	UG/L	20	5	6020	06/13	23014
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/03	23570
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/03	23570
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/03	23570
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/03	23570
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/03	23570
2-Chlorophenol	BDL	UG/L	10	1	8270	07/03	23570
bis-(2-Ethylhexyl) phthalate	BDL	UG/L	10	1	8270	07/03	23570
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/03	23570
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/03	23570
2-Nitroaniline	BDL	UG/L	50	1	8270	07/03	23570
2-Nitrophenol	BDL	UG/L	10	1	8270	07/03	23570
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/03	23570
3-Nitroaniline	BDL	UG/L	50	1	8270	07/03	23570
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/03	23570
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/03	23570
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/03	23570

0000243

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14749
Date Collected: 06/07/96 14:15
Collected By: CST
Date Received: 06/08/96 11:30

ast Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

mple Desc: 960607-CO-02A-PW0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006244

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
4-Chloroaniline	BDL	UG/L	20	1	8270	07/03	23570
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/03	23570
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/03	23570
4-Nitroaniline	BDL	UG/L	50	1	8270	07/03	23570
4-Nitrophenol	BDL	UG/L	50	1	8270	07/03	23570
Acenaphthene	BDL	UG/L	10	1	8270	07/03	23570
Acenaphthylene	BDL	UG/L	10	1	8270	07/03	23570
Anthracene	BDL	UG/L	10	1	8270	07/03	23570
Benzyl alcohol	BDL	UG/L	10	1	8270	07/03	23570
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/03	23570
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/03	23570
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/03	23570
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/03	23570
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/03	23570
Chrysene	BDL	UG/L	10	1	8270	07/03	23570
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/03	23570
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/03	23570
Dibenzofuran	BDL	UG/L	10	1	8270	07/03	23570
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/03	23570
Di-n-butylphthalate	BDL	UG/L	10	1	8270	07/03	23570
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/03	23570
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
Diethylphthalate	BDL	UG/L	10	1	8270	07/03	23570
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/03	23570
Dimethylphthalate	BDL	UG/L	10	1	8270	07/03	23570
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/03	23570
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/03	23570
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/03	23570

0006244

ote 'BDL' = Below Detection Limit

stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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Date of Report: 07/23/96
C-of-C Number: C14749
Date Collected: 06/07/96 14:15
Collected By: CST
Date Received: 06/08/96 11:30

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960607-CO-02A-PW0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006244

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/03	23570
Fluorene	BDL	UG/L	10	1	8270	07/03	23570
Fluoranthene	BDL	UG/L	10	1	8270	07/03	23570
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/03	23570
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/03	23570
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
Hexachloroethane	BDL	UG/L	10	1	8270	07/03	23570
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/03	23570
Isophorone	BDL	UG/L	10	1	8270	07/03	23570
Naphthalene	BDL	UG/L	10	1	8270	07/03	23570
Nitrobenzene	BDL	UG/L	10	1	8270	07/03	23570
Pentachlorophenol	BDL	UG/L	50	1	8270	07/03	23570
Phenol	BDL	UG/L	10	1	8270	07/03	23570
Phenanthrene	BDL	UG/L	10	1	8270	07/03	23570
Pyrene	BDL	UG/L	10	1	8270	07/03	23570
Pyridine	BDL	UG/L	200	1	8270	07/03	23570
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/19	23416
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/19	23416
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/19	23416
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/19	23416
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/19	23416
1,2,3-Trichloropropane	1.3	UG/L	.5	1	8260	06/19	23416
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/19	23416
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/19	23416
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/19	23416
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/19	23416
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/19	23416

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
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Date of Report: 07/23/96
C-of-C Number: C14749
Date Collected: 06/07/96 14:15
Collected By: CST
Date Received: 06/08/96 11:30

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960607-CO-02A-PW0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006244

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Hexanone	BDL	UG/L	50	1	8260	06/19	23416
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/19	23416
Acetone	BDL	UG/L	50	1	8260	06/19	23416
Acrolein	BDL	UG/L	100	1	8260	06/19	23416
Acrylonitrile	BDL	UG/L	100	1	8260	06/19	23416
Benzene	BDL	UG/L	5	1	8260	06/19	23416
Bromodichloromethane	BDL	UG/L	5	1	8260	06/19	23416
Bromoform	BDL	UG/L	5	1	8260	06/19	23416
Bromomethane	BDL	UG/L	10	1	8260	06/19	23416
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/19	23416
Chloroform	BDL	UG/L	5	1	8260	06/19	23416
Chlorobenzene	BDL	UG/L	5	1	8260	06/19	23416
Chloroethane	BDL	UG/L	10	1	8260	06/19	23416
Chloromethane	BDL	UG/L	10	1	8260	06/19	23416
Carbon disulfide	BDL	UG/L	5	1	8260	06/19	23416
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/19	23416
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/19	23416
Dibromochloromethane	BDL	UG/L	10	1	8260	06/19	23416
Dibromomethane	BDL	UG/L	5	1	8260	06/19	23416
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/19	23416
Ethylbenzene	BDL	UG/L	5	1	8260	06/19	23416
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/19	23416
Iodomethane	BDL	UG/L	5	1	8260	06/19	23416
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/19	23416
Methylene chloride	BDL	UG/L	5	1	8260	06/19	23416
o-Xylene	BDL	UG/L	.5	1	8260	06/19	23416
Styrene	BDL	UG/L	5	1	8260	06/19	23416
Trichloroethene	BDL	UG/L	.5	1	8260	06/19	23416

0006244

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

:tention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14749
Date Collected: 06/07/96 14:15
Collected By: CST
Date Received: 06/08/96 11:30

ıst Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960607-CO-02A-PW0001, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006244

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/19	23416
Tetrachloroethene	BDL	UG/L	5	1	8260	06/19	23416
Toluene	BDL	UG/L	.5	1	8260	06/19	23416
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/19	23416
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/19	23416
Vinyl acetate	BDL	UG/L	10	1	8260	06/19	23416
Vinyl chloride	BDL	UG/L	10	1	8260	06/19	23416
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/17	22962

0000047

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14750
Date Collected: 06/06/96 00:00
Collected By: CST
Date Received: 06/08/96 11:30

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960606-CO-12-TB0003, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006245

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
RGANIC							
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/18	23415
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/18	23415
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/18	23415
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/18	23415
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/18	23415
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/18	23415
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/18	23415
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/18	23415
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/18	23415
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/18	23415
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/18	23415
2-Hexanone	BDL	UG/L	50	1	8260	06/18	23415
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/18	23415
Acetone	BDL	UG/L	50	1	8260	06/18	23415
Acrolein	BDL	UG/L	100	1	8260	06/18	23415
Acrylonitrile	BDL	UG/L	100	1	8260	06/18	23415
Benzene	BDL	UG/L	5	1	8260	06/18	23415
Bromodichloromethane	BDL	UG/L	5	1	8260	06/18	23415
Bromoform	BDL	UG/L	5	1	8260	06/18	23415
Bromomethane	BDL	UG/L	10	1	8260	06/18	23415
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/18	23415
Chloroform	BDL	UG/L	5	1	8260	06/18	23415
Chlorobenzene	BDL	UG/L	5	1	8260	06/18	23415
Chloroethane	BDL	UG/L	10	1	8260	06/18	23415
Chloromethane	BDL	UG/L	10	1	8260	06/18	23415
Carbon disulfide	BDL	UG/L	5	1	8260	06/18	23415

0006245

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

:tention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14750
Date Collected: 06/06/96 00:00
Collected By: CST
Date Received: 06/08/96 11:30

ıst Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960606-CO-12-TB0003, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006245

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/18	23415
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/18	23415
Dibromochloromethane	BDL	UG/L	10	1	8260	06/18	23415
Dibromomethane	BDL	UG/L	5	1	8260	06/18	23415
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/18	23415
Ethylbenzene	BDL	UG/L	5	1	8260	06/18	23415
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/18	23415
Iodomethane	BDL	UG/L	5	1	8260	06/18	23415
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/18	23415
Methylene chloride	BDL	UG/L	5	1	8260	06/18	23415
o-Xylene	BDL	UG/L	.5	1	8260	06/18	23415
Styrene	BDL	UG/L	5	1	8260	06/18	23415
Trichloroethene	BDL	UG/L	.5	1	8260	06/18	23415
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/18	23415
Tetrachloroethene	BDL	UG/L	5	1	8260	06/18	23415
Toluene	1.7	UG/L	.5	1	8260	06/18	23415
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/18	23415
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/18	23415
Vinyl acetate	BDL	UG/L	10	1	8260	06/18	23415
Vinyl chloride	BDL	UG/L	10	1	8260	06/18	23415

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

tention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14750
Date Collected: 06/06/96 08:00
Collected By: CST
Date Received: 06/08/96 11:30

ast Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

mple Desc: 960606-CO-12-FB0002, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006246

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	UG/L	10	5	6020	06/12	22987
Arsenic, Total	31	UG/L	10	5	6020	06/12	22987
Barium, Total	BDL	UG/L	10	5	6020	06/12	22987
Beryllium, Total	BDL	UG/L	5	5	6020	06/13	23014
Cadmium, Total	BDL	UG/L	5	5	6020	06/12	22987
Chromium, Total	BDL	UG/L	10	5	6020	06/12	22987
Copper, Total	BDL	UG/L	25	5	6020	06/13	23014
Mercury, Total	BDL	UG/L	50	1	7470	06/13	22999
Nickel, Total	BDL	UG/L	40	5	6020	06/13	23014
Lead, Total	BDL	UG/L	50	5	6020	06/12	22987
Antimony, Total	BDL	UG/L	50	5	6020	06/12	22987
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23101
Thallium, Total	BDL	UG/L	10	5	6020	06/13	23014
Zinc, Total	BDL	UG/L	20	5	6020	06/13	23014
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/03	23570
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/03	23570
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/03	23570
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/03	23570

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLO. 3716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

:tention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14750
Date Collected: 06/06/96 08:00
Collected By: CST
Date Received: 06/08/96 11:30

ıst Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ımple Desc: 960606-CO-12-FB0002, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006246

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/03	23570
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/03	23570
2-Chlorophenol	BDL	UG/L	10	1	8270	07/03	23570
bis-(2-Ethylhexyl) phthalate	BDL	UG/L	10	1	8270	07/03	23570
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/03	23570
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/03	23570
2-Nitroaniline	BDL	UG/L	50	1	8270	07/03	23570
2-Nitrophenol	BDL	UG/L	10	1	8270	07/03	23570
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/03	23570
3-Nitroaniline	BDL	UG/L	50	1	8270	07/03	23570
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/03	23570
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/03	23570
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/03	23570
4-Chloroaniline	BDL	UG/L	20	1	8270	07/03	23570
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/03	23570
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/03	23570
4-Nitroaniline	BDL	UG/L	50	1	8270	07/03	23570
4-Nitrophenol	BDL	UG/L	50	1	8270	07/03	23570
Acenaphthene	BDL	UG/L	10	1	8270	07/03	23570
Acenaphthylene	BDL	UG/L	10	1	8270	07/03	23570
Anthracene	BDL	UG/L	10	1	8270	07/03	23570
Benzyl alcohol	BDL	UG/L	10	1	8270	07/03	23570
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/03	23570
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/03	23570
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/03	23570
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/03	23570
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/03	23570
Chrysene	BDL	UG/L	10	1	8270	07/03	23570

000051

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ab ID: 96 0006246

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/03	23570
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/03	23570
Dibenzofuran	BDL	UG/L	10	1	8270	07/03	23570
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/03	23570
Di-n-butylphthalate	1800	UG/L	10	1	8270	07/03	23570
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/03	23570
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/03	23570
Diethylphthalate	BDL	UG/L	10	1	8270	07/03	23570
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/03	23570
Dimethylphthalate	BDL	UG/L	10	1	8270	07/03	23570
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/03	23570
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/03	23570
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/03	23570
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/03	23570
Fluorene	BDL	UG/L	10	1	8270	07/03	23570
Fluoranthene	BDL	UG/L	10	1	8270	07/03	23570
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/03	23570
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/03	23570
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/03	23570
Hexachloroethane	BDL	UG/L	10	1	8270	07/03	23570
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/03	23570
Isophorone	BDL	UG/L	10	1	8270	07/03	23570
Naphthalene	BDL	UG/L	10	1	8270	07/03	23570
Nitrobenzene	BDL	UG/L	10	1	8270	07/03	23570
Pentachlorophenol	BDL	UG/L	50	1	8270	07/03	23570
Phenol	BDL	UG/L	10	1	8270	07/03	23570
Phenanthrene	BDL	UG/L	10	1	8270	07/03	23570
Pyrene	BDL	UG/L	10	1	8270	07/03	23570

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ab ID: 96 0006246

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Pyridine	BDL	UG/L	200	1	8270	07/03	23570
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/19	23416
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/19	23416
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/19	23416
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/19	23416
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/19	23416
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/19	23416
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/19	23416
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/19	23416
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/19	23416
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/19	23416
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/19	23416
2-Hexanone	BDL	UG/L	50	1	8260	06/19	23416
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/19	23416
Acetone	BDL	UG/L	50	1	8260	06/19	23416
Acrolein	BDL	UG/L	100	1	8260	06/19	23416
Acrylonitrile	BDL	UG/L	100	1	8260	06/19	23416
Benzene	BDL	UG/L	5	1	8260	06/19	23416
Bromodichloromethane	BDL	UG/L	5	1	8260	06/19	23416
Bromoform	BDL	UG/L	5	1	8260	06/19	23416
Bromomethane	BDL	UG/L	10	1	8260	06/19	23416
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/19	23416
Chloroform	BDL	UG/L	5	1	8260	06/19	23416
Chlorobenzene	BDL	UG/L	5	1	8260	06/19	23416
Chloroethane	BDL	UG/L	10	1	8260	06/19	23416
Chloromethane	BDL	UG/L	10	1	8260	06/19	23416
Carbon disulfide	BDL	UG/L	5	1	8260	06/19	23416

ote 'BDL' = Below Detection Limit

0006246

istribution of Report:
harles A. Jones - Sloss Industries

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Center For Applied Engineering, Inc.
Environmental Testing Services

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mple Desc: 960606-CO-12-FB0002, Birmingham, AL

FL-DEP CompQAP: 900359G

b ID: 96 0006246

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/19	23416
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/19	23416
Dibromochloromethane	BDL	UG/L	10	1	8260	06/19	23416
Dibromomethane	BDL	UG/L	5	1	8260	06/19	23416
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/19	23416
Ethylbenzene	BDL	UG/L	5	1	8260	06/19	23416
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/19	23416
Iodomethane	BDL	UG/L	5	1	8260	06/19	23416
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/19	23416
Methylene chloride	BDL	UG/L	5	1	8260	06/19	23416
o-Xylene	BDL	UG/L	.5	1	8260	06/19	23416
Styrene	BDL	UG/L	5	1	8260	06/19	23416
Trichloroethene	BDL	UG/L	.5	1	8260	06/19	23416
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/19	23416
Tetrachloroethene	BDL	UG/L	5	1	8260	06/19	23416
Toluene	BDL	UG/L	.5	1	8260	06/19	23416
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/19	23416
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/19	23416
Vinyl acetate	BDL	UG/L	10	1	8260	06/19	23416
Vinyl chloride	BDL	UG/L	10	1	8260	06/19	23416
T CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/17	22962

ote 'BDL' = Below Detection Limit

stribution of Report:
harles A. Jones - Sloss Industries

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Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
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ample Desc: 960606-CO-12-SLEB02, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006247

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	UG/L	10	5	6020	06/12	22987
Arsenic, Total	BDL	UG/L	10	5	6020	06/12	22987
Barium, Total	BDL	UG/L	10	5	6020	06/12	22987
Beryllium, Total	BDL	UG/L	5	5	6020	06/13	23014
Cadmium, Total	BDL	UG/L	5	5	6020	06/12	22987
Chromium, Total	BDL	UG/L	10	5	6020	06/12	22987
Copper, Total	BDL	UG/L	25	5	6020	06/13	23014
Mercury, Total	BDL	UG/L	50	1	7470	06/13	22999
Nickel, Total	BDL	UG/L	40	5	6020	06/13	23014
Lead, Total	BDL	UG/L	50	5	6020	06/12	22987
Antimony, Total	BDL	UG/L	50	5	6020	06/12	22987
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23101
Thallium, Total	BDL	UG/L	10	5	6020	06/13	23014
Zinc, Total	BDL	UG/L	20	5	6020	06/13	23014
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/08	23570
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23570
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23570
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23570
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/08	23570
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23570
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23570
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/08	23570
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23570
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23570

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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Chris Given
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Environmental Testing Services

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ample Desc: 960606-CO-12-SLEB02, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006247

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23570
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/08	23570
2-Chlorophenol	BDL	UG/L	10	1	8270	07/08	23570
bis-(2-Ethylhexyl) phthalate	BDL	UG/L	10	1	8270	07/08	23570
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/08	23570
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/08	23570
2-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23570
2-Nitrophenol	BDL	UG/L	10	1	8270	07/08	23570
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/08	23570
3-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23570
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/08	23570
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23570
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/08	23570
4-Chloroaniline	BDL	UG/L	20	1	8270	07/08	23570
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23570
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/08	23570
4-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23570
4-Nitrophenol	BDL	UG/L	50	1	8270	07/08	23570
Acenaphthene	BDL	UG/L	10	1	8270	07/08	23570
Acenaphthylene	BDL	UG/L	10	1	8270	07/08	23570
Anthracene	BDL	UG/L	10	1	8270	07/08	23570
Benzyl alcohol	BDL	UG/L	10	1	8270	07/08	23570
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/08	23570
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/08	23570
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/08	23570
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/08	23570
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/08	23570
Chrysene	BDL	UG/L	10	1	8270	07/08	23570

0006247

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/08	23570
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/08	23570
Dibenzofuran	BDL	UG/L	10	1	8270	07/08	23570
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/08	23570
Di-n-butylphthalate	420	UG/L	10	1	8270	07/08	23570
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/08	23570
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23570
Diethylphthalate	BDL	UG/L	10	1	8270	07/08	23570
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/08	23570
Dimethylphthalate	BDL	UG/L	10	1	8270	07/08	23570
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/08	23570
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/08	23570
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/08	23570
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/08	23570
Fluorene	BDL	UG/L	10	1	8270	07/08	23570
Fluoranthene	BDL	UG/L	10	1	8270	07/08	23570
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/08	23570
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/08	23570
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/08	23570
Hexachloroethane	BDL	UG/L	10	1	8270	07/08	23570
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/08	23570
Isophorone	BDL	UG/L	10	1	8270	07/08	23570
Naphthalene	BDL	UG/L	10	1	8270	07/08	23570
Nitrobenzene	BDL	UG/L	10	1	8270	07/08	23570
Pentachlorophenol	BDL	UG/L	50	1	8270	07/08	23570
Phenol	BDL	UG/L	10	1	8270	07/08	23570
Phenanthrene	BDL	UG/L	10	1	8270	07/08	23570
Pyrene	BDL	UG/L	10	1	8270	07/08	23570

250000

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FL-DHRS Cert. No: E84254/84453

ample Desc: 960606-CO-12-SLEB02, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006247

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Pyridine	BDL	UG/L	200	1	8270	07/08	23570
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/20	23421
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/20	23421
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/20	23421
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/20	23421
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/20	23421
2-Hexanone	BDL	UG/L	50	1	8260	06/20	23421
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/20	23421
Acetone	BDL	UG/L	50	1	8260	06/20	23421
Acrolein	BDL	UG/L	100	1	8260	06/20	23421
Acrylonitrile	BDL	UG/L	100	1	8260	06/20	23421
Benzene	BDL	UG/L	5	1	8260	06/20	23421
Bromodichloromethane	BDL	UG/L	5	1	8260	06/20	23421
Bromoform	BDL	UG/L	5	1	8260	06/20	23421
Bromomethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/20	23421
Chloroform	BDL	UG/L	5	1	8260	06/20	23421
Chlorobenzene	BDL	UG/L	5	1	8260	06/20	23421
Chloroethane	BDL	UG/L	10	1	8260	06/20	23421
Chloromethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon disulfide	BDL	UG/L	5	1	8260	06/20	23421

0006247

ote 'BDL' = Below Detection Limit

.stribution of Report:
ıarles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

:tention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/23/96
C-of-C Number: C14750
Date Collected: 06/06/96 08:15
Collected By: CST
Date Received: 06/08/96 11:30

ıst Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ımple Desc: 960606-CO-12-SLEB02, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006247

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/20	23421
Dibromochloromethane	BDL	UG/L	10	1	8260	06/20	23421
Dibromomethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/20	23421
Ethylbenzene	BDL	UG/L	5	1	8260	06/20	23421
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/20	23421
Iodomethane	BDL	UG/L	5	1	8260	06/20	23421
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/20	23421
Methylene chloride	BDL	UG/L	5	1	8260	06/20	23421
o-Xylene	BDL	UG/L	.5	1	8260	06/20	23421
Styrene	BDL	UG/L	5	1	8260	06/20	23421
Trichloroethene	BDL	UG/L	.5	1	8260	06/20	23421
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/20	23421
Tetrachloroethene	BDL	UG/L	5	1	8260	06/20	23421
Toluene	BDL	UG/L	.5	1	8260	06/20	23421
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Vinyl acetate	BDL	UG/L	10	1	8260	06/20	23421
Vinyl chloride	BDL	UG/L	10	1	8260	06/20	23421
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/17	22962

650000

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied
Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

Report Date: 07/23/96 QUALITY CONTROL REPORT BY LAB PROJECT NUMBER

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Project Number: 9606096

****
-->> SPIKE ACCURACY DATA <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
22962	CN-T	9012	0	.3661	.4	92	115	85		06/11/96	ejp	96	0006157
22987	Cr-MS	6020	0	90.1	100	90	125	75		06/12/96	sfl	96	0006157
22987	Pb-MS	6020	0	94.7	100	95	125	75		06/12/96	sfl	96	0006157
22987	Ag-MS	6020	0	85.5	100	86	125	75		06/12/96	sfl	96	0006157
22987	Sb-MS	6020	0	98.7	100	99	125	75		06/12/96	sfl	96	0006157
22987	Ba-MS	6020	40.3	136.2	100	96	125	75		06/12/96	sfl	96	0006157
22987	Cd-MS	6020	0	92.8	100	93	125	75		06/12/96	sfl	96	0006157
22987	As-MS	6020	9.9	102	100	92	125	75		06/12/96	sfl	96	0006157
22989	Cd-disMS	6020	0	93.3	100	93	125	75		06/12/96	jmn	96	0006157
22989	Ba-disMS	6020	33.5	129.2	100	96	125	75		06/12/96	jmn	96	0006157
22989	Ag-disMS	6020	0	62.2	100	62	125	75	*	06/12/96	jmn	96	0006157
22989	Pb-disMS	6020	0	95.9	100	96	125	75		06/12/96	jmn	96	0006157
22989	Sb-disMS	6020	0	100.6	100	101	125	75		06/12/96	jmn	96	0006157
22989	As-disMS	6020	9	101	100	92	125	75		06/12/96	jmn	96	0006157
22989	Cr-disMS	6020	0	91.3	100	91	125	75		06/12/96	jmn	96	0006157
22999	Hg	7470	0	2.183	2	109	125	75		06/13/96	dsb	96	0006157
23000	Hg-dis	7470	0	1.892	2	95	125	75		06/13/96	dsb	96	0006157
23014	Tl-MS	6020	0	97	100	97	125	75		06/13/96	jmn	96	0006157
23014	Ni-MS	6020	0	90	100	90	125	75		06/13/96	jmn	96	0006157
23014	Be-MS	6020	0	103	100	103	125	75		06/13/96	jmn	96	0006157
23014	Cu-MS	6020	0	88	100	88	125	75		06/13/96	jmn	96	0006157
23014	Zn-MS	6020	0	92	100	92	125	75		06/13/96	jmn	96	0006157
23015	Tl-MS	6020	0	101	100	101	125	75		06/13/96	jmn	96	0006157
23015	Cu-MS	6020	0	92	100	92	125	75		06/13/96	jmn	96	0006157
23015	Ni-MS	6020	0	92	100	92	125	75		06/13/96	jmn	96	0006157
23015	Zn-MS	6020	0	93	100	93	125	75		06/13/96	jmn	96	0006157
23015	Be-disMS	6020	0	104	100	104	125	75		06/13/96	jmn	96	0006157
23101	Se-gfdis	270.2	0	20.47	20	102	125	75		06/20/96	jmn	96	0006157
23101	Se-GF	7740	0	19.44	20	97	125	75		06/19/96	jmn	96	0006157
23182	cs13dcpb	8260	0	45.049	50	90	227	10		06/18/96	HLS	96	0006245
23182	Dcldflmb	8260	0	29.887	50	60	146	72	*	06/18/96	HLS	96	0006245
23182	Dibrclmb	8260	0	54.015	50	108	142	56		06/18/96	HLS	96	0006245
23182	Dibrmthb	8260	0	50.247	50	100	110	78		06/18/96	HLS	96	0006245
23182	EDBb	8260	0	53.493	50	107	112	70		06/18/96	HLS	96	0006245

Kathy Thalman
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Project Number: 9606096

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-->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23182	Clmthanb	8260	0	28.377	50	57	273	10		06/18/96	HLS	96	0006245
23182	Crbndisb	8260	0	29.791	50	60	138	37		06/18/96	HLS	96	0006245
23182	Brmethb	8260	0	36.741	50	73	242	10		06/18/96	HLS	96	0006245
23182	Carbtetb	8260	0	46.305	50	93	140	70		06/18/96	HLS	96	0006245
23182	Chlformb	8260	0	52.816	50	106	138	51		06/18/96	HLS	96	0006245
23182	Clbenzb	8260	0	50.912	50	102	136	68		06/18/96	HLS	96	0006245
23182	Clethanb	8260	0	35.228	50	70	119	64		06/18/96	HLS	96	0006245
23182	2Hexanob	8260	0	81.962	100	82	164	10		06/18/96	HLS	96	0006245
23182	4Me2Penb	8260	0	89.767	100	90	111	68		06/18/96	HLS	96	0006245
23182	Acetoneb	8260	0	561.02	1000	56	161	10		06/18/96	HLS	96	0006245
23182	Acrolenb	8260	0	358.594	1000	36	132	60	*	06/18/96	HLS	96	0006245
23182	14dc2beb	8260	0	77.879	100	78	129	11		06/18/96	HLS	96	0006245
23182	2Butanob	8260	0	94.889	100	95	208	79		06/18/96	HLS	96	0006245
23182	2Ceve	8260	0	4.49	50	9	199	10	*	06/18/96	HLS	96	0006245
23182	12DCAb	8260	0	48.298	50	97	155	49		06/18/96	HLS	96	0006245
23182	12Dcprob	8260	0	50.619	50	101	210	10		06/18/96	HLS	96	0006245
23182	11DCAb	8260	0	42.539	50	85	155	59		06/18/96	HLS	96	0006245
23182	11DCEb	8260	0	32.173	50	64	136	60		06/18/96	HLS	96	0006245
23182	123Tclpb	8260	0	60.85	50	122	103	44	*	06/18/96	HLS	96	0006245
23182	Acrylonb	8260	0	604.066	1000	60	108	77	*	06/18/96	HLS	96	0006245
23182	Benzeneb	8260	0	46.876	50	94	144	73		06/18/96	HLS	96	0006245
23182	Brdiclmb	8260	0	49.266	50	99	155	35		06/18/96	HLS	96	0006245
23182	Brformb	8260	0	47.439	50	95	169	45		06/18/96	HLS	96	0006245
23182	111TCAb	8260	0	46.129	50	92	162	52		06/18/96	HLS	96	0006245
23182	1122TCAb	8260	0	56.994	50	114	157	46		06/18/96	HLS	96	0006245
23182	112TCAb	8260	0	52.211	50	104	150	52		06/18/96	HLS	96	0006245
23182	iodomthb	8260	0	32.219	50	64	137	37		06/18/96	HLS	96	0006245
23182	mpXylenb	8260	0	49.842	50	100	114	66		06/18/96	HLS	96	0006245
23182	Mthenecb	8260	0	16.672	50	33	221	10		06/18/96	HLS	96	0006245
23182	oXyleneb	8260	0	50.188	50	100	114	66		06/18/96	HLS	96	0006245
23182	Styreneb	8260	0	46.808	50	94	109	61		06/18/96	HLS	96	0006245
23182	TCEb	8260	0	50.348	50	101	136	66		06/18/96	HLS	96	0006245
23182	Tclflmtb	8260	0	29.002	50	58	181	17		06/18/96	HLS	96	0006245
23182	Tetcletb	8260	0	56.614	50	113	148	64		06/18/96	HLS	96	0006245

190000

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Project Number: 9606096

****
-->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23182	Tolueneb	8260	1.706	50.355	50	97	138	68		06/18/96	HLS	96	0006245
23182	tr12DCEb	8260	0	42.842	50	86	156	54		06/18/96	HLS	96	0006245
23182	tr13dcpb	8260	0	46.896	50	94	183	17		06/18/96	HLS	96	0006245
23182	Vinylace	8260	0	29.245	50	58	147	49		06/18/96	HLS	96	0006245
23182	Vinylclb	8260	0	29.595	50	59	251	10		06/18/96	HLS	96	0006245
23182	Ethbenzb	8260	0	50.156	50	100	162	37		06/18/96	HLS	96	0006245
23182	ethylmab	8260	0	60.816	100	61	139	37		06/18/96	HLS	96	0006245
23183	Tolueneb	8260	1.897	54.753	50	106	138	68		06/12/96	HLS	96	0006157
23183	tr12DCEb	8260	0	44.599	50	89	156	54		06/12/96	HLS	96	0006157
23183	tr13dcpb	8260	0	52.504	50	105	183	17		06/12/96	HLS	96	0006157
23183	Vinylace	8260	0	123.417	100	123	147	49		06/12/96	HLS	96	0006157
23183	Vinylclb	8260	0	45.257	50	91	251	10		06/12/96	HLS	96	0006157
23183	Ethbenzb	8260	0	48.016	50	96	162	37		06/12/96	HLS	96	0006157
23183	ethylmab	8260	0	125.485	100	125	139	37		06/12/96	HLS	96	0006157
23183	iodomthb	8260	0	98.959	100	99	137	37		06/12/96	HLS	96	0006157
23183	cs13dcpb	8260	0	51.528	50	103	227	10		06/12/96	HLS	96	0006157
23183	Dcldflmb	8260	0	40.694	50	81	146	72		06/12/96	HLS	96	0006157
23183	Dibrclmb	8260	0	49.264	50	99	142	56		06/12/96	HLS	96	0006157
23183	Dibrmthb	8260	0	49.578	50	99	110	78		06/12/96	HLS	96	0006157
23183	EDBb	8260	0	50.129	50	100	112	70		06/12/96	HLS	96	0006157
23183	Chlformb	8260	0	47.379	50	95	138	51		06/12/96	HLS	96	0006157
23183	Clbenzb	8260	0	50.231	50	100	136	68		06/12/96	HLS	96	0006157
23183	Clethanb	8260	0	41.409	50	83	119	64		06/12/96	HLS	96	0006157
23183	Clmthanb	8260	0	44.613	50	89	273	10		06/12/96	HLS	96	0006157
23183	Crbndisb	8260	0	92.811	100	93	138	37		06/12/96	HLS	96	0006157
23183	Brdiclmb	8260	0	49.245	50	98	155	35		06/12/96	HLS	96	0006157
23183	Brformb	8260	0	53.232	50	106	169	45		06/12/96	HLS	96	0006157
23183	Brmethb	8260	0	40.213	50	80	242	10		06/12/96	HLS	96	0006157
23183	Carbtetb	8260	0	37.144	50	74	140	70		06/12/96	HLS	96	0006157
23183	2Butanob	8260	0	113.467	100	113	208	79		06/12/96	HLS	96	0006157
23183	2Ceve	8260	0	0	50	1	199	10	*	06/12/96	HLS	96	0006157
23183	2Hexanob	8260	0	117.517	100	118	164	10		06/12/96	HLS	96	0006157
23183	12Dcprob	8260	0	53.244	50	106	210	10		06/12/96	HLS	96	0006157
23183	14dc2beb	8260	0	101.932	100	102	129	11		06/12/96	HLS	96	0006157

Kathy Thalman
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14497 North Dale Mabry
Suite 115
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Project Number: 9606096

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-->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23183	111TCAb	8260	.238	45.932	50	91	162	52		06/12/96	HLS	96	0006157
23183	1122TCAb	8260	0	53.807	50	108	157	46		06/12/96	HLS	96	0006157
23183	112TCAb	8260	0	51.021	50	102	150	52		06/12/96	HLS	96	0006157
23183	11DCAb	8260	0	45.53	50	91	155	59		06/12/96	HLS	96	0006157
23183	11DCEb	8260	0	42.526	50	85	136	60		06/12/96	HLS	96	0006157
23183	4Me2Penb	8260	.897	114.918	100	114	111	68	*	06/12/96	HLS	96	0006157
23183	Acetoneb	8260	0	1045.39	1000	105	161	10		06/12/96	HLS	96	0006157
23183	Acrolenb	8260	0	966.904	1000	97	132	60		06/12/96	HLS	96	0006157
23183	Acrylonb	8260	0	1096.35	1000	110	108	77	*	06/12/96	HLS	96	0006157
23183	Benzeneb	8260	0	51.732	50	103	144	73		06/12/96	HLS	96	0006157
23183	mpXylenb	8260	1.03	51.059	50	100	114	66		06/12/96	HLS	96	0006157
23183	Mthenecb	8260	0	45.792	50	92	221	10		06/12/96	HLS	96	0006157
23183	oXyleneb	8260	.635	50.469	50	100	114	66		06/12/96	HLS	96	0006157
23183	Styreneb	8260	0	51.758	50	104	109	61		06/12/96	HLS	96	0006157
23183	TCEb	8260	0	49.959	50	100	136	66		06/12/96	HLS	96	0006157
23183	Tclflmtb	8260	0	39.847	50	80	181	17		06/12/96	HLS	96	0006157
23183	Tetcletb	8260	0	49.74	50	99	148	64		06/12/96	HLS	96	0006157
23183	123Tclpb	8260	0	49.95	50	100	103	44		06/12/96	HLS	96	0006157
23183	12DCAb	8260	0	50.978	50	102	155	49		06/12/96	HLS	96	0006157
23415	14dc2beb	8260	0	77.879	100	78	129	11		06/18/96	HLS	96	0006245
23415	2Butanob	8260	0	94.889	100	95	208	79		06/18/96	HLS	96	0006245
23415	12Dcprob	8260	0	50.619	50	101	210	10		06/18/96	HLS	96	0006245
23415	12DCAb	8260	0	48.298	50	97	155	49		06/18/96	HLS	96	0006245
23415	112TCAb	8260	0	52.211	50	104	150	52		06/18/96	HLS	96	0006245
23415	11DCAb	8260	0	42.539	50	85	155	59		06/18/96	HLS	96	0006245
23415	11DCEb	8260	0	32.173	50	64	136	60		06/18/96	HLS	96	0006245
23415	123Tclpb	8260	0	60.85	50	122	103	44	*	06/18/96	HLS	96	0006245
23415	111TCAb	8260	0	46.129	50	92	162	52		06/18/96	HLS	96	0006245
23415	1122TCAb	8260	0	56.994	50	114	157	46		06/18/96	HLS	96	0006245
23415	Clethanb	8260	0	35.228	50	70	119	64		06/18/96	HLS	96	0006245
23415	Tclflmtb	8260	0	29.002	50	58	181	17		06/18/96	HLS	96	0006245
23415	Tetcletb	8260	0	56.614	50	113	148	64		06/18/96	HLS	96	0006245
23415	Tolueneb	8260	1.706	50.355	50	97	138	68		06/18/96	HLS	96	0006245
23415	tr12DCEb	8260	0	42.842	50	86	156	54		06/18/96	HLS	96	0006245

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Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
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Project Number: 9606096

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-->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23415	tr13dcpb	8260	0	46.896	50	94	183	17		06/18/96	HLS	96	0006245
23415	Vinylace	8260	0	29.245	100	29	147	49	*	06/18/96	HLS	96	0006245
23415	Vinylclb	8260	0	29.595	50	59	251	10		06/18/96	HLS	96	0006245
23415	oXyleneb	8260	0	50.188	50	100	114	66		06/18/96	HLS	96	0006245
23415	Styreneb	8260	0	46.808	50	94	109	61		06/18/96	HLS	96	0006245
23415	TCEb	8260	0	50.348	50	101	136	66		06/18/96	HLS	96	0006245
23415	mpXylenb	8260	0	49.842	50	100	114	66		06/18/96	HLS	96	0006245
23415	Mthenecb	8260	0	16.672	50	33	221	10		06/18/96	HLS	96	0006245
23415	Dibrmthb	8260	0	50.247	50	100	110	78		06/18/96	HLS	96	0006245
23415	EDBb	8260	0	53.493	50	107	112	70		06/18/96	HLS	96	0006245
23415	Ethbenzb	8260	0	50.156	50	100	162	37		06/18/96	HLS	96	0006245
23415	ethylmab	8260	0	60.816	100	61	139	37		06/18/96	HLS	96	0006245
23415	iodomthb	8260	0	32.219	100	32	137	37	*	06/18/96	HLS	96	0006245
23415	Clmthanb	8260	0	28.377	50	57	273	10		06/18/96	HLS	96	0006245
23415	Crbndisb	8260	0	29.791	100	30	138	37	*	06/18/96	HLS	96	0006245
23415	cs13dcpb	8260	0	45.049	50	90	227	10		06/18/96	HLS	96	0006245
23415	Dcldflmb	8260	0	29.887	50	60	146	72	*	06/18/96	HLS	96	0006245
23415	Dibrclmb	8260	0	54.015	50	108	142	56		06/18/96	HLS	96	0006245
23415	Brmethb	8260	0	36.741	50	73	242	10		06/18/96	HLS	96	0006245
23415	Carbtetb	8260	0	46.305	50	93	140	70		06/18/96	HLS	96	0006245
23415	Chlformb	8260	0	52.816	50	106	138	51		06/18/96	HLS	96	0006245
23415	Clbenzb	8260	0	50.912	50	102	136	68		06/18/96	HLS	96	0006245
23415	Acrolenb	8260	0	358.594	1000	36	132	60	*	06/18/96	HLS	96	0006245
23415	Acrylonb	8260	0	604.066	1000	60	108	77	*	06/18/96	HLS	96	0006245
23415	Benzeneb	8260	0	46.876	50	94	144	73		06/18/96	HLS	96	0006245
23415	Brdiclmb	8260	0	49.266	50	99	155	35		06/18/96	HLS	96	0006245
23415	Brformb	8260	0	47.439	50	95	169	45		06/18/96	HLS	96	0006245
23415	2Ceve	8260	0	4.49	50	9	199	10	*	06/18/96	HLS	96	0006245
23415	2Hexanob	8260	0	81.962	100	82	164	10		06/18/96	HLS	96	0006245
23415	4Me2Penb	8260	0	89.767	100	90	111	68		06/18/96	HLS	96	0006245
23415	Acetoneb	8260	0	561.02	1000	56	161	10		06/18/96	HLS	96	0006245
23416	iodomthb	8260	0	88.735	100	89	137	37		06/19/96	HLS	96	0006345
23416	11DCEb	8260	0	41.73	50	83	136	60		06/19/96	HLS	96	0006345
23416	oXyleneb	8260	0	48.199	50	96	114	66		06/19/96	HLS	96	0006345

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-->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23416	123Tclpb	8260	0	54.507	50	109	103	44	*	06/19/96	HLS	96	0006345
23416	Styreneb	8260	0	46.805	50	94	109	61		06/19/96	HLS	96	0006345
23416	TCEb	8260	0	47.893	50	96	136	66		06/19/96	HLS	96	0006345
23416	Tclflmtb	8260	0	48.197	50	96	181	17		06/19/96	HLS	96	0006345
23416	Tetcletb	8260	0	50.622	50	101	148	64		06/19/96	HLS	96	0006345
23416	Tolueneb	8260	0	47.343	50	95	138	68		06/19/96	HLS	96	0006345
23416	tr12DCEb	8260	0	43.708	50	87	156	54		06/19/96	HLS	96	0006345
23416	tr13dcpb	8260	0	45.753	50	92	183	17		06/19/96	HLS	96	0006345
23416	12DCAb	8260	0	50.105	50	100	155	49		06/19/96	HLS	96	0006345
23416	12Dcprob	8260	0	48.114	50	96	210	10		06/19/96	HLS	96	0006345
23416	Vinylace	8260	0	47.216	100	47	147	49	*	06/19/96	HLS	96	0006345
23416	Vinylclb	8260	0	34.874	50	70	251	10		06/19/96	HLS	96	0006345
23416	14dc2beb	8260	0	79.943	100	80	129	11		06/19/96	HLS	96	0006345
23416	2Butanob	8260	0	121.392	100	121	208	79		06/19/96	HLS	96	0006345
23416	2Ceve	8260	0	5.088	50	10	199	10		06/19/96	HLS	96	0006345
23416	111TCAb	8260	0	48.81	50	98	162	52		06/19/96	HLS	96	0006345
23416	1122TCAb	8260	0	52.585	50	105	157	46		06/19/96	HLS	96	0006345
23416	2Hexanob	8260	0	121.528	100	122	164	10		06/19/96	HLS	96	0006345
23416	4Me2Penb	8260	0	112.675	100	113	111	68	*	06/19/96	HLS	96	0006345
23416	Acetoneb	8260	0	1129.23	1000	113	161	10		06/19/96	HLS	96	0006345
23416	Acrolenb	8260	0	488.545	1000	49	132	60	*	06/19/96	HLS	96	0006345
23416	Acrylonb	8260	0	1128.09	1000	113	108	77	*	06/19/96	HLS	96	0006345
23416	Benzeneb	8260	0	45.792	50	92	144	73		06/19/96	HLS	96	0006345
23416	Brdiclmb	8260	0	50.569	50	101	155	35		06/19/96	HLS	96	0006345
23416	Brformb	8260	0	51.989	50	104	169	45		06/19/96	HLS	96	0006345
23416	Brmethb	8260	0	40.441	50	81	242	10		06/19/96	HLS	96	0006345
23416	Carbtetb	8260	0	43.934	50	88	140	70		06/19/96	HLS	96	0006345
23416	Chlformb	8260	3.067	56.227	50	106	138	51		06/19/96	HLS	96	0006345
23416	Clbenzb	8260	0	48.697	50	97	136	68		06/19/96	HLS	96	0006345
23416	Clethanb	8260	0	47.022	50	94	119	64		06/19/96	HLS	96	0006345
23416	Clmthanb	8260	0	37.387	50	75	273	10		06/19/96	HLS	96	0006345
23416	Crbndisb	8260	0	88.976	100	89	138	37		06/19/96	HLS	96	0006345
23416	cs13dcpb	8260	0	43.933	50	88	227	10		06/19/96	HLS	96	0006345
23416	Dcldflmb	8260	0	36.332	50	73	146	72		06/19/96	HLS	96	0006345

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->> S P I K E A C C U R A C Y D A T A continued <<---
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C Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23416	Dibrclmb	8260	0	52.087	50	104	142	56		06/19/96	HLS	96	0006345
23416	Dibrmthb	8260	0	50.454	50	101	110	78		06/19/96	HLS	96	0006345
23416	EDBb	8260	0	51.365	50	103	112	70		06/19/96	HLS	96	0006345
23416	Ethbenzb	8260	0	48.915	50	98	162	37		06/19/96	HLS	96	0006345
23416	ethylmab	8260	0	97.547	100	98	139	37		06/19/96	HLS	96	0006345
23416	112TCAb	8260	0	52.711	50	105	150	52		06/19/96	HLS	96	0006345
23416	11DCAb	8260	0	46.176	50	92	155	59		06/19/96	HLS	96	0006345
23416	mpXylenb	8260	0	47.23	50	94	114	66		06/19/96	HLS	96	0006345
23416	Mthenecb	8260	0	43.939	50	88	221	10		06/19/96	HLS	96	0006345
23421	Tolueneb	8260	1.08	47.804	50	93	138	68		06/20/96	HLS	96	0006349
23421	tr12DCEb	8260	0	45.279	50	91	156	54		06/20/96	HLS	96	0006349
23421	tr13dcpb	8260	0	49.447	50	99	183	17		06/20/96	HLS	96	0006349
23421	Vinylace	8260	0	38.297	100	38	147	49	*	06/20/96	HLS	96	0006349
23421	Vinylclb	8260	0	39.374	50	79	251	10		06/20/96	HLS	96	0006349
23421	Styreneb	8260	0	47.195	50	94	109	61		06/20/96	HLS	96	0006349
23421	TCEb	8260	0	46.835	50	94	136	66		06/20/96	HLS	96	0006349
23421	Tclflmtb	8260	0	47.079	50	94	181	17		06/20/96	HLS	96	0006349
23421	Tetcletb	8260	0	51.918	50	104	148	64		06/20/96	HLS	96	0006349
23421	mpXylenb	8260	0	49.218	50	98	114	66		06/20/96	HLS	96	0006349
23421	Mthenecb	8260	0	48.26	50	97	221	10		06/20/96	HLS	96	0006349
23421	oXyleneb	8260	0	48.66	50	97	114	66		06/20/96	HLS	96	0006349
23421	Ethbenzb	8260	0	48.89	50	98	162	37		06/20/96	HLS	96	0006349
23421	ethylmab	8260	0	71.964	100	72	139	37		06/20/96	HLS	96	0006349
23421	iodomthb	8260	0	96.5	100	97	137	37		06/20/96	HLS	96	0006349
23421	Dcldflmb	8260	0	41.128	50	82	146	72		06/20/96	HLS	96	0006349
23421	Dibrclmb	8260	0	52.853	50	106	142	56		06/20/96	HLS	96	0006349
23421	Dibrmthb	8260	0	51.512	50	103	110	78		06/20/96	HLS	96	0006349
23421	EDBb	8260	0	51.624	50	103	112	70		06/20/96	HLS	96	0006349
23421	Brmethb	8260	1.329	46.319	50	90	242	10		06/20/96	HLS	96	0006349
23421	Carbtetb	8260	0	44.483	50	89	140	70		06/20/96	HLS	96	0006349
23421	Chlformb	8260	2.726	55.328	50	105	138	51		06/20/96	HLS	96	0006349
23421	Clbenzb	8260	0	49.063	50	98	136	68		06/20/96	HLS	96	0006349
23421	Clethanb	8260	0	54.029	50	108	119	64		06/20/96	HLS	96	0006349
23421	Clmthanb	8260	0	37.927	50	76	273	10		06/20/96	HLS	96	0006349

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-->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23421	Crbndisb	8260	0	91.389	100	91	138	37		06/20/96	HLS	96	0006349
23421	cs13dcpb	8260	0	48.842	50	98	227	10		06/20/96	HLS	96	0006349
23421	Acrylonb	8260	0	1043.66	1000	104	108	77		06/20/96	HLS	96	0006349
23421	Benzeneb	8260	4.94	47.82	50	86	144	73		06/20/96	HLS	96	0006349
23421	Brdiclmb	8260	0	52.809	50	106	155	35		06/20/96	HLS	96	0006349
23421	Brformb	8260	0	49.908	50	100	169	45		06/20/96	HLS	96	0006349
23421	2Hexanob	8260	0	102.209	100	102	164	10		06/20/96	HLS	96	0006349
23421	4Me2Penb	8260	0	99.868	100	100	111	68		06/20/96	HLS	96	0006349
23421	Acetoneb	8260	0	1086.45	1000	109	161	10		06/20/96	HLS	96	0006349
23421	Acrolenb	8260	0	397.812	1000	40	132	60	*	06/20/96	HLS	96	0006349
23421	14dc2beb	8260	0	86.731	100	87	129	11		06/20/96	HLS	96	0006349
23421	2Butanob	8260	0	118.023	100	118	208	79		06/20/96	HLS	96	0006349
23421	2Ceve	8260	0	5.921	50	12	199	10		06/20/96	HLS	96	0006349
23421	12DCAb	8260	0	50.832	50	102	155	49		06/20/96	HLS	96	0006349
23421	12Dcprob	8260	0	45.791	50	92	210	10		06/20/96	HLS	96	0006349
23421	11DCEb	8260	0	45.24	50	90	136	60		06/20/96	HLS	96	0006349
23421	123Tclpb	8260	0	53.49	50	107	103	44	*	06/20/96	HLS	96	0006349
23421	111TCAb	8260	0	50.227	50	100	162	52		06/20/96	HLS	96	0006349
23421	1122TCAb	8260	0	52.981	50	106	157	46		06/20/96	HLS	96	0006349
23421	112TCAb	8260	0	53.301	50	107	150	52		06/20/96	HLS	96	0006349
23421	11DCAb	8260	0	49.205	50	98	155	59		06/20/96	HLS	96	0006349
23570	phenolb	8270	0	58.91	150	39	96	10		07/03/96	SCL	96	0006157
23570	2clphenb	8270	0	116.2	150	77	199	54		07/03/96	SCL	96	0006157
23570	14dcbsb	8270	0	87.18	100	87	110	46		07/03/96	SCL	96	0006157
23570	nNdpamnb	8270	0	87.06	100	87	150	30		07/03/96	SCL	96	0006157
23570	PCPb	8270	0	113.26	150	76	139	15		07/03/96	SCL	96	0006157
23570	Pyreneb	8270	0	86.34	100	86	153	36		07/03/96	SCL	96	0006157
23570	4nitpheb	8270	0	59.71	150	40	112	10		07/03/96	SCL	96	0006157
23570	124Tcbsb	8270	0	82.7	100	83	108	49		07/03/96	SCL	96	0006157
23570	4cl3mepb	8270	0	128.95	150	86	104	53		07/03/96	SCL	96	0006157
23570	Acenaphb	8270	0	85.99	100	86	116	65		07/03/96	SCL	96	0006157
23570	24Dintob	8270	0	85.75	100	86	133	39		07/03/96	SCL	96	0006157

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-->> Q. C. R. S. A C C U R A C Y D A T A <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
22962	CN-T	9012	.268	.2333	87.1	115	85		06/11/96	ejp

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-->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
22987	Cr-MS	6020	100	90.3	90.3	120	80		06/12/96	sfl
22987	Pb-MS	6020	100	93.8	93.8	120	80		06/12/96	sfl
22987	Ag-MS	6020	100	86.5	86.5	120	80		06/12/96	sfl
22987	Sb-MS	6020	100	96.8	96.8	120	80		06/12/96	sfl
22987	Ba-MS	6020	100	96.5	96.5	120	80		06/12/96	sfl
22987	Cd-MS	6020	100	91.8	91.8	120	80		06/12/96	sfl
22987	As-MS	6020	100	90.4	90.4	120	80		06/12/96	sfl
22989	Cd-disMS	6020	100	94.3	94.3	120	80		06/12/96	jmn
22989	Ba-disMS	6020	100	99.5	99.5	120	80		06/12/96	jmn
22989	Ag-disMS	6020	100	89.8	89.8	120	80		06/12/96	jmn
22989	Pb-disMS	6020	100	97.5	97.5	120	80		06/12/96	jmn
22989	Sb-disMS	6020	100	100.1	100.1	120	80		06/12/96	jmn
22989	As-disMS	6020	100	94.9	94.9	120	80		06/12/96	jmn
22989	Cr-disMS	6020	100	94.1	94.1	120	80		06/12/96	jmn
22999	Hg	7470	2.00	2.132	106.6	120	80		06/13/96	dsb
23000	Hg-dis	7470	2.00	1.968	98.4	120	80		06/13/96	dsb
23014	Tl-MS	6020	100	97	97.0	120	80		06/13/96	jmn
23014	Ni-MS	6020	100	90	90.0	120	80		06/13/96	jmn
23014	Be-MS	6020	100	103	103.0	120	80		06/13/96	jmn
23014	Cu-MS	6020	100	87	87.0	120	80		06/13/96	jmn
23014	Zn-MS	6020	100	89	89.0	120	80		06/13/96	jmn
23015	Tl-MS	6020	100	105	105.0	120	80		06/13/96	jmn
23015	Cu-MS	6020	100	92	92.0	120	80		06/13/96	jmn
23015	Ni-MS	6020	100	95	95.0	120	80		06/13/96	jmn
23015	Zn-MS	6020	100	94	94.0	120	80		06/13/96	jmn
23015	Be-disMS	6020	100	108	108.0	120	80		06/13/96	jmn
23101	Se-gfdis	270.2	20	22.3	111.5	120	80		06/20/96	jmn
23101	Se-GF	7740	20	19.7	98.5	120	80		06/19/96	jmn
23182	cs13dcpb	8260	50.0	48.207	96.4	227	10		06/18/96	HLS
23182	Dcldflmb	8260	50.0	35.298	70.6	146	72	*	06/18/96	HLS
23182	Dibrclmb	8260	50.0	51.688	103.4	142	56		06/18/96	HLS
23182	Dibrmthb	8260	50	50.572	101.1	110	78		06/18/96	HLS
23182	EDBb	8260	50.0	54.724	109.4	112	70		06/18/96	HLS
23182	Clmthanb	8260	50.0	35.616	71.2	273	10		06/18/96	HLS

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->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23182	Crbndisb	8260	50.0	79.332	158.7	138	37	*	06/18/96	HLS
23182	Brmethb	8260	50.0	44.209	88.4	242	10		06/18/96	HLS
23182	Carbtetb	8260	50.0	43.72	87.4	140	70		06/18/96	HLS
23182	Chlformb	8260	50.0	51.073	102.1	138	51		06/18/96	HLS
23182	Clbenzb	8260	50.0	48.857	97.7	136	68		06/18/96	HLS
23182	Clethanb	8260	50.0	45.288	90.6	119	64		06/18/96	HLS
23182	2Hexanob	8260	100	99.835	99.8	164	10		06/18/96	HLS
23182	4Me2Penb	8260	100	101.298	101.3	115	68		06/18/96	HLS
23182	Acetoneb	8260	1000	809.09	80.9	161	10		06/18/96	HLS
23182	Acrolenb	8260	1000	820.809	82.1	132	60		06/18/96	HLS
23182	14dc2beb	8260	100	69.255	69.3	129	11		06/18/96	HLS
23182	2Butanob	8260	100	104.08	104.1	208	79		06/18/96	HLS
23182	2Ceve	8260	100	76.97	77.0	199	10		06/18/96	HLS
23182	12DCAb	8260	50.0	46.739	93.5	155	49		06/18/96	HLS
23182	12Dcprob	8260	50.0	50.216	100.4	210	10		06/18/96	HLS
23182	11DCAb	8260	50.0	45.88	91.8	155	59		06/18/96	HLS
23182	11DCEb	8260	50.0	43.954	87.9	136	60		06/18/96	HLS
23182	123Tclpb	8260	50.0	53.847	107.7	115	44		06/18/96	HLS
23182	Acrylonb	8260	1000	953.541	95.4	115	77		06/18/96	HLS
23182	Benzeneb	8260	50.0	49.758	99.5	144	73		06/18/96	HLS
23182	Brdiclmb	8260	50.0	49.415	98.8	155	35		06/18/96	HLS
23182	Brformb	8260	50.0	45.722	91.4	169	45		06/18/96	HLS
23182	111TCAb	8260	50.0	48.041	96.1	162	52		06/18/96	HLS
23182	1122TCAb	8260	50.0	35.349	70.7	157	46		06/18/96	HLS
23182	112TCAb	8260	50.0	61.004	122.0	150	52		06/18/96	HLS
23182	iodomthb	8260	100	73.174	73.2	137	37		06/18/96	HLS
23182	mpXylenb	8260	50	47.355	94.7	114	66		06/18/96	HLS
23182	Mthenecb	8260	50.0	47.711	95.4	221	10		06/18/96	HLS
23182	oXyleneb	8260	50	46.112	92.2	114	66		06/18/96	HLS
23182	Styreneb	8260	50	45.86	91.7	109	61		06/18/96	HLS
23182	TCEb	8260	50.0	63.964	127.9	136	66		06/18/96	HLS
23182	Tclflmtb	8260	50.0	41.069	82.1	181	17		06/18/96	HLS
23182	Tetcleth	8260	50.0	98.139	196.3	148	64	*	06/18/96	HLS
23182	Tolueneb	8260	50.0	48.999	98.0	138	68		06/18/96	HLS

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****
->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23182	tr12DCEb	8260	50.0	45.636	91.3	156	54		06/18/96	HLS
23182	tr13dcpb	8260	50.0	46.845	93.7	183	17		06/18/96	HLS
23182	Vinylace	8260	50.0	19.546	39.1	147	49	*	06/18/96	HLS
23182	Vinylclb	8260	50	36.527	73.1	251	10		06/18/96	HLS
23182	Ethbenzb	8260	50.0	49.404	98.8	162	37		06/18/96	HLS
23182	ethylmab	8260	100	79.154	79.2	139	37		06/18/96	HLS
23183	Tolueneb	8260	50	52.132	104.3	138	68		06/12/96	HLS
23183	tr12DCEb	8260	50	45.944	91.9	156	54		06/12/96	HLS
23183	tr13dcpb	8260	50	48.911	97.8	183	17		06/12/96	HLS
23183	Vinylace	8260	100	103.846	103.8	147	49		06/12/96	HLS
23183	Vinylclb	8260	50	45.844	91.7	251	10		06/12/96	HLS
23183	Ethbenzb	8260	50	47.677	95.4	162	37		06/12/96	HLS
23183	ethylmab	8260	100	117.46	117.5	139	37		06/12/96	HLS
23183	iodomthb	8260	100	56.88	56.9	137	37		06/12/96	HLS
23183	cs13dcpb	8260	50	48.284	96.6	227	10		06/12/96	HLS
23183	Dcldflmb	8260	50	40.934	81.9	146	72		06/12/96	HLS
23183	Dibrclmb	8260	50	50.397	100.8	142	56		06/12/96	HLS
23183	Dibrmthb	8260	50	49.866	99.7	110	78		06/12/96	HLS
23183	EDBb	8260	50	53	106.0	112	70		06/12/96	HLS
23183	Chlformb	8260	50	46.161	92.3	138	51		06/12/96	HLS
23183	Clbenzb	8260	50	48.243	96.5	136	68		06/12/96	HLS
23183	Clethanb	8260	50	34.996	70.0	119	64		06/12/96	HLS
23183	Clmthanb	8260	50	48.945	97.9	273	10		06/12/96	HLS
23183	Crbndisb	8260	100	72.868	72.9	138	37		06/12/96	HLS
23183	Brdiclmb	8260	50	49.616	99.2	155	35		06/12/96	HLS
23183	Brformb	8260	50	57.391	114.8	169	45		06/12/96	HLS
23183	Brmethb	8260	50	43.681	87.4	242	10		06/12/96	HLS
23183	Carbtetb	8260	50	49.815	99.6	140	70		06/12/96	HLS
23183	2Butanob	8260	100	137.308	137.3	208	79		06/12/96	HLS
23183	2Ceve	8260	50	94.937	189.9	199	10		06/12/96	HLS
23183	2Hexanob	8260	100	137.329	137.3	164	10		06/12/96	HLS
23183	12Dcprob	8260	50	54.413	108.8	210	10		06/12/96	HLS
23183	14dc2beb	8260	100	90.723	90.7	129	11		06/12/96	HLS
23183	111TCAb	8260	50	43.583	87.2	162	52		06/12/96	HLS

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****
->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23183	1122TCAb	8260	50	60.214	120.4	157	46		06/12/96	HLS
23183	112TCAb	8260	50	52.908	105.8	150	52		06/12/96	HLS
23183	11DCAb	8260	50	44.815	89.6	155	59		06/12/96	HLS
23183	11DCEb	8260	50	34.856	69.7	136	60		06/12/96	HLS
23183	4Me2Penb	8260	100	137.627	137.6	115	68	*	06/12/96	HLS
23183	Acetoneb	8260	1000	1115.07	111.5	161	10		06/12/96	HLS
23183	Acrolenb	8260	1000	999.146	99.9	132	60		06/12/96	HLS
23183	Acrylonb	8260	1000	1337.55	133.8	115	77	*	06/12/96	HLS
23183	Benzeneb	8260	50	53.556	107.1	144	73		06/12/96	HLS
23183	mpXylenb	8260	50	47.269	94.5	114	66		06/12/96	HLS
23183	Mthenecb	8260	50	36.032	72.1	221	10		06/12/96	HLS
23183	oXyleneb	8260	50	49.966	99.9	114	66		06/12/96	HLS
23183	Styreneb	8260	50	52.224	104.4	109	61		06/12/96	HLS
23183	TCEb	8260	50	48.984	98.0	136	66		06/12/96	HLS
23183	Tclflmtb	8260	50	27.026	54.1	181	17		06/12/96	HLS
23183	Tetcletb	8260	50	48.729	97.5	148	64		06/12/96	HLS
23183	123Tclpb	8260	50	53.542	107.1	115	44		06/12/96	HLS
23183	12DCAb	8260	50	50.49	101.0	155	49		06/12/96	HLS
23209	111TCAb	8260	50	48.437	96.9	162	52		06/11/96	HLS
23209	Dcldflmb	8260	50	57.249	114.5	146	72		06/11/96	HLS
23209	Dibrclmb	8260	50	46.457	92.9	142	56		06/11/96	HLS
23209	Dibrmthb	8260	50	50.049	100.1	110	78		06/11/96	HLS
23209	Brmethb	8260	50	59.531	119.1	242	10		06/11/96	HLS
23209	Carbtetb	8260	50	46.93	93.9	140	70		06/11/96	HLS
23209	Chlformb	8260	50	57.123	114.2	138	51		06/11/96	HLS
23209	11DCEb	8260	50	49.128	98.3	136	60		06/11/96	HLS
23209	123Tclpb	8260	50	39.997	80.0	115	44		06/11/96	HLS
23209	EDBb	8260	50	48.369	96.7	112	70		06/11/96	HLS
23209	Ethbenzb	8260	50	49.81	99.6	162	37		06/11/96	HLS
23209	ethylmab	8260	100	24.265	24.3	139	37	*	06/11/96	HLS
23209	1122TCAb	8260	50	45.657	91.3	157	46		06/11/96	HLS
23209	iodomthb	8260	100	101.557	101.6	137	37		06/11/96	HLS
23209	mpXylenb	8260	50	51.31	102.6	114	66		06/11/96	HLS
23209	Mthenecb	8260	50	77.240	154.5	221	10		06/11/96	HLS

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-->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23209	oXyleneb	8260	50	53.203	106.4	114	66		06/11/96	HLS
23209	Clbenzb	8260	50	51.601	103.2	136	68		06/11/96	HLS
23209	Clethanb	8260	50	79.83	159.7	119	64	*	06/11/96	HLS
23209	Clmthanb	8260	50	69.977	140.0	273	10		06/11/96	HLS
23209	2Butanob	8260	100	79.208	79.2	208	79		06/11/96	HLS
23209	Styreneb	8260	50	48.564	97.1	109	61		06/11/96	HLS
23209	TCEb	8260	50	47.591	95.2	136	66		06/11/96	HLS
23209	Tclflmtb	8260	50	68.724	137.4	181	17		06/11/96	HLS
23209	Tetcletb	8260	50	40.931	81.9	148	64		06/11/96	HLS
23209	Tolueneb	8260	50	49.104	98.2	138	68		06/11/96	HLS
23209	4Me2Penb	8260	100	77.272	77.3	115	68		06/11/96	HLS
23209	Acetoneb	8260	1000	952.762	95.3	161	10		06/11/96	HLS
23209	tr12DCEb	8260	50	61.708	123.4	156	54		06/11/96	HLS
23209	tr13dcpb	8260	50	46.157	92.3	183	17		06/11/96	HLS
23209	Vinylace	8260	100	16.747	16.7	147	49	*	06/11/96	HLS
23209	Vinylclb	8260	50	71.263	142.5	251	10		06/11/96	HLS
23209	112TCAb	8260	50	48.398	96.8	150	52		06/11/96	HLS
23209	11DCAb	8260	50	51.099	102.2	155	59		06/11/96	HLS
23209	Brdiclmb	8260	50	51.425	102.9	155	35		06/11/96	HLS
23209	Brformb	8260	50	41.229	82.5	169	45		06/11/96	HLS
23209	12Dcprob	8260	50	48.918	97.8	210	10		06/11/96	HLS
23209	Crbndisb	8260	100	88.172	88.2	138	37		06/11/96	HLS
23209	cs13dcpb	8260	50	47.63	95.3	227	10		06/11/96	HLS
23209	Acrolenb	8260	1000	323.258	32.3	132	60	*	06/11/96	HLS
23209	Acrylonb	8260	1000	1089.29	108.9	115	77		06/11/96	HLS
23209	Benzeneb	8260	50	58.651	117.3	144	73		06/11/96	HLS
23209	2Ceve	8260	50	83.467	166.9	199	10		06/11/96	HLS
23209	2Hexanob	8260	100	63.273	63.3	164	10		06/11/96	HLS
23209	14dc2beb	8260	100	73.431	73.4	129	11		06/11/96	HLS
23209	12DCAb	8260	50	47.228	94.5	155	49		06/11/96	HLS
23415	14dc2beb	8260	100	69.255	69.3	129	11		06/18/96	HLS
23415	2Butanob	8260	100	104.08	104.1	208	79		06/18/96	HLS
23415	12Dcprob	8260	50	50.216	100.4	210	10		06/18/96	HLS
23415	12DCAb	8260	50	46.739	93.5	155	49		06/18/96	HLS

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-->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23415	112TCAb	8260	50	61.004	122.0	150	52		06/18/96	HLS
23415	11DCAb	8260	50	45.88	91.8	155	59		06/18/96	HLS
23415	11DCEb	8260	50	43.954	87.9	136	60		06/18/96	HLS
23415	123Tclpb	8260	50	53.847	107.7	115	44		06/18/96	HLS
23415	111TCAb	8260	50	48.041	96.1	162	52		06/18/96	HLS
23415	1122TCAb	8260	50	35.349	70.7	157	46		06/18/96	HLS
23415	Clethanb	8260	50	45.288	90.6	119	64		06/18/96	HLS
23415	Tclflmtb	8260	50	41.069	82.1	181	17		06/18/96	HLS
23415	Tetcletb	8260	50	52.071	104.1	148	64		06/18/96	HLS
23415	Tolueneb	8260	50	48.999	98.0	138	68		06/18/96	HLS
23415	tr12DCEb	8260	50	45.636	91.3	156	54		06/18/96	HLS
23415	tr13dcpb	8260	50	46.845	93.7	183	17		06/18/96	HLS
23415	Vinylace	8260	100	19.546	19.5	147	49	*	06/18/96	HLS
23415	Vinylclb	8260	50	36.527	73.1	251	10		06/18/96	HLS
23415	oXyleneb	8260	50	46.112	92.2	114	66		06/18/96	HLS
23415	Styreneb	8260	50	45.86	91.7	109	61		06/18/96	HLS
23415	TCEb	8260	50	63.964	127.9	136	66		06/18/96	HLS
23415	mpXylenb	8260	50	47.355	94.7	114	66		06/18/96	HLS
23415	Mthenecb	8260	50	47.711	95.4	221	10		06/18/96	HLS
23415	Dibrmthb	8260	50	50.572	101.1	110	78		06/18/96	HLS
23415	EDBb	8260	50	54.724	109.4	112	70		06/18/96	HLS
23415	Ethbenzb	8260	50	49.404	98.8	162	37		06/18/96	HLS
23415	ethylmab	8260	100	79.154	79.2	139	37		06/18/96	HLS
23415	iodomthb	8260	100	73.174	73.2	137	37		06/18/96	HLS
23415	Clmthanb	8260	50	35.616	71.2	273	10		06/18/96	HLS
23415	Crbndisb	8260	100	79.332	79.3	138	37		06/18/96	HLS
23415	cs13dcpb	8260	50	48.207	96.4	227	10		06/18/96	HLS
23415	Dcldflmb	8260	50	44.043	88.1	146	72		06/18/96	HLS
23415	Dibrclmb	8260	50	51.688	103.4	142	56		06/18/96	HLS
23415	Brmethb	8260	50	44.209	88.4	242	10		06/18/96	HLS
23415	Carbtetb	8260	50	43.72	87.4	140	70		06/18/96	HLS
23415	Chlformb	8260	50	51.073	102.1	138	51		06/18/96	HLS
23415	Clbenzb	8260	50	48.857	97.7	136	68		06/18/96	HLS
23415	Acrolenb	8260	1000	820.809	82.1	132	60		06/18/96	HLS

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****
->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23415	Acrylonb	8260	1000	953.541	95.4	115	77		06/18/96	HLS
23415	Benzeneb	8260	50	49.758	99.5	144	73		06/18/96	HLS
23415	Brdiclmb	8260	50	49.415	98.8	155	35		06/18/96	HLS
23415	Brformb	8260	50	45.722	91.4	169	45		06/18/96	HLS
23415	2Ceve	8260	50	76.97	153.9	199	10		06/18/96	HLS
23415	2Hexanob	8260	100	99.835	99.8	164	10		06/18/96	HLS
23415	4Me2Penb	8260	100	101.298	101.3	115	68		06/18/96	HLS
23415	Acetoneb	8260	1000	809.09	80.9	161	10		06/18/96	HLS
23421	Tolueneb	8260	50	48.461	96.9	138	68		06/20/96	HLS
23421	tr12DCEb	8260	50	43.307	86.6	156	54		06/20/96	HLS
23421	tr13dcpb	8260	50	46.01	92.0	183	17		06/20/96	HLS
23421	Vinylace	8260	100	105.58	105.6	147	49		06/20/96	HLS
23421	Vinylclb	8260	50	33.966	67.9	251	10		06/20/96	HLS
23421	Styreneb	8260	50	48.578	97.2	109	61		06/20/96	HLS
23421	TCEb	8260	50	47.702	95.4	136	66		06/20/96	HLS
23421	Tclflmtb	8260	50	41.552	83.1	181	17		06/20/96	HLS
23421	Tetcletb	8260	50	44.901	89.8	148	64		06/20/96	HLS
23421	mpXylenb	8260	50	53.828	107.7	114	66		06/20/96	HLS
23421	Mthenecb	8260	50	43.227	86.5	221	10		06/20/96	HLS
23421	oXyleneb	8260	50	52.745	105.5	114	66		06/20/96	HLS
23421	Ethbenzb	8260	50	47.503	95.0	162	37		06/20/96	HLS
23421	ethylmab	8260	100	109.408	109.4	139	37		06/20/96	HLS
23421	iodomthb	8260	100	86.865	86.9	137	37		06/20/96	HLS
23421	Dcldflmb	8260	50	49.812	99.6	146	72		06/20/96	HLS
23421	Dibrclmb	8260	50	45.566	91.1	142	56		06/20/96	HLS
23421	Dibrmthb	8260	50	50.197	100.4	110	78		06/20/96	HLS
23421	EDBb	8260	50	48.149	96.3	112	70		06/20/96	HLS
23421	Brmethb	8260	50	41.105	82.2	242	10		06/20/96	HLS
23421	Carbtetb	8260	50	43.626	87.3	140	70		06/20/96	HLS
23421	Chlformb	8260	50	48.866	97.7	138	51		06/20/96	HLS
23421	Clbenzb	8260	50	45.568	91.1	136	68		06/20/96	HLS
23421	Clethanb	8260	50	45.964	91.9	119	64		06/20/96	HLS
23421	Clmthanb	8260	50	37.564	75.1	273	10		06/20/96	HLS
23421	Crbndisb	8260	100	85.145	85.1	138	37		06/20/96	HLS

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-->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23421	cs13dcpb	8260	50	46.146	92.3	227	10		06/20/96	HLS
23421	Acrylonb	8260	1000	1173.15	117.3	115	77	*	06/20/96	HLS
23421	Benzeneb	8260	50	48.424	96.8	144	73		06/20/96	HLS
23421	Brdiclmb	8260	50	50.094	100.2	155	35		06/20/96	HLS
23421	Brformb	8260	50	49.849	99.7	169	45		06/20/96	HLS
23421	2Hexanob	8260	100	117.129	117.1	164	10		06/20/96	HLS
23421	4Me2Penb	8260	100	115.154	115.2	115	68	*	06/20/96	HLS
23421	Acetoneb	8260	1000	1397.86	139.8	161	10		06/20/96	HLS
23421	Acrolenb	8260	1000	851.687	85.2	132	60		06/20/96	HLS
23421	14dc2beb	8260	100	96.981	97.0	129	11		06/20/96	HLS
23421	2Butanob	8260	100	135.103	135.1	208	79		06/20/96	HLS
23421	2Ceve	8260	50	36.454	72.9	199	10		06/20/96	HLS
23421	12DCAb	8260	50	50.235	100.5	155	49		06/20/96	HLS
23421	12Dcprob	8260	50	47.636	95.3	210	10		06/20/96	HLS
23421	11DCEb	8260	50	41.892	83.8	136	60		06/20/96	HLS
23421	123Tclpb	8260	50	27.847	55.7	115	44		06/20/96	HLS
23421	111TCAb	8260	50	47.932	95.9	162	52		06/20/96	HLS
23421	1122TCAb	8260	50	27.607	55.2	157	46		06/20/96	HLS
23421	112TCAb	8260	50	51.244	102.5	150	52		06/20/96	HLS
23421	11DCAb	8260	50	44.15	88.3	155	59		06/20/96	HLS
23570	phenolb	8270	150	81.3	54.2	115	10		07/03/96	SCL
23570	2clphenb	8270	150	88.16	58.8	199	54		07/03/96	SCL
23570	14dcbsb	8270	100	53.21	53.2	110	46		07/03/96	SCL
23570	nNdpamnb	8270	100	59.89	59.9	150	30		07/03/96	SCL
23570	PCPb	8270	150	64.9	43.3	139	15		07/03/96	SCL
23570	Pyreneb	8270	100	55.14	55.1	153	36		07/03/96	SCL
23570	4nitpheb	8270	150	81.58	54.4	112	10		07/03/96	SCL
23570	124Tcbsb	8270	100	55.67	55.7	108	49		07/03/96	SCL
23570	4cl3mepb	8270	150	80.93	54.0	104	53		07/03/96	SCL
23570	Acenaphb	8270	100	52.11	52.1	116	65	*	07/03/96	SCL
23570	24Dintob	8270	100	52.62	52.6	133	39		07/03/96	SCL

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-->> P R E C I S I O N D A T A <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
22962	CN-T	9012	.3556	.3661	2.90979	30		96	0006157	06/11/96	ejp

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->> P R E C I S I O N D A T A continued <<---

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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
22987	Cr-MS	6020	90.1	92.1	2.19538	20		96	0006157	06/12/96	sfl
22987	Pb-MS	6020	94.7	96.8	2.19321	20		96	0006157	06/12/96	sfl
22987	Ag-MS	6020	85.2	85.5	.351493	20		96	0006157	06/12/96	sfl
22987	Sb-MS	6020	98.7	100.6	1.90667	20		96	0006157	06/12/96	sfl
22987	Ba-MS	6020	136.2	138.5	1.67455	20		96	0006157	06/12/96	sfl
22987	Cd-MS	6020	92.8	94.4	1.70940	20		96	0006157	06/12/96	sfl
22987	As-MS	6020	102	104.8	2.70793	20		96	0006157	06/12/96	sfl
22989	Cd-disMS	6020	93.3	93.9	.641025	20		96	0006157	06/12/96	jmn
22989	Ba-disMS	6020	129.2	128.7	.387747	20		96	0006157	06/12/96	jmn
22989	Ag-disMS	6020	62.2	61.2	1.62074	20		96	0006157	06/12/96	jmn
22989	Pb-disMS	6020	95.9	95.9	0	20		96	0006157	06/12/96	jmn
22989	Sb-disMS	6020	100.4	100.6	.199005	20		96	0006157	06/12/96	jmn
22989	As-disMS	6020	101	102.8	1.76643	20		96	0006157	06/12/96	jmn
22989	Cr-disMS	6020	91.3	92.1	.87241	20		96	0006157	06/12/96	jmn
22999	Hg	7470	2.183	2.17	.597289	20		96	0006157	06/13/96	dsb
23000	Hg-dis	7470	1.892	1.98	4.54545	20		96	0006157	06/13/96	dsb
23014	Tl-MS	6020	97	100	3.04568	20		96	0006157	06/13/96	jmn
23014	Ni-MS	6020	90	93	3.27868	20		96	0006157	06/13/96	jmn
23014	Be-MS	6020	103	103	0	20		96	0006157	06/13/96	jmn
23014	Cu-MS	6020	88	90	2.24719	20		96	0006157	06/13/96	jmn
23014	Zn-MS	6020	92	94	2.15053	20		96	0006157	06/13/96	jmn
23015	Tl-MS	6020	101	103	1.96078	20		96	0006157	06/13/96	jmn
23015	Cu-MS	6020	92	92	0	20		96	0006157	06/13/96	jmn
23015	Ni-MS	6020	92	93	1.08108	20		96	0006157	06/13/96	jmn
23015	Zn-MS	6020	93	94	1.06951	20		96	0006157	06/13/96	jmn
23015	Be-disMS	6020	105	104	.956937	20		96	0006157	06/13/96	jmn
23101	Se-gfdis	270.2	20.47	19.49	4.90490	20		96	0006157	06/20/96	jmn
23101	Se-GF	7740	19.44	15.83	20.4706	20	*	96	0006157	06/19/96	jmn
23182	cs13dcpb	8260	45.784	45.049	1.61835	65		96	0006245	06/18/96	HLS
23182	Dcldflmb	8260	29.103	29.887	2.65807	40		96	0006245	06/18/96	HLS
23182	Dibrclmb	8260	51.705	54.015	4.37003	65		96	0006245	06/18/96	HLS
23182	Dibrmthb	8260	50.773	50.247	1.04137	40		96	0006245	06/18/96	HLS
23182	EDBb	8260	54.015	53.493	.971090	40		96	0006245	06/18/96	HLS
23182	Clmthanb	8260	32.251	28.377	12.7795	65		96	0006245	06/18/96	HLS

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-->> PRECISION DATA continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23182	Crbndisb	8260	35.383	29.791	17.1602	40		96	0006245	06/18/96	HLS
23182	Brmethb	8260	38.932	36.741	5.79070	65		96	0006245	06/18/96	HLS
23182	Carbtetb	8260	45.374	46.305	2.03099	40		96	0006245	06/18/96	HLS
23182	Chlformb	8260	49.242	52.816	7.00386	40		96	0006245	06/18/96	HLS
23182	Clbenzb	8260	49.988	50.912	1.83151	17		96	0006245	06/18/96	HLS
23182	Clethanb	8260	33.366	35.228	5.42904	65		96	0006245	06/18/96	HLS
23182	2Hexanob	8260	111.618	81.962	30.6395	40		96	0006245	06/18/96	HLS
23182	4Me2Penb	8260	105.593	89.767	16.2018	40		96	0006245	06/18/96	HLS
23182	Acetoneb	8260	585.385	561.02	4.25067	40		96	0006245	06/18/96	HLS
23182	Acrolenb	8260	708.84	358.594	65.6239	40	*	96	0006245	06/18/96	HLS
23182	14dc2beb	8260	73.948	77.879	5.17826	40		96	0006245	06/18/96	HLS
23182	2Butanob	8260	103.441	94.889	8.62401	40		96	0006245	06/18/96	HLS
23182	2Ceve	8260	4.314	4.49	3.99818	65		96	0006245	06/18/96	HLS
23182	12DCAb	8260	48.793	48.298	1.01966	40		96	0006245	06/18/96	HLS
23182	12Dcprob	8260	48.728	50.619	3.80685	65		96	0006245	06/18/96	HLS
23182	11DCAb	8260	44.141	42.539	3.69635	40		96	0006245	06/18/96	HLS
23182	11DCEb	8260	32.36	32.173	.579548	40		96	0006245	06/18/96	HLS
23182	123Tclpb	8260	55.361	60.85	9.44661	40		96	0006245	06/18/96	HLS
23182	Acrylonb	8260	634.078	604.066	4.84790	40		96	0006245	06/18/96	HLS
23182	Benzeneb	8260	46.849	46.876	.057615	22		96	0006245	06/18/96	HLS
23182	Brdiclmb	8260	49.157	49.266	.221492	40		96	0006245	06/18/96	HLS
23182	Brformb	8260	46.805	47.439	1.34544	40		96	0006245	06/18/96	HLS
23182	111TCAb	8260	45.86	46.129	.584852	40		96	0006245	06/18/96	HLS
23182	1122TCAb	8260	53.165	56.994	6.95176	40		96	0006245	06/18/96	HLS
23182	112TCAb	8260	54.187	52.211	3.71435	40		96	0006245	06/18/96	HLS
23182	iodomthb	8260	36.512	32.219	12.4921	40		96	0006245	06/18/96	HLS
23182	mpXylenb	8260	48.533	49.842	2.66124	40		96	0006245	06/18/96	HLS
23182	Mthenecb	8260	25.323	16.672	41.2001	65		96	0006245	06/18/96	HLS
23182	oXyleneb	8260	49.383	50.188	1.61693	40		96	0006245	06/18/96	HLS
23182	Styreneb	8260	47.145	46.808	.71738	40		96	0006245	06/18/96	HLS
23182	TCEb	8260	50.438	50.348	.178596	20		96	0006245	06/18/96	HLS
23182	Tclflmtb	8260	30.636	29.002	5.47972	65		96	0006245	06/18/96	HLS
23182	Tetcletb	8260	56.817	56.614	.357926	40		96	0006245	06/18/96	HLS
23182	Tolueneb	8260	49.101	50.355	2.52171	17		96	0006245	06/18/96	HLS

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-->> PRECISION DATA continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23182	tr12DCEb	8260	41.205	42.842	3.89543	40		96	0006245	06/18/96	HLS
23182	tr13dcpb	8260	47.32	46.896	.900059	40		96	0006245	06/18/96	HLS
23182	Vinylace	8260	58.449	29.245	66.6043	40	*	96	0006245	06/18/96	HLS
23182	Vinylclb	8260	30.349	29.595	2.51568	65		96	0006245	06/18/96	HLS
23182	Ethbenzb	8260	49.584	50.156	1.14698	40		96	0006245	06/18/96	HLS
23182	ethylmab	8260	102.573	60.816	51.1136	40	*	96	0006245	06/18/96	HLS
23183	Tolueneb	8260	57.226	54.753	4.41689	17		96	0006157	06/12/96	HLS
23183	tr12DCEb	8260	45.127	44.599	1.17691	40		96	0006157	06/12/96	HLS
23183	tr13dcpb	8260	51.617	52.504	1.70378	40		96	0006157	06/12/96	HLS
23183	Vinylace	8260	104.698	123.417	16.4119	40		96	0006157	06/12/96	HLS
23183	Vinylclb	8260	48.05	45.257	5.98668	65		96	0006157	06/12/96	HLS
23183	Ethbenzb	8260	48.442	48.016	.883286	40		96	0006157	06/12/96	HLS
23183	ethylmab	8260	106.648	125.485	16.2294	40		96	0006157	06/12/96	HLS
23183	iodomthb	8260	56.473	98.959	54.6682	40	*	96	0006157	06/12/96	HLS
23183	cs13dcpb	8260	50.46	51.528	2.09436	65		96	0006157	06/12/96	HLS
23183	Dcldflmb	8260	43.849	40.694	7.46365	40		96	0006157	06/12/96	HLS
23183	Dibrclmb	8260	45.875	49.264	7.12431	65		96	0006157	06/12/96	HLS
23183	Dibrmthb	8260	47.345	49.578	4.60778	40		96	0006157	06/12/96	HLS
23183	EDBb	8260	46.108	50.129	8.35645	40		96	0006157	06/12/96	HLS
23183	Chlformb	8260	45.306	47.379	4.47321	40		96	0006157	06/12/96	HLS
23183	Clbenzb	8260	46.785	50.231	7.10398	17		96	0006157	06/12/96	HLS
23183	Clethanb	8260	32.511	41.409	24.0746	65		96	0006157	06/12/96	HLS
23183	Clmthanb	8260	55.007	44.613	20.8672	65		96	0006157	06/12/96	HLS
23183	Crbndisb	8260	76.309	92.811	19.5151	40		96	0006157	06/12/96	HLS
23183	Brdiclmb	8260	49.949	49.245	1.41944	40		96	0006157	06/12/96	HLS
23183	Brformb	8260	49.562	53.232	7.14049	40		96	0006157	06/12/96	HLS
23183	Brmethb	8260	41.771	40.213	3.80074	65		96	0006157	06/12/96	HLS
23183	Carbtetb	8260	35.122	37.144	5.59599	40		96	0006157	06/12/96	HLS
23183	2Butanob	8260	111.753	113.467	1.52206	40		96	0006157	06/12/96	HLS
23183	2Hexanob	8260	106.569	117.517	9.77124	40		96	0006157	06/12/96	HLS
23183	12Dcprob	8260	52.114	53.244	2.14506	65		96	0006157	06/12/96	HLS
23183	14dc2beb	8260	94.964	101.932	7.07784	40		96	0006157	06/12/96	HLS
23183	111TCAb	8260	43.624	45.932	5.15431	40		96	0006157	06/12/96	HLS
23183	1122TCAb	8260	55.899	53.807	3.81382	40		96	0006157	06/12/96	HLS

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-->> P R E C I S I O N D A T A continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23183	112TCAb	8260	50.999	51.021	.043128	40		96	0006157	06/12/96	HLS
23183	11DCAb	8260	48.118	45.53	5.52708	40		96	0006157	06/12/96	HLS
23183	11DCEb	8260	39.655	42.526	6.98701	40		96	0006157	06/12/96	HLS
23183	4Me2Penb	8260	116.332	114.918	1.22291	40		96	0006157	06/12/96	HLS
23183	Acetoneb	8260	988.674	1045.39	5.57661	40		96	0006157	06/12/96	HLS
23183	Acrolenb	8260	812.656	966.904	17.3355	40		96	0006157	06/12/96	HLS
23183	Acrylonb	8260	1181.1	1096.35	7.44253	40		96	0006157	06/12/96	HLS
23183	Benzeneb	8260	53.15	51.732	2.70399	22		96	0006157	06/12/96	HLS
23183	mpXylenb	8260	45.588	51.059	11.3216	40		96	0006157	06/12/96	HLS
23183	Mthenecb	8260	28.95	45.792	45.0670	65		96	0006157	06/12/96	HLS
23183	oXyleneb	8260	46.775	50.469	7.59738	40		96	0006157	06/12/96	HLS
23183	Styreneb	8260	51.263	51.758	.960969	40		96	0006157	06/12/96	HLS
23183	TCEb	8260	52.007	49.959	4.01702	20		96	0006157	06/12/96	HLS
23183	Tclflmtb	8260	33.159	39.847	18.3217	65		96	0006157	06/12/96	HLS
23183	Tetcletb	8260	43.541	49.74	13.2910	40		96	0006157	06/12/96	HLS
23183	123Tclpb	8260	49.913	49.95	.074101	40		96	0006157	06/12/96	HLS
23183	12DCAb	8260	47.876	50.978	6.27592	40		96	0006157	06/12/96	HLS
23415	14dc2beb	8260	73.948	77.879	5.17826	40		96	0006245	06/18/96	HLS
23415	2Butanob	8260	103.441	94.889	8.62401	40		96	0006245	06/18/96	HLS
23415	12Dcprob	8260	48.728	50.619	3.80685	65		96	0006245	06/18/96	HLS
23415	12DCAb	8260	48.793	48.298	1.01966	40		96	0006245	06/18/96	HLS
23415	112TCAb	8260	54.187	52.211	3.71435	40		96	0006245	06/18/96	HLS
23415	11DCAb	8260	44.141	42.539	3.69635	40		96	0006245	06/18/96	HLS
23415	11DCEb	8260	32.36	32.173	.579548	40		96	0006245	06/18/96	HLS
23415	123Tclpb	8260	55.361	60.85	9.44661	40		96	0006245	06/18/96	HLS
23415	111TCAb	8260	45.86	46.129	.584852	40		96	0006245	06/18/96	HLS
23415	1122TCAb	8260	53.165	56.994	6.95176	40		96	0006245	06/18/96	HLS
23415	Clethanb	8260	33.366	35.228	5.42904	65		96	0006245	06/18/96	HLS
23415	Tclflmtb	8260	30.636	29.002	5.47972	65		96	0006245	06/18/96	HLS
23415	Tetcletb	8260	56.817	56.614	.357926	40		96	0006245	06/18/96	HLS
23415	Tolueneb	8260	49.101	50.355	2.52171	17		96	0006245	06/18/96	HLS
23415	tr12DCEb	8260	41.205	42.842	3.89543	40		96	0006245	06/18/96	HLS
23415	tr13dcpb	8260	47.32	46.896	.900059	40		96	0006245	06/18/96	HLS
23415	Vinylace	8260	58.449	29.245	66.6043	40	*	96	0006245	06/18/96	HLS

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-->> P R E C I S I O N D A T A continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23415	Vinylclb	8260	30.349	29.595	2.51568	65		96	0006245	06/18/96	HLS
23415	oXyleneb	8260	49.383	50.188	1.61693	40		96	0006245	06/18/96	HLS
23415	Styreneb	8260	47.145	46.808	.71738	40		96	0006245	06/18/96	HLS
23415	TCEb	8260	50.438	50.348	.178596	20		96	0006245	06/18/96	HLS
23415	mpXylenb	8260	48.533	49.842	2.66124	40		96	0006245	06/18/96	HLS
23415	Mthenecb	8260	25.323	16.672	41.2001	65		96	0006245	06/18/96	HLS
23415	Dibrmthb	8260	50.773	50.247	1.04137	40		96	0006245	06/18/96	HLS
23415	EDBb	8260	54.015	53.493	.971090	40		96	0006245	06/18/96	HLS
23415	Ethbenzb	8260	49.584	50.156	1.14698	40		96	0006245	06/18/96	HLS
23415	ethylmab	8260	102.573	60.816	51.1136	40	*	96	0006245	06/18/96	HLS
23415	iodomthb	8260	36.512	32.219	12.4921	40		96	0006245	06/18/96	HLS
23415	Clmthanb	8260	32.251	28.377	12.7795	65		96	0006245	06/18/96	HLS
23415	Crbndisb	8260	35.383	29.791	17.1602	40		96	0006245	06/18/96	HLS
23415	cs13dcpb	8260	45.784	45.049	1.61835	65		96	0006245	06/18/96	HLS
23415	Dcldflmb	8260	29.103	29.887	2.65807	40		96	0006245	06/18/96	HLS
23415	Dibrclmb	8260	51.705	54.015	4.37003	65		96	0006245	06/18/96	HLS
23415	Brmethb	8260	38.932	36.741	5.79070	65		96	0006245	06/18/96	HLS
23415	Carbtetb	8260	45.374	46.305	2.03099	40		96	0006245	06/18/96	HLS
23415	Chlformb	8260	49.242	52.816	7.00386	40		96	0006245	06/18/96	HLS
23415	Clbenzb	8260	49.988	50.912	1.83151	17		96	0006245	06/18/96	HLS
23415	Acrolenb	8260	708.84	358.594	65.6239	40	*	96	0006245	06/18/96	HLS
23415	Acrylonb	8260	634.078	604.066	4.84790	40		96	0006245	06/18/96	HLS
23415	Benzeneb	8260	46.849	46.876	.057615	22		96	0006245	06/18/96	HLS
23415	Brdiclmb	8260	49.157	49.266	.221492	40		96	0006245	06/18/96	HLS
23415	Brformb	8260	46.805	47.439	1.34544	40		96	0006245	06/18/96	HLS
23415	2Ceve	8260	4.314	4.49	3.99818	65		96	0006245	06/18/96	HLS
23415	2Hexanob	8260	111.618	81.962	30.6395	40		96	0006245	06/18/96	HLS
23415	4Me2Penb	8260	105.593	89.767	16.2018	40		96	0006245	06/18/96	HLS
23415	Acetoneb	8260	585.385	561.02	4.25067	40		96	0006245	06/18/96	HLS
23421	Tolueneb	8260	50.459	47.804	5.40386	17		96	0006349	06/20/96	HLS
23421	tr12DCEb	8260	47.324	45.279	4.41670	40		96	0006349	06/20/96	HLS
23421	tr13dcpb	8260	48.92	49.447	1.07149	40		96	0006349	06/20/96	HLS
23421	Vinylace	8260	21.876	38.297	54.5793	40	*	96	0006349	06/20/96	HLS
23421	Vinylclb	8260	41.281	39.374	4.72878	65		96	0006349	06/20/96	HLS

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-->> P R E C I S I O N D A T A continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23421	Styreneb	8260	48.041	47.195	1.77663	40		96	0006349	06/20/96	HLS
23421	TCEb	8260	47.11	46.835	.585448	20		96	0006349	06/20/96	HLS
23421	Tclflmtb	8260	42.634	47.079	9.90937	65		96	0006349	06/20/96	HLS
23421	Tetcletb	8260	47.052	51.918	9.83328	40		96	0006349	06/20/96	HLS
23421	mpXylenb	8260	51.554	49.218	4.63620	40		96	0006349	06/20/96	HLS
23421	Methenecb	8260	47.133	48.26	2.36285	65		96	0006349	06/20/96	HLS
23421	oXyleneb	8260	48.008	48.66	1.34894	40		96	0006349	06/20/96	HLS
23421	Ethbenzb	8260	50.364	48.89	2.97015	40		96	0006349	06/20/96	HLS
23421	ethylmab	8260	34.468	71.964	70.4600	40	*	96	0006349	06/20/96	HLS
23421	iodomthb	8260	89.205	96.5	7.85654	40		96	0006349	06/20/96	HLS
23421	Dcldflmb	8260	40.815	41.128	.763945	40		96	0006349	06/20/96	HLS
23421	Dibrclmb	8260	50.255	52.853	5.03937	65		96	0006349	06/20/96	HLS
23421	Dibrmthb	8260	48.598	51.512	5.82159	40		96	0006349	06/20/96	HLS
23421	EDBb	8260	47.247	51.624	8.85396	40		96	0006349	06/20/96	HLS
23421	Brmethb	8260	41.905	46.319	10.0063	65		96	0006349	06/20/96	HLS
23421	Carbtetb	8260	45.658	44.483	2.60702	40		96	0006349	06/20/96	HLS
23421	Chlformb	8260	54.607	55.328	1.31168	40		96	0006349	06/20/96	HLS
23421	Clbenzb	8260	49.687	49.063	1.26379	17		96	0006349	06/20/96	HLS
23421	Clethanb	8260	50.09	54.029	7.56634	65		96	0006349	06/20/96	HLS
23421	Clmthanb	8260	42.823	37.927	12.1263	65		96	0006349	06/20/96	HLS
23421	Crbndisb	8260	90.128	91.389	1.38940	40		96	0006349	06/20/96	HLS
23421	cs13dcpb	8260	47.359	48.842	3.08312	65		96	0006349	06/20/96	HLS
23421	Acrylonb	8260	927.348	1043.66	11.8022	40		96	0006349	06/20/96	HLS
23421	Benzeneb	8260	50.323	47.82	5.10072	22		96	0006349	06/20/96	HLS
23421	Brdiclmb	8260	50.828	52.809	3.82295	40		96	0006349	06/20/96	HLS
23421	Brformb	8260	47.333	49.908	5.29612	40		96	0006349	06/20/96	HLS
23421	2Hexanob	8260	70.853	102.209	36.2367	40		96	0006349	06/20/96	HLS
23421	4Me2Penb	8260	88.524	99.868	12.0429	40		96	0006349	06/20/96	HLS
23421	Acetoneb	8260	911.457	1086.45	17.5176	40		96	0006349	06/20/96	HLS
23421	Acrolenb	8260	248.816	397.812	46.0839	40	*	96	0006349	06/20/96	HLS
23421	14dc2beb	8260	78.67	86.731	9.74722	40		96	0006349	06/20/96	HLS
23421	2Butanob	8260	93.931	118.023	22.7332	40		96	0006349	06/20/96	HLS
23421	2Ceve	8260	6.201	5.921	4.61969	65		96	0006349	06/20/96	HLS
23421	12DCAb	8260	49.277	50.832	3.10661	40		96	0006349	06/20/96	HLS

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->> P R E C I S I O N D A T A continued <<---

QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23421	12Dcprob	8260	47.045	45.791	2.70153	65		96	0006349	06/20/96	HLS
23421	11DCEb	8260	42.506	45.24	6.23162	40		96	0006349	06/20/96	HLS
23421	123Tclpb	8260	48.557	53.49	9.66809	40		96	0006349	06/20/96	HLS
23421	111TCAb	8260	50.551	50.227	.642997	40		96	0006349	06/20/96	HLS
23421	1122TCAb	8260	50.785	52.981	4.23260	40		96	0006349	06/20/96	HLS
23421	112TCAb	8260	49.309	53.301	7.78091	40		96	0006349	06/20/96	HLS
23421	11DCAb	8260	46.022	49.205	6.68507	40		96	0006349	06/20/96	HLS
23570	phenolb	8270	58.91	53.66	9.32752	21		96	0006157	07/03/96	SCL
23570	2clphenb	8270	116.2	102.59	12.4411	18		96	0006157	07/03/96	SCL
23570	14dcbsb	8270	87.18	73.72	16.7308	18		96	0006157	07/03/96	SCL
23570	nNdpamnb	8270	108.12	87.06	21.5800	30		96	0006157	07/03/96	SCL
23570	PCPb	8270	141.55	113.26	22.2047	39		96	0006157	07/03/96	SCL
23570	Pyreneb	8270	86.34	77.12	11.2810	21		96	0006157	07/03/96	SCL
23570	4nitpheb	8270	59.43	53.71	10.1113	90		96	0006157	07/03/96	SCL
23570	124Tcbsb	8270	82.7	74.56	10.3522	24		96	0006157	07/03/96	SCL
23570	4cl3mepb	8270	128.95	108.11	17.5820	17	*	96	0006157	07/03/96	SCL
23570	Acenaphb	8270	85.99	72.65	16.8179	20		96	0006157	07/03/96	SCL
23570	24Dintob	8270	93.88	85.75	9.05194	25		96	0006157	07/03/96	SCL

->> M E T H O D B L A N K D A T A <<---

QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
22962	CN-T	9012	.01	BDL	MG/L	06/11/96	ejp
22987	Cr-MS	6020	10	BDL	UG/L	06/12/96	sfl
22987	Pb-MS	6020	50	BDL	UG/L	06/12/96	sfl
22987	Ag-MS	6020	10	BDL	UG/L	06/12/96	sfl
22987	Sb-MS	6020	50	BDL	UG/L	06/12/96	sfl
22987	Ba-MS	6020	10	BDL	UG/L	06/12/96	sfl
22987	Cd-MS	6020	5	BDL	UG/L	06/12/96	sfl
22987	As-MS	6020	10	BDL	UG/L	06/12/96	sfl
22989	Cd-disMS	6020	5	BDL	UG/L	06/12/96	jmn

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-->> M E T H O D B L A N K D A T A continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
22989	Ba-disMS	6020	10	BDL	UG/L	06/12/96	jmn
22989	Ag-disMS	6020	10	BDL	UG/L	06/12/96	jmn
22989	Pb-disMS	6020	50	BDL	UG/L	06/12/96	jmn
22989	Sb-disMS	6020	50	BDL	UG/L	06/12/96	jmn
22989	As-disMS	6020	10	BDL	UG/L	06/12/96	jmn
22989	Cr-disMS	6020	10	BDL	UG/L	06/12/96	jmn
22999	Hg	7470	50	BDL	UG/L	06/13/96	dsb
23000	Hg-dis	7470	50	BDL	UG/L	06/13/96	dsb
23014	Tl-MS	6020	10	BDL	UG/L	06/13/96	jmn
23014	Ni-MS	6020	40	BDL	UG/L	06/13/96	jmn
23014	Be-MS	6020	5	BDL	UG/L	06/13/96	jmn
23014	Cu-MS	6020	25	BDL	UG/L	06/13/96	jmn
23014	Zn-MS	6020	20	BDL	UG/L	06/13/96	jmn
23015	Tl-MS	6020	10	BDL	UG/L	06/13/96	jmn
23015	Cu-MS	6020	25	BDL	UG/L	06/13/96	jmn
23015	Ni-MS	6020	40	BDL	UG/L	06/13/96	jmn
23015	Zn-MS	6020	20	BDL	UG/L	06/13/96	jmn
23015	Be-disMS	6020	5	BDL	UG/L	06/13/96	jmn
23101	Se-gfdis	270.2	10	BDL	UG/L	06/20/96	jmn
23101	Se-GF	7740	10	BDL	UG/L	06/19/96	jmn
23182	cs13dcpb	8260	5	BDL	UG/L	06/18/96	HLS
23182	Dcldflmb	8260	5	BDL	UG/L	06/18/96	HLS
23182	Dibrclmb	8260	10	BDL	UG/L	06/18/96	HLS
23182	Dibrmthb	8260	5	BDL	UG/L	06/18/96	HLS
23182	EDBb	8260	5	BDL	UG/L	06/18/96	HLS
23182	Clmthanb	8260	10	BDL	UG/L	06/18/96	HLS
23182	Crbndisb	8260	5	BDL	UG/L	06/18/96	HLS
23182	Brmethb	8260	10	BDL	UG/L	06/18/96	HLS
23182	Carbtetb	8260	5	BDL	UG/L	06/18/96	HLS
23182	Chlformb	8260	5	BDL	UG/L	06/18/96	HLS
23182	Clbenzb	8260	5	BDL	UG/L	06/18/96	HLS
23182	Clethanb	8260	10	BDL	UG/L	06/18/96	HLS
23182	2Hexanob	8260	50	BDL	UG/L	06/18/96	HLS
23182	4Me2Penb	8260	50	BDL	UG/L	06/18/96	HLS

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->> METHOD BLANK DATA continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23182	Acetoneb	8260	50	BDL	UG/L	06/18/96	HLS
23182	Acrolenb	8260	100	BDL	UG/L	06/18/96	HLS
23182	14dc2beb	8260	10	BDL	UG/L	06/18/96	HLS
23182	2Butanob	8260	50	BDL	UG/L	06/18/96	HLS
23182	2Ceve	8260	10	BDL	UG/L	06/18/96	HLS
23182	12DCAb	8260	5	BDL	UG/L	06/18/96	HLS
23182	12Dcprob	8260	5	BDL	UG/L	06/18/96	HLS
23182	11DCAb	8260	5	BDL	UG/L	06/18/96	HLS
23182	11DCEb	8260	5	BDL	UG/L	06/18/96	HLS
23182	123Tclpb	8260	.5	BDL	UG/L	06/18/96	HLS
23182	Acrylonb	8260	100	BDL	UG/L	06/18/96	HLS
23182	Benzeneb	8260	5	BDL	UG/L	06/18/96	HLS
23182	Brdiclmb	8260	5	BDL	UG/L	06/18/96	HLS
23182	Brformb	8260	5	BDL	UG/L	06/18/96	HLS
23182	111TCAb	8260	.5	BDL	UG/L	06/18/96	HLS
23182	1122TCAb	8260	5	BDL	UG/L	06/18/96	HLS
23182	112TCAb	8260	.5	BDL	UG/L	06/18/96	HLS
23182	iodomthb	8260	5	BDL	UG/L	06/18/96	HLS
23182	mpXylenb	8260	.5	BDL	UG/L	06/18/96	HLS
23182	Mthenecb	8260	5	BDL	UG/L	06/18/96	HLS
23182	oXyleneb	8260	.5	BDL	UG/L	06/18/96	HLS
23182	Styreneb	8260	5	BDL	UG/L	06/18/96	HLS
23182	TCEb	8260	.5	BDL	UG/L	06/18/96	HLS
23182	Tclflmtb	8260	.5	BDL	UG/L	06/18/96	HLS
23182	Tetcletb	8260	5	BDL	UG/L	06/18/96	HLS
23182	Tolueneb	8260	.5	BDL	UG/L	06/18/96	HLS
23182	tr12DCEb	8260	5	BDL	UG/L	06/18/96	HLS
23182	tr13dcpb	8260	5	BDL	UG/L	06/18/96	HLS
23182	Vinylace	8260	10	BDL	UG/L	06/18/96	HLS
23182	Vinylclb	8260	10	BDL	UG/L	06/18/96	HLS
23182	Ethbenzb	8260	5	BDL	UG/L	06/18/96	HLS
23182	ethylmab	8260	5	BDL	UG/L	06/18/96	HLS
23183	Tolueneb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	tr12DCEb	8260	5	BDL	UG/L	06/12/96	HLS

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-->> M E T H O D B L A N K D A T A continued <<---

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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23183	tr13dcpb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Vinylace	8260	10	BDL	UG/L	06/12/96	HLS
23183	Vinylclb	8260	10	BDL	UG/L	06/12/96	HLS
23183	Ethbenzb	8260	5	BDL	UG/L	06/12/96	HLS
23183	ethylmab	8260	5	BDL	UG/L	06/12/96	HLS
23183	iodomthb	8260	5	BDL	UG/L	06/12/96	HLS
23183	cs13dcpb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Dcldflmb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Dibrclmb	8260	10	BDL	UG/L	06/12/96	HLS
23183	Dibrmthb	8260	5	BDL	UG/L	06/12/96	HLS
23183	EDBb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Chlformb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Clbenzb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Clethanb	8260	10	BDL	UG/L	06/12/96	HLS
23183	Clmthanb	8260	10	BDL	UG/L	06/12/96	HLS
23183	Crbndisb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Brdiclmb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Brformb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Brmethb	8260	10	BDL	UG/L	06/12/96	HLS
23183	Carbtetb	8260	5	BDL	UG/L	06/12/96	HLS
23183	2Butanob	8260	50	BDL	UG/L	06/12/96	HLS
23183	2Ceve	8260	10	BDL	UG/L	06/12/96	HLS
23183	2Hexanob	8260	50	BDL	UG/L	06/12/96	HLS
23183	12Dcprob	8260	5	BDL	UG/L	06/12/96	HLS
23183	14dc2beb	8260	10	BDL	UG/L	06/12/96	HLS
23183	111TCAb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	1122TCAb	8260	5	BDL	UG/L	06/12/96	HLS
23183	112TCAb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	11DCAb	8260	5	BDL	UG/L	06/12/96	HLS
23183	11DCEb	8260	5	BDL	UG/L	06/12/96	HLS
23183	4Me2Penb	8260	50	BDL	UG/L	06/12/96	HLS
23183	Acetoneb	8260	50	BDL	UG/L	06/12/96	HLS
23183	Acrolenb	8260	100	BDL	UG/L	06/12/96	HLS
23183	Acrylonb	8260	100	BDL	UG/L	06/12/96	HLS

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->> METHOD BLANK DATA continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23183	Benzeneb	8260	5	BDL	UG/L	06/12/96	HLS
23183	mpXylenb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	Mthenecb	8260	5	BDL	UG/L	06/12/96	HLS
23183	oXyleneb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	Styreneb	8260	5	BDL	UG/L	06/12/96	HLS
23183	TCEb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	Tclflmtb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	Tetcletb	8260	5	BDL	UG/L	06/12/96	HLS
23183	123Tclpb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	12DCAb	8260	5	BDL	UG/L	06/12/96	HLS
23209	111TCAb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	Dcldflmb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Dibrclmb	8260	10	BDL	UG/L	06/11/96	HLS
23209	Dibrmthb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Brmethb	8260	10	BDL	UG/L	06/11/96	HLS
23209	Carbtetb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Chlformb	8260	5	BDL	UG/L	06/11/96	HLS
23209	11DCEb	8260	5	BDL	UG/L	06/11/96	HLS
23209	123Tclpb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	EDBb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Ethbenzb	8260	5	BDL	UG/L	06/11/96	HLS
23209	ethylmab	8260	5	BDL	UG/L	06/11/96	HLS
23209	1122TCAb	8260	5	BDL	UG/L	06/11/96	HLS
23209	iodomthb	8260	5	BDL	UG/L	06/11/96	HLS
23209	mpXylenb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	Mthenecb	8260	5	BDL	UG/L	06/11/96	HLS
23209	oXyleneb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	Clbenzb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Clethanb	8260	10	BDL	UG/L	06/11/96	HLS
23209	Clmthanb	8260	10	BDL	UG/L	06/11/96	HLS
23209	2Butanob	8260	50	BDL	UG/L	06/11/96	HLS
23209	Styreneb	8260	5	BDL	UG/L	06/11/96	HLS
23209	TCEb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	Tclflmtb	8260	.5	BDL	UG/L	06/11/96	HLS

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-->> METHOD BLANK DATA continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23209	Tetcletb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Tolueneb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	4Me2Penb	8260	50	BDL	UG/L	06/11/96	HLS
23209	Acetoneb	8260	50	BDL	UG/L	06/11/96	HLS
23209	tr12DCEb	8260	5	BDL	UG/L	06/11/96	HLS
23209	tr13dcpb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Vinylace	8260	10	BDL	UG/L	06/11/96	HLS
23209	Vinylclb	8260	10	BDL	UG/L	06/11/96	HLS
23209	112TCAb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	11DCAb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Brdiclmb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Brformb	8260	5	BDL	UG/L	06/11/96	HLS
23209	12Dcprob	8260	5	BDL	UG/L	06/11/96	HLS
23209	Crbndisb	8260	5	BDL	UG/L	06/11/96	HLS
23209	cs13dcpb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Acrolenb	8260	100	BDL	UG/L	06/11/96	HLS
23209	Acrylonb	8260	100	BDL	UG/L	06/11/96	HLS
23209	Benzeneb	8260	5	BDL	UG/L	06/11/96	HLS
23209	2Ceve	8260	10	BDL	UG/L	06/11/96	HLS
23209	2Hexanob	8260	50	BDL	UG/L	06/11/96	HLS
23209	14dc2beb	8260	10	BDL	UG/L	06/11/96	HLS
23209	12DCAb	8260	5	BDL	UG/L	06/11/96	HLS
23415	14dc2beb	8260	10	BDL	UG/L	06/18/96	HLS
23415	2Butanob	8260	50	BDL	UG/L	06/18/96	HLS
23415	12Dcprob	8260	5	BDL	UG/L	06/18/96	HLS
23415	12DCAb	8260	5	BDL	UG/L	06/18/96	HLS
23415	112TCAb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	11DCAb	8260	5	BDL	UG/L	06/18/96	HLS
23415	11DCEb	8260	5	BDL	UG/L	06/18/96	HLS
23415	123Tclpb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	111TCAb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	1122TCAb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Clethanb	8260	10	BDL	UG/L	06/18/96	HLS
23415	Tclflmtb	8260	.5	BDL	UG/L	06/18/96	HLS

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-->> M E T H O D B L A N K D A T A continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23415	Tetcletb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Tolueneb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	tr12DCEb	8260	5	BDL	UG/L	06/18/96	HLS
23415	tr13dcpb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Vinylace	8260	10	BDL	UG/L	06/18/96	HLS
23415	Vinylclb	8260	10	BDL	UG/L	06/18/96	HLS
23415	oXyleneb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	Styreneb	8260	5	BDL	UG/L	06/18/96	HLS
23415	TCEb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	mpXylenb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	Mthenecb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Dibrmthb	8260	5	BDL	UG/L	06/18/96	HLS
23415	EDBb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Ethbenzb	8260	5	BDL	UG/L	06/18/96	HLS
23415	ethylmab	8260	5	BDL	UG/L	06/18/96	HLS
23415	iodomthb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Clmthanb	8260	10	BDL	UG/L	06/18/96	HLS
23415	Crbndisb	8260	5	BDL	UG/L	06/18/96	HLS
23415	cs13dcpb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Dcldflmb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Dibrclmb	8260	10	BDL	UG/L	06/18/96	HLS
23415	Brmethb	8260	10	BDL	UG/L	06/18/96	HLS
23415	Carbtetb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Chlformb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Clbenzb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Acrolenb	8260	100	BDL	UG/L	06/18/96	HLS
23415	Acrylonb	8260	100	BDL	UG/L	06/18/96	HLS
23415	Benzeneb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Brdiclmb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Brformb	8260	5	BDL	UG/L	06/18/96	HLS
23415	2Ceve	8260	10	BDL	UG/L	06/18/96	HLS
23415	2Hexanob	8260	50	BDL	UG/L	06/18/96	HLS
23415	4Me2Penb	8260	50	BDL	UG/L	06/18/96	HLS
23415	Acetoneb	8260	50	BDL	UG/L	06/18/96	HLS

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--->> METHOD BLANK DATA continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23416	iodomthb	8260	5	BDL	UG/L	06/19/96	HLS
23416	11DCEb	8260	5	BDL	UG/L	06/19/96	HLS
23416	oXyleneb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	123Tclpb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	Styreneb	8260	5	BDL	UG/L	06/19/96	HLS
23416	TCEb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	Tclflmtb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	Tetcletb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Tolueneb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	tr12DCEb	8260	5	BDL	UG/L	06/19/96	HLS
23416	tr13dcpb	8260	5	BDL	UG/L	06/19/96	HLS
23416	12DCAb	8260	5	BDL	UG/L	06/19/96	HLS
23416	12Dcprob	8260	5	BDL	UG/L	06/19/96	HLS
23416	Vinylace	8260	10	BDL	UG/L	06/19/96	HLS
23416	Vinylclb	8260	10	BDL	UG/L	06/19/96	HLS
23416	14dc2beb	8260	10	BDL	UG/L	06/19/96	HLS
23416	2Butanob	8260	50	BDL	UG/L	06/19/96	HLS
23416	2Ceve	8260	10	BDL	UG/L	06/19/96	HLS
23416	111TCAb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	1122TCAb	8260	5	BDL	UG/L	06/19/96	HLS
23416	2Hexanob	8260	50	BDL	UG/L	06/19/96	HLS
23416	4Me2Penb	8260	50	BDL	UG/L	06/19/96	HLS
23416	Acetoneb	8260	50	BDL	UG/L	06/19/96	HLS
23416	Acrolenb	8260	100	BDL	UG/L	06/19/96	HLS
23416	Acrylonb	8260	100	BDL	UG/L	06/19/96	HLS
23416	Benzeneb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Brdiclmb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Brformb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Brmethb	8260	10	BDL	UG/L	06/19/96	HLS
23416	Carbtetb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Chlformb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Clbenzb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Clethanb	8260	10	BDL	UG/L	06/19/96	HLS
23416	Clmthanb	8260	10	BDL	UG/L	06/19/96	HLS

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-->> METHOD BLANK DATA continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23416	Crbndisb	8260	5	BDL	UG/L	06/19/96	HLS
23416	cs13dcpb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Dcldflmb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Dibrclmb	8260	10	BDL	UG/L	06/19/96	HLS
23416	Dibrmthb	8260	5	BDL	UG/L	06/19/96	HLS
23416	EDBb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Ethbenzb	8260	5	BDL	UG/L	06/19/96	HLS
23416	ethylmab	8260	5	BDL	UG/L	06/19/96	HLS
23416	112TCAb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	11DCAb	8260	5	BDL	UG/L	06/19/96	HLS
23416	mpXylenb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	Mthenecb	8260	5	BDL	UG/L	06/19/96	HLS
23421	Tolueneb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	tr12DCEb	8260	5	BDL	UG/L	06/20/96	HLS
23421	tr13dcpb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Vinylace	8260	10	BDL	UG/L	06/20/96	HLS
23421	Vinylclb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Styreneb	8260	5	BDL	UG/L	06/20/96	HLS
23421	TCEb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	Tclflmtb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	Tetcletb	8260	5	BDL	UG/L	06/20/96	HLS
23421	mpXylenb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	Mthenecb	8260	5	BDL	UG/L	06/20/96	HLS
23421	oXyleneb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	Ethbenzb	8260	5	BDL	UG/L	06/20/96	HLS
23421	ethylmab	8260	5	BDL	UG/L	06/20/96	HLS
23421	iodomthb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Dcldflmb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Dibrclmb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Dibrmthb	8260	5	BDL	UG/L	06/20/96	HLS
23421	EDBb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Brmethb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Carbtetb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Chlformb	8260	5	BDL	UG/L	06/20/96	HLS

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-->> M E T H O D B L A N K D A T A continued <<---
****

QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23421	Clbenzb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Clethanb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Clmthanb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Crbndisb	8260	5	BDL	UG/L	06/20/96	HLS
23421	cs13dcpb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Acrylonb	8260	100	BDL	UG/L	06/20/96	HLS
23421	Benzeneb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Brdiclmb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Brformb	8260	5	BDL	UG/L	06/20/96	HLS
23421	2Hexanob	8260	50	BDL	UG/L	06/20/96	HLS
23421	4Me2Penb	8260	50	BDL	UG/L	06/20/96	HLS
23421	Acetoneb	8260	50	BDL	UG/L	06/20/96	HLS
23421	Acrolenb	8260	100	BDL	UG/L	06/20/96	HLS
23421	14dc2beb	8260	10	BDL	UG/L	06/20/96	HLS
23421	2Butanob	8260	50	BDL	UG/L	06/20/96	HLS
23421	2Ceve	8260	10	BDL	UG/L	06/20/96	HLS
23421	12DCAb	8260	5	BDL	UG/L	06/20/96	HLS
23421	12Dcprob	8260	5	BDL	UG/L	06/20/96	HLS
23421	11DCEb	8260	5	BDL	UG/L	06/20/96	HLS
23421	123Tclpb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	111TCAb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	1122TCAb	8260	5	BDL	UG/L	06/20/96	HLS
23421	112TCAb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	11DCAb	8260	5	BDL	UG/L	06/20/96	HLS
23570	phenolb	8270	10	BDL	UG/L	07/03/96	SCL
23570	2clphenb	8270	10	BDL	UG/L	07/03/96	SCL
23570	14dcbsb	8270	10	BDL	UG/L	07/03/96	SCL
23570	PCPb	8270	50	BDL	UG/L	07/03/96	SCL
23570	Pyreneb	8270	10	BDL	UG/L	07/03/96	SCL
23570	4nitpheb	8270	50	BDL	UG/L	07/03/96	SCL
23570	124Tcbsb	8270	10	BDL	UG/L	07/03/96	SCL
23570	4cl3mepb	8270	10	BDL	UG/L	07/03/96	SCL
23570	Acenaphb	8270	10	BDL	UG/L	07/03/96	SCL
23570	24Dintob	8270	10	BDL	UG/L	07/03/96	SCL

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****
-->> A N A L Y S T ' S QC C O M M E N T S <<---
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C Number: 22989

Ag spike recoveries low due to sample matrix interference

C Number: 23015

Tl, Cu, Ni and Zn recoveries are for the dissolved sample 96-6157.

C Number: 23183

4-methyl-2-pentanone and acrylonitrile MS, MSD and LCS results are above the upper acceptance limits for this project. The results are within the laboratory's historical recovery limits.

Iodomethane MS/MSD RPD is over the project precision limits.

C Number: 23209

MS/MSD reference QC#23183

C Number: 23415

Vinyl acetate LCS and MS results are below the lower acceptance limits. The continueing calib. check sample showed 135% recovery. The MSD recovery was acceptable at 58% recovery. Ethylmethacrylate recoveries were acceptable, but precision was out of control. Carbon disulfide, iodomethane, acrolein, dichlorodifluormethane, acrylonitrile, 1,2,3-trichloropropane and 2-chloroethylvinyl ether exhibit low MS/MSD recoveries. 2-chloroethylvinyl ether is low due to acid preservation.

C Number: 23416

Reference precision and QCRS from 23415

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-->> A N A L Y S T ' S QC C O M M E N T S continued <<---
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C Number: 23421

LCS recoveries for 4-methyl-2-pentanone and acrylonitrile are higher than the project acceptance limits. The results are within the laboratory's historical recovery limits. 1,2,3-trichloropropane MS recovery is higher than the project limit. MSI was within the limits. Acrolein MS/MSD recoveries are low and precision is also out of the limit. Ethylmethacrylate and vinyl acetate RPD results are also out of the precision limits.

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Center For Applied
Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

eport Date: 07/24/96 QUALITY CONTROL REPORT BY LAB PROJECT NUMBER Page: 1

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****
-->> S P I K E A C C U R A C Y D A T A <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
22962	CN-T	9012	0	.3661	.4	92	115	85		06/11/96	ejp	96	0006157
22987	Cr-MS	6020	0	90.1	100	90	125	75		06/12/96	sfl	96	0006157
22987	Pb-MS	6020	0	94.7	100	95	125	75		06/12/96	sfl	96	0006157
22987	Ag-MS	6020	0	85.5	100	86	125	75		06/12/96	sfl	96	0006157
22987	Sb-MS	6020	0	98.7	100	99	125	75		06/12/96	sfl	96	0006157
22987	Ba-MS	6020	40.3	136.2	100	96	125	75		06/12/96	sfl	96	0006157
22987	Cd-MS	6020	0	92.8	100	93	125	75		06/12/96	sfl	96	0006157
22987	As-MS	6020	9.9	102	100	92	125	75		06/12/96	sfl	96	0006157
22989	Cd-disMS	6020	0	93.3	100	93	125	75		06/12/96	jmn	96	0006157
22989	Ba-disMS	6020	33.5	129.2	100	96	125	75		06/12/96	jmn	96	0006157
22989	Ag-disMS	6020	0	62.2	100	62	125	75	*	06/12/96	jmn	96	0006157
22989	Pb-disMS	6020	0	95.9	100	96	125	75		06/12/96	jmn	96	0006157
22989	Sb-disMS	6020	0	100.6	100	101	125	75		06/12/96	jmn	96	0006157
22989	As-disMS	6020	9	101	100	92	125	75		06/12/96	jmn	96	0006157
22989	Cr-disMS	6020	0	91.3	100	91	125	75		06/12/96	jmn	96	0006157
22999	Hg	7470	0	2.183	2	109	125	75		06/13/96	dsb	96	0006157
23000	Hg-dis	7470	0	1.892	2	95	125	75		06/13/96	dsb	96	0006157
23014	Tl-MS	6020	0	97	100	97	125	75		06/13/96	jmn	96	0006157
23014	Ni-MS	6020	0	90	100	90	125	75		06/13/96	jmn	96	0006157
23014	Be-MS	6020	0	103	100	103	125	75		06/13/96	jmn	96	0006157
23014	Cu-MS	6020	0	88	100	88	125	75		06/13/96	jmn	96	0006157
23014	Zn-MS	6020	0	92	100	92	125	75		06/13/96	jmn	96	0006157
23015	Tl-MS	6020	0	101	100	101	125	75		06/13/96	jmn	96	0006157
23015	Cu-MS	6020	0	92	100	92	125	75		06/13/96	jmn	96	0006157
23015	Ni-MS	6020	0	92	100	92	125	75		06/13/96	jmn	96	0006157
23015	Zn-MS	6020	0	93	100	93	125	75		06/13/96	jmn	96	0006157
23015	Be-disMS	6020	0	104	100	104	125	75		06/13/96	jmn	96	0006157
23101	Se-gfdis	270.2	0	20.47	20	102	125	75		06/20/96	jmn	96	0006157
23101	Se-GF	7740	0	19.44	20	97	125	75		06/19/96	jmn	96	0006157
23183	Tolueneb	8260	1.897	54.753	50	106	138	68		06/12/96	HLS	96	0006157
23183	tr12DCEb	8260	0	44.599	50	89	156	54		06/12/96	HLS	96	0006157
23183	tr13dcpb	8260	0	52.504	50	105	183	17		06/12/96	HLS	96	0006157
23183	Vinylace	8260	0	123.417	100	123	147	49		06/12/96	HLS	96	0006157
23183	Vinylclb	8260	0	45.257	50	91	251	10		06/12/96	HLS	96	0006157

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****
-->> S P I K E A C C U R A C Y D A T A continued <<---
****

QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23183	Ethbenzb	8260	0	48.016	50	96	162	37		06/12/96	HLS	96	0006157
23183	ethylmab	8260	0	125.485	100	125	139	37		06/12/96	HLS	96	0006157
23183	iodomthb	8260	0	98.959	100	99	137	37		06/12/96	HLS	96	0006157
23183	cs13dcpb	8260	0	51.528	50	103	227	10		06/12/96	HLS	96	0006157
23183	Dcldflmb	8260	0	40.694	50	81	146	72		06/12/96	HLS	96	0006157
23183	Dibrclmb	8260	0	49.264	50	99	142	56		06/12/96	HLS	96	0006157
23183	Dibrmthb	8260	0	49.578	50	99	110	78		06/12/96	HLS	96	0006157
23183	EDBb	8260	0	50.129	50	100	112	70		06/12/96	HLS	96	0006157
23183	Chlformb	8260	0	47.379	50	95	138	51		06/12/96	HLS	96	0006157
23183	Clbenzb	8260	0	50.231	50	100	136	68		06/12/96	HLS	96	0006157
23183	Clethanb	8260	0	41.409	50	83	119	64		06/12/96	HLS	96	0006157
23183	Clmthanb	8260	0	44.613	50	89	273	10		06/12/96	HLS	96	0006157
23183	Crbndisb	8260	0	92.811	100	93	138	37		06/12/96	HLS	96	0006157
23183	Brdiclmb	8260	0	49.245	50	98	155	35		06/12/96	HLS	96	0006157
23183	Brformb	8260	0	53.232	50	106	169	45		06/12/96	HLS	96	0006157
23183	Brmethb	8260	0	40.213	50	80	242	10		06/12/96	HLS	96	0006157
23183	Carbtetb	8260	0	37.144	50	74	140	70		06/12/96	HLS	96	0006157
23183	2Butanob	8260	0	113.467	100	113	208	79		06/12/96	HLS	96	0006157
23183	2Ceve	8260	0	0	50	1	199	10	*	06/12/96	HLS	96	0006157
23183	2Hexanob	8260	0	117.517	100	118	164	10		06/12/96	HLS	96	0006157
23183	12Dcprob	8260	0	53.244	50	106	210	10		06/12/96	HLS	96	0006157
23183	14dc2beb	8260	0	101.932	100	102	129	11		06/12/96	HLS	96	0006157
23183	111TCAb	8260	.238	45.932	50	91	162	52		06/12/96	HLS	96	0006157
23183	1122TCAb	8260	0	53.807	50	108	157	46		06/12/96	HLS	96	0006157
23183	112TCAb	8260	0	51.021	50	102	150	52		06/12/96	HLS	96	0006157
23183	11DCAb	8260	0	45.53	50	91	155	59		06/12/96	HLS	96	0006157
23183	11DCEb	8260	0	42.526	50	85	136	60		06/12/96	HLS	96	0006157
23183	4Me2Penb	8260	.897	114.918	100	114	111	68	*	06/12/96	HLS	96	0006157
23183	Acetoneb	8260	0	1045.39	1000	105	161	10		06/12/96	HLS	96	0006157
23183	Acrolenb	8260	0	966.904	1000	97	132	60		06/12/96	HLS	96	0006157
23183	Acrylonb	8260	0	1096.35	1000	110	108	77	*	06/12/96	HLS	96	0006157
23183	Benzeneb	8260	0	51.732	50	103	144	73		06/12/96	HLS	96	0006157
23183	mpXylenb	8260	1.03	51.059	50	100	114	66		06/12/96	HLS	96	0006157
23183	Mthenecb	8260	0	45.792	50	92	221	10		06/12/96	HLS	96	0006157

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-->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23183	oXyleneb	8260	.635	50.469	50	100	114	66		06/12/96	HLS	96	0006157
23183	Styreneb	8260	0	51.758	50	104	109	61		06/12/96	HLS	96	0006157
23183	TCEb	8260	0	49.959	50	100	136	66		06/12/96	HLS	96	0006157
23183	Tclflmtb	8260	0	39.847	50	80	181	17		06/12/96	HLS	96	0006157
23183	Tetcletb	8260	0	49.74	50	99	148	64		06/12/96	HLS	96	0006157
23183	123Tclpb	8260	0	49.95	50	100	103	44		06/12/96	HLS	96	0006157
23183	12DCAb	8260	0	50.978	50	102	155	49		06/12/96	HLS	96	0006157
23415	14dc2beb	8260	0	77.879	100	78	129	11		06/18/96	HLS	96	0006245
23415	2Butanob	8260	0	94.889	100	95	208	79		06/18/96	HLS	96	0006245
23415	12Dcprob	8260	0	50.619	50	101	210	10		06/18/96	HLS	96	0006245
23415	12DCAb	8260	0	48.298	50	97	155	49		06/18/96	HLS	96	0006245
23415	112TCAb	8260	0	52.211	50	104	150	52		06/18/96	HLS	96	0006245
23415	11DCAb	8260	0	42.539	50	85	155	59		06/18/96	HLS	96	0006245
23415	11DCEb	8260	0	32.173	50	64	136	60		06/18/96	HLS	96	0006245
23415	123Tclpb	8260	0	60.85	50	122	103	44	*	06/18/96	HLS	96	0006245
23415	111TCAb	8260	0	46.129	50	92	162	52		06/18/96	HLS	96	0006245
23415	1122TCAb	8260	0	56.994	50	114	157	46		06/18/96	HLS	96	0006245
23415	Clethanb	8260	0	35.228	50	70	119	64		06/18/96	HLS	96	0006245
23415	Tclflmtb	8260	0	29.002	50	58	181	17		06/18/96	HLS	96	0006245
23415	Tetcletb	8260	0	56.614	50	113	148	64		06/18/96	HLS	96	0006245
23415	Tolueneb	8260	1.706	50.355	50	97	138	68		06/18/96	HLS	96	0006245
23415	tr12DCEb	8260	0	42.842	50	86	156	54		06/18/96	HLS	96	0006245
23415	tr13dcpb	8260	0	46.896	50	94	183	17		06/18/96	HLS	96	0006245
23415	Vinylace	8260	0	29.245	100	29	147	49	*	06/18/96	HLS	96	0006245
23415	Vinylclb	8260	0	29.595	50	59	251	10		06/18/96	HLS	96	0006245
23415	oXyleneb	8260	0	50.188	50	100	114	66		06/18/96	HLS	96	0006245
23415	Styreneb	8260	0	46.808	50	94	109	61		06/18/96	HLS	96	0006245
23415	TCEb	8260	0	50.348	50	101	136	66		06/18/96	HLS	96	0006245
23415	mpXylenb	8260	0	49.842	50	100	114	66		06/18/96	HLS	96	0006245
23415	Mthenecb	8260	0	16.672	50	33	221	10		06/18/96	HLS	96	0006245
23415	Dibrmthb	8260	0	50.247	50	100	110	78		06/18/96	HLS	96	0006245
23415	EDBb	8260	0	53.493	50	107	112	70		06/18/96	HLS	96	0006245
23415	Ethbenzb	8260	0	50.156	50	100	162	37		06/18/96	HLS	96	0006245
23415	ethylmab	8260	0	60.816	100	61	139	37		06/18/96	HLS	96	0006245

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-->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23415	iodomthb	8260	0	32.219	100	32	137	37	*	06/18/96	HLS	96	0006245
23415	Clmthanb	8260	0	28.377	50	57	273	10		06/18/96	HLS	96	0006245
23415	Crbndisb	8260	0	29.791	100	30	138	37	*	06/18/96	HLS	96	0006245
23415	cs13dcpb	8260	0	45.049	50	90	227	10		06/18/96	HLS	96	0006245
23415	Dcldflmb	8260	0	29.887	50	60	146	72	*	06/18/96	HLS	96	0006245
23415	Dibrclmb	8260	0	54.015	50	108	142	56		06/18/96	HLS	96	0006245
23415	Brmethb	8260	0	36.741	50	73	242	10		06/18/96	HLS	96	0006245
23415	Carbtetb	8260	0	46.305	50	93	140	70		06/18/96	HLS	96	0006245
23415	Chlformb	8260	0	52.816	50	106	138	51		06/18/96	HLS	96	0006245
23415	Clbenzb	8260	0	50.912	50	102	136	68		06/18/96	HLS	96	0006245
23415	Acrolenb	8260	0	358.594	1000	36	132	60	*	06/18/96	HLS	96	0006245
23415	Acrylonb	8260	0	604.066	1000	60	108	77	*	06/18/96	HLS	96	0006245
23415	Benzeneb	8260	0	46.876	50	94	144	73		06/18/96	HLS	96	0006245
23415	Brdiclmb	8260	0	49.266	50	99	155	35		06/18/96	HLS	96	0006245
23415	Brformb	8260	0	47.439	50	95	169	45		06/18/96	HLS	96	0006245
23415	2Ceve	8260	0	4.49	50	9	199	10	*	06/18/96	HLS	96	0006245
23415	2Hexanob	8260	0	81.962	100	82	164	10		06/18/96	HLS	96	0006245
23415	4Me2Penb	8260	0	89.767	100	90	111	68		06/18/96	HLS	96	0006245
23415	Acetoneb	8260	0	561.02	1000	56	161	10		06/18/96	HLS	96	0006245
23416	iodomthb	8260	0	88.735	100	89	137	37		06/19/96	HLS	96	0006345
23416	11DCEb	8260	0	41.73	50	83	136	60		06/19/96	HLS	96	0006345
23416	oXyleneb	8260	0	48.199	50	96	114	66		06/19/96	HLS	96	0006345
23416	123Tclpb	8260	0	54.507	50	109	103	44	*	06/19/96	HLS	96	0006345
23416	Styreneb	8260	0	46.805	50	94	109	61		06/19/96	HLS	96	0006345
23416	TCEb	8260	0	47.893	50	96	136	66		06/19/96	HLS	96	0006345
23416	Tclflmtb	8260	0	48.197	50	96	181	17		06/19/96	HLS	96	0006345
23416	Tetcletb	8260	0	50.622	50	101	148	64		06/19/96	HLS	96	0006345
23416	Tolueneb	8260	0	47.343	50	95	138	68		06/19/96	HLS	96	0006345
23416	tr12DCEb	8260	0	43.708	50	87	156	54		06/19/96	HLS	96	0006345
23416	tr13dcpb	8260	0	45.753	50	92	183	17		06/19/96	HLS	96	0006345
23416	12DCAb	8260	0	50.105	50	100	155	49		06/19/96	HLS	96	0006345
23416	12Dcprob	8260	0	48.114	50	96	210	10		06/19/96	HLS	96	0006345
23416	Vinylace	8260	0	47.216	100	47	147	49	*	06/19/96	HLS	96	0006345
23416	Vinylclb	8260	0	34.874	50	70	251	10		06/19/96	HLS	96	0006345

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->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23416	14dc2beb	8260	0	79.943	100	80	129	11		06/19/96	HLS	96	0006345
23416	2Butanob	8260	0	121.392	100	121	208	79		06/19/96	HLS	96	0006345
23416	2Ceve	8260	0	5.088	50	10	199	10		06/19/96	HLS	96	0006345
23416	111TCAb	8260	0	48.81	50	98	162	52		06/19/96	HLS	96	0006345
23416	1122TCAb	8260	0	52.585	50	105	157	46		06/19/96	HLS	96	0006345
23416	2Hexanob	8260	0	121.528	100	122	164	10		06/19/96	HLS	96	0006345
23416	4Me2Penb	8260	0	112.675	100	113	111	68	*	06/19/96	HLS	96	0006345
23416	Acetoneb	8260	0	1129.23	1000	113	161	10		06/19/96	HLS	96	0006345
23416	Acrolenb	8260	0	488.545	1000	49	132	60	*	06/19/96	HLS	96	0006345
23416	Acrylonb	8260	0	1128.09	1000	113	108	77	*	06/19/96	HLS	96	0006345
23416	Benzeneb	8260	0	45.792	50	92	144	73		06/19/96	HLS	96	0006345
23416	Brdiclmb	8260	0	50.569	50	101	155	35		06/19/96	HLS	96	0006345
23416	Brformb	8260	0	51.989	50	104	169	45		06/19/96	HLS	96	0006345
23416	Brmethb	8260	0	40.441	50	81	242	10		06/19/96	HLS	96	0006345
23416	Carbtetb	8260	0	43.934	50	88	140	70		06/19/96	HLS	96	0006345
23416	Chlformb	8260	3.067	56.227	50	106	138	51		06/19/96	HLS	96	0006345
23416	Clbenzb	8260	0	48.697	50	97	136	68		06/19/96	HLS	96	0006345
23416	Clethanb	8260	0	47.022	50	94	119	64		06/19/96	HLS	96	0006345
23416	Clmthanb	8260	0	37.387	50	75	273	10		06/19/96	HLS	96	0006345
23416	Crbndisb	8260	0	88.976	100	89	138	37		06/19/96	HLS	96	0006345
23416	cs13dcpb	8260	0	43.933	50	88	227	10		06/19/96	HLS	96	0006345
23416	Dcldflmb	8260	0	36.332	50	73	146	72		06/19/96	HLS	96	0006345
23416	Dibrclmb	8260	0	52.087	50	104	142	56		06/19/96	HLS	96	0006345
23416	Dibrmthb	8260	0	50.454	50	101	110	78		06/19/96	HLS	96	0006345
23416	EDBb	8260	0	51.365	50	103	112	70		06/19/96	HLS	96	0006345
23416	Ethbenzb	8260	0	48.915	50	98	162	37		06/19/96	HLS	96	0006345
23416	ethylmab	8260	0	97.547	100	98	139	37		06/19/96	HLS	96	0006345
23416	112TCAb	8260	0	52.711	50	105	150	52		06/19/96	HLS	96	0006345
23416	11DCAb	8260	0	46.176	50	92	155	59		06/19/96	HLS	96	0006345
23416	mpXylenb	8260	0	47.23	50	94	114	66		06/19/96	HLS	96	0006345
23416	Mthenecb	8260	0	43.939	50	88	221	10		06/19/96	HLS	96	0006345
23421	Tolueneb	8260	1.08	47.804	50	93	138	68		06/20/96	HLS	96	0006349
23421	tr12DCEb	8260	0	45.279	50	91	156	54		06/20/96	HLS	96	0006349
23421	tr13dcpb	8260	0	49.447	50	99	183	17		06/20/96	HLS	96	0006349

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-->> S P I K E A C C U R A C Y D A T A continued <<---

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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23421	Vinylace	8260	0	38.297	100	38	147	49	*	06/20/96	HLS	96	0006349
23421	Vinylclb	8260	0	39.374	50	79	251	10		06/20/96	HLS	96	0006349
23421	Styreneb	8260	0	47.195	50	94	109	61		06/20/96	HLS	96	0006349
23421	TCEb	8260	0	46.835	50	94	136	66		06/20/96	HLS	96	0006349
23421	Tclflmtb	8260	0	47.079	50	94	181	17		06/20/96	HLS	96	0006349
23421	Tetcletb	8260	0	51.918	50	104	148	64		06/20/96	HLS	96	0006349
23421	mpXylenb	8260	0	49.218	50	98	114	66		06/20/96	HLS	96	0006349
23421	Mthenecb	8260	0	48.26	50	97	221	10		06/20/96	HLS	96	0006349
23421	oXyleneb	8260	0	48.66	50	97	114	66		06/20/96	HLS	96	0006349
23421	Ethbenzb	8260	0	48.89	50	98	162	37		06/20/96	HLS	96	0006349
23421	ethylmab	8260	0	71.964	100	72	139	37		06/20/96	HLS	96	0006349
23421	iodomthb	8260	0	96.5	100	97	137	37		06/20/96	HLS	96	0006349
23421	Dcldflmb	8260	0	41.128	50	82	146	72		06/20/96	HLS	96	0006349
23421	Dibrclmb	8260	0	52.853	50	106	142	56		06/20/96	HLS	96	0006349
23421	Dibrmthb	8260	0	51.512	50	103	110	78		06/20/96	HLS	96	0006349
23421	EDBb	8260	0	51.624	50	103	112	70		06/20/96	HLS	96	0006349
23421	Brmethb	8260	1.329	46.319	50	90	242	10		06/20/96	HLS	96	0006349
23421	Carbtetb	8260	0	44.483	50	89	140	70		06/20/96	HLS	96	0006349
23421	Chlformb	8260	2.726	55.328	50	105	138	51		06/20/96	HLS	96	0006349
23421	Clbenzb	8260	0	49.063	50	98	136	68		06/20/96	HLS	96	0006349
23421	Clethanb	8260	0	54.029	50	108	119	64		06/20/96	HLS	96	0006349
23421	Clmthanb	8260	0	37.927	50	76	273	10		06/20/96	HLS	96	0006349
23421	Crbndisb	8260	0	91.389	100	91	138	37		06/20/96	HLS	96	0006349
23421	cs13dcpb	8260	0	48.842	50	98	227	10		06/20/96	HLS	96	0006349
23421	Acrylonb	8260	0	1043.66	1000	104	108	77		06/20/96	HLS	96	0006349
23421	Benzeneb	8260	4.94	47.82	50	86	144	73		06/20/96	HLS	96	0006349
23421	Brdiclmb	8260	0	52.809	50	106	155	35		06/20/96	HLS	96	0006349
23421	Brformb	8260	0	49.908	50	100	169	45		06/20/96	HLS	96	0006349
23421	2Hexanob	8260	0	102.209	100	102	164	10		06/20/96	HLS	96	0006349
23421	4Me2Penb	8260	0	99.868	100	100	111	68		06/20/96	HLS	96	0006349
23421	Acetoneb	8260	0	1086.45	1000	109	161	10		06/20/96	HLS	96	0006349
23421	Acrolenb	8260	0	397.812	1000	40	132	60	*	06/20/96	HLS	96	0006349
23421	14dc2beb	8260	0	86.731	100	87	129	11		06/20/96	HLS	96	0006349
23421	2Butanob	8260	0	118.023	100	118	208	79		06/20/96	HLS	96	0006349

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-->> S P I K E A C C U R A C Y D A T A continued <<---

QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23421	2Ceve	8260	0	5.921	50	12	199	10		06/20/96	HLS	96	0006349
23421	12DCAb	8260	0	50.832	50	102	155	49		06/20/96	HLS	96	0006349
23421	12Dcprob	8260	0	45.791	50	92	210	10		06/20/96	HLS	96	0006349
23421	11DCEb	8260	0	45.24	50	90	136	60		06/20/96	HLS	96	0006349
23421	123Tclpb	8260	0	53.49	50	107	103	44	*	06/20/96	HLS	96	0006349
23421	111TCAb	8260	0	50.227	50	100	162	52		06/20/96	HLS	96	0006349
23421	1122TCAb	8260	0	52.981	50	106	157	46		06/20/96	HLS	96	0006349
23421	112TCAb	8260	0	53.301	50	107	150	52		06/20/96	HLS	96	0006349
23421	11DCAb	8260	0	49.205	50	98	155	59		06/20/96	HLS	96	0006349
23570	phenolb	8270	0	58.91	150	39	96	10		07/03/96	SCL	96	0006157
23570	2clphenb	8270	0	116.2	150	77	199	54		07/03/96	SCL	96	0006157
23570	14dcbsb	8270	0	87.18	100	87	110	46		07/03/96	SCL	96	0006157
23570	nNdpamnb	8270	0	87.06	100	87	150	30		07/03/96	SCL	96	0006157
23570	PCPb	8270	0	113.26	150	76	139	15		07/03/96	SCL	96	0006157
23570	Pyreneb	8270	0	86.34	100	86	153	36		07/03/96	SCL	96	0006157
23570	4nitpheb	8270	0	59.71	150	40	112	10		07/03/96	SCL	96	0006157
23570	124Tcbsb	8270	0	82.7	100	83	108	49		07/03/96	SCL	96	0006157
23570	4cl3mepb	8270	0	128.95	150	86	104	53		07/03/96	SCL	96	0006157
23570	Acenaphb	8270	0	85.99	100	86	116	65		07/03/96	SCL	96	0006157
23570	24Dintob	8270	0	85.75	100	86	133	39		07/03/96	SCL	96	0006157

-->> Q. C. R. S. A C C U R A C Y D A T A <<---

QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
22962	CN-T	9012	.268	.2333	87.1	115	85		06/11/96	ejp
22987	Cr-MS	6020	100	90.3	90.3	120	80		06/12/96	sfl
22987	Pb-MS	6020	100	93.8	93.8	120	80		06/12/96	sfl
22987	Ag-MS	6020	100	86.5	86.5	120	80		06/12/96	sfl
22987	Sb-MS	6020	100	96.8	96.8	120	80		06/12/96	sfl
22987	Ba-MS	6020	100	96.5	96.5	120	80		06/12/96	sfl
22987	Cd-MS	6020	100	91.8	91.8	120	80		06/12/96	sfl

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-->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
22987	As-MS	6020	100	90.4	90.4	120	80		06/12/96	sfl
22989	Cd-disMS	6020	100	94.3	94.3	120	80		06/12/96	jmn
22989	Ba-disMS	6020	100	99.5	99.5	120	80		06/12/96	jmn
22989	Ag-disMS	6020	100	89.8	89.8	120	80		06/12/96	jmn
22989	Pb-disMS	6020	100	97.5	97.5	120	80		06/12/96	jmn
22989	Sb-disMS	6020	100	100.1	100.1	120	80		06/12/96	jmn
22989	As-disMS	6020	100	94.9	94.9	120	80		06/12/96	jmn
22989	Cr-disMS	6020	100	94.1	94.1	120	80		06/12/96	jmn
22999	Hg	7470	2.00	2.132	106.6	120	80		06/13/96	dsb
23000	Hg-dis	7470	2.00	1.968	98.4	120	80		06/13/96	dsb
23014	Tl-MS	6020	100	97	97.0	120	80		06/13/96	jmn
23014	Ni-MS	6020	100	90	90.0	120	80		06/13/96	jmn
23014	Be-MS	6020	100	103	103.0	120	80		06/13/96	jmn
23014	Cu-MS	6020	100	87	87.0	120	80		06/13/96	jmn
23014	Zn-MS	6020	100	89	89.0	120	80		06/13/96	jmn
23015	Tl-MS	6020	100	105	105.0	120	80		06/13/96	jmn
23015	Cu-MS	6020	100	92	92.0	120	80		06/13/96	jmn
23015	Ni-MS	6020	100	95	95.0	120	80		06/13/96	jmn
23015	Zn-MS	6020	100	94	94.0	120	80		06/13/96	jmn
23015	Be-disMS	6020	100	108	108.0	120	80		06/13/96	jmn
23101	Se-gfdis	270.2	20	22.3	111.5	120	80		06/20/96	jmn
23101	Se-GF	7740	20	19.7	98.5	120	80		06/19/96	jmn
23183	Tolueneb	8260	50	52.132	104.3	138	68		06/12/96	HLS
23183	tr12DCEb	8260	50	45.944	91.9	156	54		06/12/96	HLS
23183	tr13dcpb	8260	50	48.911	97.8	183	17		06/12/96	HLS
23183	Vinylace	8260	100	103.846	103.8	147	49		06/12/96	HLS
23183	Vinylclb	8260	50	45.844	91.7	251	10		06/12/96	HLS
23183	Ethbenzb	8260	50	47.677	95.4	162	37		06/12/96	HLS
23183	ethylmab	8260	100	117.46	117.5	139	37		06/12/96	HLS
23183	iodomthb	8260	100	56.88	56.9	137	37		06/12/96	HLS
23183	cs13dcpb	8260	50	48.284	96.6	227	10		06/12/96	HLS
23183	Dcldflmb	8260	50	40.934	81.9	146	72		06/12/96	HLS
23183	Dibrclmb	8260	50	50.397	100.8	142	56		06/12/96	HLS
23183	Dibrmthb	8260	50	49.866	99.7	110	78		06/12/96	HLS

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->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23183	EDBb	8260	50	53	106.0	112	70		06/12/96	HLS
23183	Chlformb	8260	50	46.161	92.3	138	51		06/12/96	HLS
23183	Clbenzb	8260	50	48.243	96.5	136	68		06/12/96	HLS
23183	Clethanb	8260	50	34.996	70.0	119	64		06/12/96	HLS
23183	Clmthanb	8260	50	48.945	97.9	273	10		06/12/96	HLS
23183	Crbndisb	8260	100	72.868	72.9	138	37		06/12/96	HLS
23183	Brdiclmb	8260	50	49.616	99.2	155	35		06/12/96	HLS
23183	Brformb	8260	50	57.391	114.8	169	45		06/12/96	HLS
23183	Brmethb	8260	50	43.681	87.4	242	10		06/12/96	HLS
23183	Carbtetb	8260	50	49.815	99.6	140	70		06/12/96	HLS
23183	2Butanob	8260	100	137.308	137.3	208	79		06/12/96	HLS
23183	2Ceve	8260	50	94.937	189.9	199	10		06/12/96	HLS
23183	2Hexanob	8260	100	137.329	137.3	164	10		06/12/96	HLS
23183	12Dcprob	8260	50	54.413	108.8	210	10		06/12/96	HLS
23183	14dc2beb	8260	100	90.723	90.7	129	11		06/12/96	HLS
23183	111TCAb	8260	50	43.583	87.2	162	52		06/12/96	HLS
23183	1122TCAb	8260	50	60.214	120.4	157	46		06/12/96	HLS
23183	112TCAb	8260	50	52.908	105.8	150	52		06/12/96	HLS
23183	11DCAb	8260	50	44.815	89.6	155	59		06/12/96	HLS
23183	11DCEb	8260	50	34.856	69.7	136	60		06/12/96	HLS
23183	4Me2Penb	8260	100	137.627	137.6	115	68	*	06/12/96	HLS
23183	Acetoneb	8260	1000	1115.07	111.5	161	10		06/12/96	HLS
23183	Acrolenb	8260	1000	999.146	99.9	132	60		06/12/96	HLS
23183	Acrylonb	8260	1000	1337.55	133.8	115	77	*	06/12/96	HLS
23183	Benzeneb	8260	50	53.556	107.1	144	73		06/12/96	HLS
23183	mpXylenb	8260	50	47.269	94.5	114	66		06/12/96	HLS
23183	Mthenecb	8260	50	36.032	72.1	221	10		06/12/96	HLS
23183	oXyleneb	8260	50	49.966	99.9	114	66		06/12/96	HLS
23183	Styreneb	8260	50	52.224	104.4	109	61		06/12/96	HLS
23183	TCEb	8260	50	48.984	98.0	136	66		06/12/96	HLS
23183	Tclflmtb	8260	50	27.026	54.1	181	17		06/12/96	HLS
23183	Tetcletb	8260	50	48.729	97.5	148	64		06/12/96	HLS
23183	123Tclpb	8260	50	53.542	107.1	115	44		06/12/96	HLS
23183	12DCAb	8260	50	50.49	101.0	155	49		06/12/96	HLS

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-->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23209	111TCAb	8260	50	48.437	96.9	162	52		06/11/96	HLS
23209	Dcldflmb	8260	50	57.249	114.5	146	72		06/11/96	HLS
23209	Dibrclmb	8260	50	46.457	92.9	142	56		06/11/96	HLS
23209	Dibrmthb	8260	50	50.049	100.1	110	78		06/11/96	HLS
23209	Brmethb	8260	50	59.531	119.1	242	10		06/11/96	HLS
23209	Carbtetb	8260	50	46.93	93.9	140	70		06/11/96	HLS
23209	Chlformb	8260	50	57.123	114.2	138	51		06/11/96	HLS
23209	11DCEb	8260	50	49.128	98.3	136	60		06/11/96	HLS
23209	123Tclpb	8260	50	39.997	80.0	115	44		06/11/96	HLS
23209	EDBb	8260	50	48.369	96.7	112	70		06/11/96	HLS
23209	Ethbenzb	8260	50	49.81	99.6	162	37		06/11/96	HLS
23209	ethylmab	8260	100	24.265	24.3	139	37	*	06/11/96	HLS
23209	1122TCAb	8260	50	45.657	91.3	157	46		06/11/96	HLS
23209	iodomthb	8260	100	101.557	101.6	137	37		06/11/96	HLS
23209	mpXylenb	8260	50	51.31	102.6	114	66		06/11/96	HLS
23209	Mthenecb	8260	50	77.240	154.5	221	10		06/11/96	HLS
23209	oXyleneb	8260	50	53.203	106.4	114	66		06/11/96	HLS
23209	Clbenzb	8260	50	51.601	103.2	136	68		06/11/96	HLS
23209	Clethanb	8260	50	79.83	159.7	119	64	*	06/11/96	HLS
23209	Clmthanb	8260	50	69.977	140.0	273	10		06/11/96	HLS
23209	2Butanob	8260	100	79.208	79.2	208	79		06/11/96	HLS
23209	Styreneb	8260	50	48.564	97.1	109	61		06/11/96	HLS
23209	TCEb	8260	50	47.591	95.2	136	66		06/11/96	HLS
23209	Tclflmtb	8260	50	68.724	137.4	181	17		06/11/96	HLS
23209	Tetcletb	8260	50	40.931	81.9	148	64		06/11/96	HLS
23209	Tolueneb	8260	50	49.104	98.2	138	68		06/11/96	HLS
23209	4Me2Penb	8260	100	77.272	77.3	115	68		06/11/96	HLS
23209	Acetoneb	8260	1000	952.762	95.3	161	10		06/11/96	HLS
23209	tr12DCEb	8260	50	61.708	123.4	156	54		06/11/96	HLS
23209	tr13dcpb	8260	50	46.157	92.3	183	17		06/11/96	HLS
23209	Vinylace	8260	100	16.747	16.7	147	49	*	06/11/96	HLS
23209	Vinylclb	8260	50	71.263	142.5	251	10		06/11/96	HLS
23209	112TCAb	8260	50	48.398	96.8	150	52		06/11/96	HLS
23209	11DCAb	8260	50	51.099	102.2	155	59		06/11/96	HLS

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->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23209	Brdiclmb	8260	50	51.425	102.9	155	35		06/11/96	HLS
23209	Brformb	8260	50	41.229	82.5	169	45		06/11/96	HLS
23209	12Dcprob	8260	50	48.918	97.8	210	10		06/11/96	HLS
23209	Crbndisb	8260	100	88.172	88.2	138	37		06/11/96	HLS
23209	cs13dcpb	8260	50	47.63	95.3	227	10		06/11/96	HLS
23209	Acrolenb	8260	1000	323.258	32.3	132	60	*	06/11/96	HLS
23209	Acrylonb	8260	1000	1089.29	108.9	115	77		06/11/96	HLS
23209	Benzeneb	8260	50	58.651	117.3	144	73		06/11/96	HLS
23209	2Ceve	8260	50	83.467	166.9	199	10		06/11/96	HLS
23209	2Hexanob	8260	100	63.273	63.3	164	10		06/11/96	HLS
23209	14dc2beb	8260	100	73.431	73.4	129	11		06/11/96	HLS
23209	12DCAb	8260	50	47.228	94.5	155	49		06/11/96	HLS
23415	14dc2beb	8260	100	69.255	69.3	129	11		06/18/96	HLS
23415	2Butanob	8260	100	104.08	104.1	208	79		06/18/96	HLS
23415	12Dcprob	8260	50	50.216	100.4	210	10		06/18/96	HLS
23415	12DCAb	8260	50	46.739	93.5	155	49		06/18/96	HLS
23415	112TCAb	8260	50	61.004	122.0	150	52		06/18/96	HLS
23415	11DCAb	8260	50	45.88	91.8	155	59		06/18/96	HLS
23415	11DCEb	8260	50	43.954	87.9	136	60		06/18/96	HLS
23415	123Tclpb	8260	50	53.847	107.7	115	44		06/18/96	HLS
23415	111TCAb	8260	50	48.041	96.1	162	52		06/18/96	HLS
23415	1122TCAb	8260	50	35.349	70.7	157	46		06/18/96	HLS
23415	Clethanb	8260	50	45.288	90.6	119	64		06/18/96	HLS
23415	Tclflmtb	8260	50	41.069	82.1	181	17		06/18/96	HLS
23415	Tetcletb	8260	50	52.071	104.1	148	64		06/18/96	HLS
23415	Tolueneb	8260	50	48.999	98.0	138	68		06/18/96	HLS
23415	tr12DCEb	8260	50	45.636	91.3	156	54		06/18/96	HLS
23415	tr13dcpb	8260	50	46.845	93.7	183	17		06/18/96	HLS
23415	Vinylace	8260	100	19.546	19.5	147	49	*	06/18/96	HLS
23415	Vinylclb	8260	50	36.527	73.1	251	10		06/18/96	HLS
23415	oXyleneb	8260	50	46.112	92.2	114	66		06/18/96	HLS
23415	Styreneb	8260	50	45.86	91.7	109	61		06/18/96	HLS
23415	TCEb	8260	50	63.964	127.9	136	66		06/18/96	HLS
23415	mpXylenb	8260	50	47.355	94.7	114	66		06/18/96	HLS

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-->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23415	Mthenecb	8260	50	47.711	95.4	221	10		06/18/96	HLS
23415	Dibrmthb	8260	50	50.572	101.1	110	78		06/18/96	HLS
23415	EDBb	8260	50	54.724	109.4	112	70		06/18/96	HLS
23415	Ethbenzb	8260	50	49.404	98.8	162	37		06/18/96	HLS
23415	ethylmab	8260	100	79.154	79.2	139	37		06/18/96	HLS
23415	iodomthb	8260	100	73.174	73.2	137	37		06/18/96	HLS
23415	Clmthanb	8260	50	35.616	71.2	273	10		06/18/96	HLS
23415	Crbndisb	8260	100	79.332	79.3	138	37		06/18/96	HLS
23415	cs13dcpb	8260	50	48.207	96.4	227	10		06/18/96	HLS
23415	Dcldflmb	8260	50	44.043	88.1	146	72		06/18/96	HLS
23415	Dibrclmb	8260	50	51.688	103.4	142	56		06/18/96	HLS
23415	Brmethb	8260	50	44.209	88.4	242	10		06/18/96	HLS
23415	Carbtetb	8260	50	43.72	87.4	140	70		06/18/96	HLS
23415	Chlformb	8260	50	51.073	102.1	138	51		06/18/96	HLS
23415	Clbenzb	8260	50	48.857	97.7	136	68		06/18/96	HLS
23415	Acrolenb	8260	1000	820.809	82.1	132	60		06/18/96	HLS
23415	Acrylonb	8260	1000	953.541	95.4	115	77		06/18/96	HLS
23415	Benzeneb	8260	50	49.758	99.5	144	73		06/18/96	HLS
23415	Brdiclmb	8260	50	49.415	98.8	155	35		06/18/96	HLS
23415	Brformb	8260	50	45.722	91.4	169	45		06/18/96	HLS
23415	2Ceve	8260	50	76.97	153.9	199	10		06/18/96	HLS
23415	2Hexanob	8260	100	99.835	99.8	164	10		06/18/96	HLS
23415	4Me2Penb	8260	100	101.298	101.3	115	68		06/18/96	HLS
23415	Acetoneb	8260	1000	809.09	80.9	161	10		06/18/96	HLS
23421	Tolueneb	8260	50	48.461	96.9	138	68		06/20/96	HLS
23421	tr12DCEb	8260	50	43.307	86.6	156	54		06/20/96	HLS
23421	tr13dcpb	8260	50	46.01	92.0	183	17		06/20/96	HLS
23421	Vinylace	8260	100	105.58	105.6	147	49		06/20/96	HLS
23421	Vinylclb	8260	50	33.966	67.9	251	10		06/20/96	HLS
23421	Styreneb	8260	50	48.578	97.2	109	61		06/20/96	HLS
23421	TCEb	8260	50	47.702	95.4	136	66		06/20/96	HLS
23421	Tclflmtb	8260	50	41.552	83.1	181	17		06/20/96	HLS
23421	Tetcletb	8260	50	44.901	89.8	148	64		06/20/96	HLS
23421	mpXylenb	8260	50	53.828	107.7	114	66		06/20/96	HLS

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-->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23421	Mthenecb	8260	50	43.227	86.5	221	10		06/20/96	HLS
23421	oXyleneb	8260	50	52.745	105.5	114	66		06/20/96	HLS
23421	Ethbenzb	8260	50	47.503	95.0	162	37		06/20/96	HLS
23421	ethylmab	8260	100	109.408	109.4	139	37		06/20/96	HLS
23421	iodomthb	8260	100	86.865	86.9	137	37		06/20/96	HLS
23421	Dcldflmb	8260	50	49.812	99.6	146	72		06/20/96	HLS
23421	Dibrclmb	8260	50	45.566	91.1	142	56		06/20/96	HLS
23421	Dibrmthb	8260	50	50.197	100.4	110	78		06/20/96	HLS
23421	EDBb	8260	50	48.149	96.3	112	70		06/20/96	HLS
23421	Brmethb	8260	50	41.105	82.2	242	10		06/20/96	HLS
23421	Carbtetb	8260	50	43.626	87.3	140	70		06/20/96	HLS
23421	Chlformb	8260	50	48.866	97.7	138	51		06/20/96	HLS
23421	Clbenzb	8260	50	45.568	91.1	136	68		06/20/96	HLS
23421	Clethanb	8260	50	45.964	91.9	119	64		06/20/96	HLS
23421	Clmthanb	8260	50	37.564	75.1	273	10		06/20/96	HLS
23421	Crbndisb	8260	100	85.145	85.1	138	37		06/20/96	HLS
23421	cs13dcpb	8260	50	46.146	92.3	227	10		06/20/96	HLS
23421	Acrylonb	8260	1000	1173.15	117.3	115	77	*	06/20/96	HLS
23421	Benzeneb	8260	50	48.424	96.8	144	73		06/20/96	HLS
23421	Brdiclmb	8260	50	50.094	100.2	155	35		06/20/96	HLS
23421	Brformb	8260	50	49.849	99.7	169	45		06/20/96	HLS
23421	2Hexanob	8260	100	117.129	117.1	164	10		06/20/96	HLS
23421	4Me2Penb	8260	100	115.154	115.2	115	68	*	06/20/96	HLS
23421	Acetoneb	8260	1000	1397.86	139.8	161	10		06/20/96	HLS
23421	Acrolenb	8260	1000	851.687	85.2	132	60		06/20/96	HLS
23421	14dc2beb	8260	100	96.981	97.0	129	11		06/20/96	HLS
23421	2Butanob	8260	100	135.103	135.1	208	79		06/20/96	HLS
23421	2Ceve	8260	50	36.454	72.9	199	10		06/20/96	HLS
23421	12DCAb	8260	50	50.235	100.5	155	49		06/20/96	HLS
23421	12Dcprob	8260	50	47.636	95.3	210	10		06/20/96	HLS
23421	11DCEb	8260	50	41.892	83.8	136	60		06/20/96	HLS
23421	123Tclpb	8260	50	27.847	55.7	115	44		06/20/96	HLS
23421	111TCAb	8260	50	47.932	95.9	162	52		06/20/96	HLS
23421	1122TCAb	8260	50	27.607	55.2	157	46		06/20/96	HLS

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****
->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23421	112TCAb	8260	50	51.244	102.5	150	52		06/20/96	HLS
23421	11DCAb	8260	50	44.15	88.3	155	59		06/20/96	HLS
23570	phenolb	8270	150	81.3	54.2	115	10		07/03/96	SCL
23570	2clphenb	8270	150	88.16	58.8	199	54		07/03/96	SCL
23570	14dcbsb	8270	100	53.21	53.2	110	46		07/03/96	SCL
23570	nNdpamnb	8270	100	59.89	59.9	150	30		07/03/96	SCL
23570	PCPb	8270	150	64.9	43.3	139	15		07/03/96	SCL
23570	Pyreneb	8270	100	55.14	55.1	153	36		07/03/96	SCL
23570	4nitpheb	8270	150	81.58	54.4	112	10		07/03/96	SCL
23570	124Tcbsb	8270	100	55.67	55.7	108	49		07/03/96	SCL
23570	4cl3mepb	8270	150	80.93	54.0	104	53		07/03/96	SCL
23570	Acenaphb	8270	100	52.11	52.1	116	65	*	07/03/96	SCL
23570	24Dintob	8270	100	52.62	52.6	133	39		07/03/96	SCL

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->> P R E C I S I O N D A T A <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
22962	CN-T	9012	.3556	.3661	2.90979	30		96	0006157	06/11/96	ejp
22987	Cr-MS	6020	90.1	92.1	2.19538	20		96	0006157	06/12/96	sfl
22987	Pb-MS	6020	94.7	96.8	2.19321	20		96	0006157	06/12/96	sfl
22987	Ag-MS	6020	85.2	85.5	.351493	20		96	0006157	06/12/96	sfl
22987	Sb-MS	6020	98.7	100.6	1.90667	20		96	0006157	06/12/96	sfl
22987	Ba-MS	6020	136.2	138.5	1.67455	20		96	0006157	06/12/96	sfl
22987	Cd-MS	6020	92.8	94.4	1.70940	20		96	0006157	06/12/96	sfl
22987	As-MS	6020	102	104.8	2.70793	20		96	0006157	06/12/96	sfl
22989	Cd-disMS	6020	93.3	93.9	.641025	20		96	0006157	06/12/96	jmn
22989	Ba-disMS	6020	129.2	128.7	.387747	20		96	0006157	06/12/96	jmn
22989	Ag-disMS	6020	62.2	61.2	1.62074	20		96	0006157	06/12/96	jmn
22989	Pb-disMS	6020	95.9	95.9	0	20		96	0006157	06/12/96	jmn
22989	Sb-disMS	6020	100.4	100.6	.199005	20		96	0006157	06/12/96	jmn
22989	As-disMS	6020	101	102.8	1.76643	20		96	0006157	06/12/96	jmn

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-->> P R E C I S I O N D A T A continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
22989	Cr-disMS	6020	91.3	92.1	.87241	20		96	0006157	06/12/96	jmn
22999	Hg	7470	2.183	2.17	.597289	20		96	0006157	06/13/96	dsb
23000	Hg-dis	7470	1.892	1.98	4.54545	20		96	0006157	06/13/96	dsb
23014	Tl-MS	6020	97	100	3.04568	20		96	0006157	06/13/96	jmn
23014	Ni-MS	6020	90	93	3.27868	20		96	0006157	06/13/96	jmn
23014	Be-MS	6020	103	103	0	20		96	0006157	06/13/96	jmn
23014	Cu-MS	6020	88	90	2.24719	20		96	0006157	06/13/96	jmn
23014	Zn-MS	6020	92	94	2.15053	20		96	0006157	06/13/96	jmn
23015	Tl-MS	6020	101	103	1.96078	20		96	0006157	06/13/96	jmn
23015	Cu-MS	6020	92	92	0	20		96	0006157	06/13/96	jmn
23015	Ni-MS	6020	92	93	1.08108	20		96	0006157	06/13/96	jmn
23015	Zn-MS	6020	93	94	1.06951	20		96	0006157	06/13/96	jmn
23015	Be-disMS	6020	105	104	.956937	20		96	0006157	06/13/96	jmn
23101	Se-gfdis	270.2	20.47	19.49	4.90490	20		96	0006157	06/20/96	jmn
23101	Se-GF	7740	19.44	15.83	20.4706	20	*	96	0006157	06/19/96	jmn
23183	Tolueneb	8260	57.226	54.753	4.41689	17		96	0006157	06/12/96	HLS
23183	tr12DCEb	8260	45.127	44.599	1.17691	40		96	0006157	06/12/96	HLS
23183	tr13dcpb	8260	51.617	52.504	1.70378	40		96	0006157	06/12/96	HLS
23183	Vinylace	8260	104.698	123.417	16.4119	40		96	0006157	06/12/96	HLS
23183	Vinylclb	8260	48.05	45.257	5.98668	65		96	0006157	06/12/96	HLS
23183	Ethbenzb	8260	48.442	48.016	.883286	40		96	0006157	06/12/96	HLS
23183	ethylmab	8260	106.648	125.485	16.2294	40		96	0006157	06/12/96	HLS
23183	iodomthb	8260	56.473	98.959	54.6682	40	*	96	0006157	06/12/96	HLS
23183	cs13dcpb	8260	50.46	51.528	2.09436	65		96	0006157	06/12/96	HLS
23183	Dcldflmb	8260	43.849	40.694	7.46365	40		96	0006157	06/12/96	HLS
23183	Dibrclmb	8260	45.875	49.264	7.12431	65		96	0006157	06/12/96	HLS
23183	Dibrmthb	8260	47.345	49.578	4.60778	40		96	0006157	06/12/96	HLS
23183	EDBb	8260	46.108	50.129	8.35645	40		96	0006157	06/12/96	HLS
23183	Chlformb	8260	45.306	47.379	4.47321	40		96	0006157	06/12/96	HLS
23183	Clbenzb	8260	46.785	50.231	7.10398	17		96	0006157	06/12/96	HLS
23183	Clethanb	8260	32.511	41.409	24.0746	65		96	0006157	06/12/96	HLS
23183	Clmthanb	8260	55.007	44.613	20.8672	65		96	0006157	06/12/96	HLS
23183	Crbndisb	8260	76.309	92.811	19.5151	40		96	0006157	06/12/96	HLS
23183	Brdiclmb	8260	49.949	49.245	1.41944	40		96	0006157	06/12/96	HLS

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-->> P R E C I S I O N D A T A continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23183	Brformb	8260	49.562	53.232	7.14049	40		96	0006157	06/12/96	HLS
23183	Brmethb	8260	41.771	40.213	3.80074	65		96	0006157	06/12/96	HLS
23183	Carbtetb	8260	35.122	37.144	5.59599	40		96	0006157	06/12/96	HLS
23183	2Butanob	8260	111.753	113.467	1.52206	40		96	0006157	06/12/96	HLS
23183	2Hexanob	8260	106.569	117.517	9.77124	40		96	0006157	06/12/96	HLS
23183	12Dcprob	8260	52.114	53.244	2.14506	65		96	0006157	06/12/96	HLS
23183	14dc2beb	8260	94.964	101.932	7.07784	40		96	0006157	06/12/96	HLS
23183	111TCAb	8260	43.624	45.932	5.15431	40		96	0006157	06/12/96	HLS
23183	1122TCAb	8260	55.899	53.807	3.81382	40		96	0006157	06/12/96	HLS
23183	112TCAb	8260	50.999	51.021	.043128	40		96	0006157	06/12/96	HLS
23183	11DCAb	8260	48.118	45.53	5.52708	40		96	0006157	06/12/96	HLS
23183	11DCEb	8260	39.655	42.526	6.98701	40		96	0006157	06/12/96	HLS
23183	4Me2Penb	8260	116.332	114.918	1.22291	40		96	0006157	06/12/96	HLS
23183	Acetoneb	8260	988.674	1045.39	5.57661	40		96	0006157	06/12/96	HLS
23183	Acrolenb	8260	812.656	966.904	17.3355	40		96	0006157	06/12/96	HLS
23183	Acrylonb	8260	1181.1	1096.35	7.44253	40		96	0006157	06/12/96	HLS
23183	Benzeneb	8260	53.15	51.732	2.70399	22		96	0006157	06/12/96	HLS
23183	mpXylenb	8260	45.588	51.059	11.3216	40		96	0006157	06/12/96	HLS
23183	Mthenecb	8260	28.95	45.792	45.0670	65		96	0006157	06/12/96	HLS
23183	oXyleneb	8260	46.775	50.469	7.59738	40		96	0006157	06/12/96	HLS
23183	Styreneb	8260	51.263	51.758	.960969	40		96	0006157	06/12/96	HLS
23183	TCEb	8260	52.007	49.959	4.01702	20		96	0006157	06/12/96	HLS
23183	Tclflmtb	8260	33.159	39.847	18.3217	65		96	0006157	06/12/96	HLS
23183	Tetcletb	8260	43.541	49.74	13.2910	40		96	0006157	06/12/96	HLS
23183	123Tclpb	8260	49.913	49.95	.074101	40		96	0006157	06/12/96	HLS
23183	12DCAb	8260	47.876	50.978	6.27592	40		96	0006157	06/12/96	HLS
23415	14dc2beb	8260	73.948	77.879	5.17826	40		96	0006245	06/18/96	HLS
23415	2Butanob	8260	103.441	94.889	8.62401	40		96	0006245	06/18/96	HLS
23415	12Dcprob	8260	48.728	50.619	3.80685	65		96	0006245	06/18/96	HLS
23415	12DCAb	8260	48.793	48.298	1.01966	40		96	0006245	06/18/96	HLS
23415	112TCAb	8260	54.187	52.211	3.71435	40		96	0006245	06/18/96	HLS
23415	11DCAb	8260	44.141	42.539	3.69635	40		96	0006245	06/18/96	HLS
23415	11DCEb	8260	32.36	32.173	.579548	40		96	0006245	06/18/96	HLS
23415	123Tclpb	8260	55.361	60.85	9.44661	40		96	0006245	06/18/96	HLS

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->> P R E C I S I O N D A T A continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23415	111TCAb	8260	45.86	46.129	.584852	40		96	0006245	06/18/96	HLS
23415	1122TCAb	8260	53.165	56.994	6.95176	40		96	0006245	06/18/96	HLS
23415	Clethanb	8260	33.366	35.228	5.42904	65		96	0006245	06/18/96	HLS
23415	Tclflmtb	8260	30.636	29.002	5.47972	65		96	0006245	06/18/96	HLS
23415	Tetcletb	8260	56.817	56.614	.357926	40		96	0006245	06/18/96	HLS
23415	Tolueneb	8260	49.101	50.355	2.52171	17		96	0006245	06/18/96	HLS
23415	tr12DCEb	8260	41.205	42.842	3.89543	40		96	0006245	06/18/96	HLS
23415	tr13dcpb	8260	47.32	46.896	.900059	40		96	0006245	06/18/96	HLS
23415	Vinylace	8260	58.449	29.245	66.6043	40	*	96	0006245	06/18/96	HLS
23415	Vinylclb	8260	30.349	29.595	2.51568	65		96	0006245	06/18/96	HLS
23415	oXyleneb	8260	49.383	50.188	1.61693	40		96	0006245	06/18/96	HLS
23415	Styreneb	8260	47.145	46.808	.71738	40		96	0006245	06/18/96	HLS
23415	TCEb	8260	50.438	50.348	.178596	20		96	0006245	06/18/96	HLS
23415	mpXylenb	8260	48.533	49.842	2.66124	40		96	0006245	06/18/96	HLS
23415	Mthenecb	8260	25.323	16.672	41.2001	65		96	0006245	06/18/96	HLS
23415	Dibrmthb	8260	50.773	50.247	1.04137	40		96	0006245	06/18/96	HLS
23415	EDBb	8260	54.015	53.493	.971090	40		96	0006245	06/18/96	HLS
23415	Ethbenzb	8260	49.584	50.156	1.14698	40		96	0006245	06/18/96	HLS
23415	ethylmab	8260	102.573	60.816	51.1136	40	*	96	0006245	06/18/96	HLS
23415	iodomthb	8260	36.512	32.219	12.4921	40		96	0006245	06/18/96	HLS
23415	Clmthanb	8260	32.251	28.377	12.7795	65		96	0006245	06/18/96	HLS
23415	Crbndisb	8260	35.383	29.791	17.1602	40		96	0006245	06/18/96	HLS
23415	cs13dcpb	8260	45.784	45.049	1.61835	65		96	0006245	06/18/96	HLS
23415	Dcldflmb	8260	29.103	29.887	2.65807	40		96	0006245	06/18/96	HLS
23415	Dibrclmb	8260	51.705	54.015	4.37003	65		96	0006245	06/18/96	HLS
23415	Brmethb	8260	38.932	36.741	5.79070	65		96	0006245	06/18/96	HLS
23415	Carbtetb	8260	45.374	46.305	2.03099	40		96	0006245	06/18/96	HLS
23415	Chlformb	8260	49.242	52.816	7.00386	40		96	0006245	06/18/96	HLS
23415	Clbenzb	8260	49.988	50.912	1.83151	17		96	0006245	06/18/96	HLS
23415	Acrolenb	8260	708.84	358.594	65.6239	40	*	96	0006245	06/18/96	HLS
23415	Acrylonb	8260	634.078	604.066	4.84790	40		96	0006245	06/18/96	HLS
23415	Benzeneb	8260	46.849	46.876	.057615	22		96	0006245	06/18/96	HLS
23415	Brdiclmb	8260	49.157	49.266	.221492	40		96	0006245	06/18/96	HLS
23415	Brformb	8260	46.805	47.439	1.34544	40		96	0006245	06/18/96	HLS

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-->> P R E C I S I O N D A T A continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23415	2Ceve	8260	4.314	4.49	3.99818	65		96	0006245	06/18/96	HLS
23415	2Hexanob	8260	111.618	81.962	30.6395	40		96	0006245	06/18/96	HLS
23415	4Me2Penb	8260	105.593	89.767	16.2018	40		96	0006245	06/18/96	HLS
23415	Acetoneb	8260	585.385	561.02	4.25067	40		96	0006245	06/18/96	HLS
23421	Tolueneb	8260	50.459	47.804	5.40386	17		96	0006349	06/20/96	HLS
23421	tr12DCEb	8260	47.324	45.279	4.41670	40		96	0006349	06/20/96	HLS
23421	tr13dcpb	8260	48.92	49.447	1.07149	40		96	0006349	06/20/96	HLS
23421	Vinylace	8260	21.876	38.297	54.5793	40	*	96	0006349	06/20/96	HLS
23421	Vinylclb	8260	41.281	39.374	4.72878	65		96	0006349	06/20/96	HLS
23421	Styreneb	8260	48.041	47.195	1.77663	40		96	0006349	06/20/96	HLS
23421	TCEb	8260	47.11	46.835	.585448	20		96	0006349	06/20/96	HLS
23421	Tclflmtb	8260	42.634	47.079	9.90937	65		96	0006349	06/20/96	HLS
23421	Tetcletb	8260	47.052	51.918	9.83328	40		96	0006349	06/20/96	HLS
23421	mpXylenb	8260	51.554	49.218	4.63620	40		96	0006349	06/20/96	HLS
23421	Mthenecb	8260	47.133	48.26	2.36285	65		96	0006349	06/20/96	HLS
23421	oXyleneb	8260	48.008	48.66	1.34894	40		96	0006349	06/20/96	HLS
23421	Ethbenzb	8260	50.364	48.89	2.97015	40		96	0006349	06/20/96	HLS
23421	ethylmab	8260	34.468	71.964	70.4600	40	*	96	0006349	06/20/96	HLS
23421	iodomthb	8260	89.205	96.5	7.85654	40		96	0006349	06/20/96	HLS
23421	Dcldflmb	8260	40.815	41.128	.763945	40		96	0006349	06/20/96	HLS
23421	Dibrclmb	8260	50.255	52.853	5.03937	65		96	0006349	06/20/96	HLS
23421	Dibrmthb	8260	48.598	51.512	5.82159	40		96	0006349	06/20/96	HLS
23421	EDBb	8260	47.247	51.624	8.85396	40		96	0006349	06/20/96	HLS
23421	Brmethb	8260	41.905	46.319	10.0063	65		96	0006349	06/20/96	HLS
23421	Carbtetb	8260	45.658	44.483	2.60702	40		96	0006349	06/20/96	HLS
23421	Chlformb	8260	54.607	55.328	1.31168	40		96	0006349	06/20/96	HLS
23421	Clbenzb	8260	49.687	49.063	1.26379	17		96	0006349	06/20/96	HLS
23421	Clethanb	8260	50.09	54.029	7.56634	65		96	0006349	06/20/96	HLS
23421	Clmthanb	8260	42.823	37.927	12.1263	65		96	0006349	06/20/96	HLS
23421	Crbndisb	8260	90.128	91.389	1.38940	40		96	0006349	06/20/96	HLS
23421	cs13dcpb	8260	47.359	48.842	3.08312	65		96	0006349	06/20/96	HLS
23421	Acrylonb	8260	927.348	1043.66	11.8022	40		96	0006349	06/20/96	HLS
23421	Benzeneb	8260	50.323	47.82	5.10072	22		96	0006349	06/20/96	HLS
23421	Brdiclmb	8260	50.828	52.809	3.82295	40		96	0006349	06/20/96	HLS

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-->> P R E C I S I O N D A T A continued <<---

QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23421	Brformb	8260	47.333	49.908	5.29612	40		96	0006349	06/20/96	HLS
23421	2Hexanob	8260	70.853	102.209	36.2367	40		96	0006349	06/20/96	HLS
23421	4Me2Penb	8260	88.524	99.868	12.0429	40		96	0006349	06/20/96	HLS
23421	Acetoneb	8260	911.457	1086.45	17.5176	40		96	0006349	06/20/96	HLS
23421	Acrolenb	8260	248.816	397.812	46.0839	40	*	96	0006349	06/20/96	HLS
23421	14dc2beb	8260	78.67	86.731	9.74722	40		96	0006349	06/20/96	HLS
23421	2Butanob	8260	93.931	118.023	22.7332	40		96	0006349	06/20/96	HLS
23421	2Ceve	8260	6.201	5.921	4.61969	65		96	0006349	06/20/96	HLS
23421	12DCAb	8260	49.277	50.832	3.10661	40		96	0006349	06/20/96	HLS
23421	12Dcprob	8260	47.045	45.791	2.70153	65		96	0006349	06/20/96	HLS
23421	11DCEb	8260	42.506	45.24	6.23162	40		96	0006349	06/20/96	HLS
23421	123Tclpb	8260	48.557	53.49	9.66809	40		96	0006349	06/20/96	HLS
23421	111TCAb	8260	50.551	50.227	.642997	40		96	0006349	06/20/96	HLS
23421	1122TCAb	8260	50.785	52.981	4.23260	40		96	0006349	06/20/96	HLS
23421	112TCAb	8260	49.309	53.301	7.78091	40		96	0006349	06/20/96	HLS
23421	11DCAb	8260	46.022	49.205	6.68507	40		96	0006349	06/20/96	HLS
23570	phenolb	8270	58.91	53.66	9.32752	21		96	0006157	07/03/96	SCL
23570	2clphenb	8270	116.2	102.59	12.4411	18		96	0006157	07/03/96	SCL
23570	14dcbsb	8270	87.18	73.72	16.7308	18		96	0006157	07/03/96	SCL
23570	nNdpamnb	8270	108.12	87.06	21.5800	30		96	0006157	07/03/96	SCL
23570	PCPb	8270	141.55	113.26	22.2047	39		96	0006157	07/03/96	SCL
23570	Pyreneb	8270	86.34	77.12	11.2810	21		96	0006157	07/03/96	SCL
23570	4nitpheb	8270	59.43	53.71	10.1113	90		96	0006157	07/03/96	SCL
23570	124Tcbsb	8270	82.7	74.56	10.3522	24		96	0006157	07/03/96	SCL
23570	4cl3mepb	8270	128.95	108.11	17.5820	17	*	96	0006157	07/03/96	SCL
23570	Acenaphb	8270	85.99	72.65	16.8179	20		96	0006157	07/03/96	SCL
23570	24Dintob	8270	93.88	85.75	9.05194	25		96	0006157	07/03/96	SCL

-->> M E T H O D B L A N K D A T A <<---

QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
22962	CN-T	9012	.01	BDL	MG/L	06/11/96	ejp

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-->> M E T H O D B L A N K D A T A continued <<---

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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
22987	Cr-MS	6020	10	BDL	UG/L	06/12/96	sfl
22987	Pb-MS	6020	50	BDL	UG/L	06/12/96	sfl
22987	Ag-MS	6020	10	BDL	UG/L	06/12/96	sfl
22987	Sb-MS	6020	50	BDL	UG/L	06/12/96	sfl
22987	Ba-MS	6020	10	BDL	UG/L	06/12/96	sfl
22987	Cd-MS	6020	5	BDL	UG/L	06/12/96	sfl
22987	As-MS	6020	10	BDL	UG/L	06/12/96	sfl
22989	Cd-disMS	6020	5	BDL	UG/L	06/12/96	jmn
22989	Ba-disMS	6020	10	BDL	UG/L	06/12/96	jmn
22989	Ag-disMS	6020	10	BDL	UG/L	06/12/96	jmn
22989	Pb-disMS	6020	50	BDL	UG/L	06/12/96	jmn
22989	Sb-disMS	6020	50	BDL	UG/L	06/12/96	jmn
22989	As-disMS	6020	10	BDL	UG/L	06/12/96	jmn
22989	Cr-disMS	6020	10	BDL	UG/L	06/12/96	jmn
22999	Hg	7470	50	BDL	UG/L	06/13/96	dsb
23000	Hg-dis	7470	50	BDL	UG/L	06/13/96	dsb
23014	Tl-MS	6020	10	BDL	UG/L	06/13/96	jmn
23014	Ni-MS	6020	40	BDL	UG/L	06/13/96	jmn
23014	Be-MS	6020	5	BDL	UG/L	06/13/96	jmn
23014	Cu-MS	6020	25	BDL	UG/L	06/13/96	jmn
23014	Zn-MS	6020	20	BDL	UG/L	06/13/96	jmn
23015	Tl-MS	6020	10	BDL	UG/L	06/13/96	jmn
23015	Cu-MS	6020	25	BDL	UG/L	06/13/96	jmn
23015	Ni-MS	6020	40	BDL	UG/L	06/13/96	jmn
23015	Zn-MS	6020	20	BDL	UG/L	06/13/96	jmn
23015	Be-disMS	6020	5	BDL	UG/L	06/13/96	jmn
23101	Se-gfdis	270.2	10	BDL	UG/L	06/20/96	jmn
23101	Se-GF	7740	10	BDL	UG/L	06/19/96	jmn
23183	Tolueneb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	tr12DCEb	8260	5	BDL	UG/L	06/12/96	HLS
23183	tr13dcpb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Vinylace	8260	10	BDL	UG/L	06/12/96	HLS
23183	Vinylclb	8260	10	BDL	UG/L	06/12/96	HLS
23183	Ethbenzb	8260	5	BDL	UG/L	06/12/96	HLS

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->> M E T H O D B L A N K D A T A continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23183	ethylmab	8260	5	BDL	UG/L	06/12/96	HLS
23183	iodomthb	8260	5	BDL	UG/L	06/12/96	HLS
23183	cs13dcpb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Dcldflmb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Dibrclmb	8260	10	BDL	UG/L	06/12/96	HLS
23183	Dibrmthb	8260	5	BDL	UG/L	06/12/96	HLS
23183	EDBb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Chlformb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Clbenzb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Clethanb	8260	10	BDL	UG/L	06/12/96	HLS
23183	Clmthanb	8260	10	BDL	UG/L	06/12/96	HLS
23183	Crbndisb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Brdiclmb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Brformb	8260	5	BDL	UG/L	06/12/96	HLS
23183	Brmethb	8260	10	BDL	UG/L	06/12/96	HLS
23183	Carbtetb	8260	5	BDL	UG/L	06/12/96	HLS
23183	2Butanob	8260	50	BDL	UG/L	06/12/96	HLS
23183	2Ceve	8260	10	BDL	UG/L	06/12/96	HLS
23183	2Hexanob	8260	50	BDL	UG/L	06/12/96	HLS
23183	12Dcprob	8260	5	BDL	UG/L	06/12/96	HLS
23183	14dc2beb	8260	10	BDL	UG/L	06/12/96	HLS
23183	111TCAb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	1122TCAb	8260	5	BDL	UG/L	06/12/96	HLS
23183	112TCAb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	11DCAb	8260	5	BDL	UG/L	06/12/96	HLS
23183	11DCEb	8260	5	BDL	UG/L	06/12/96	HLS
23183	4Me2Penb	8260	50	BDL	UG/L	06/12/96	HLS
23183	Acetoneb	8260	50	BDL	UG/L	06/12/96	HLS
23183	Acrolenb	8260	100	BDL	UG/L	06/12/96	HLS
23183	Acrylonb	8260	100	BDL	UG/L	06/12/96	HLS
23183	Benzeneb	8260	5	BDL	UG/L	06/12/96	HLS
23183	mpXylenb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	Mthenecb	8260	5	BDL	UG/L	06/12/96	HLS
23183	oXyleneb	8260	.5	BDL	UG/L	06/12/96	HLS

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-->> METHOD BLANK DATA continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23183	Styreneb	8260	5	BDL	UG/L	06/12/96	HLS
23183	TCEb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	Tclflmtb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	Tetcletb	8260	5	BDL	UG/L	06/12/96	HLS
23183	123Tclpb	8260	.5	BDL	UG/L	06/12/96	HLS
23183	12DCAb	8260	5	BDL	UG/L	06/12/96	HLS
23209	111TCAb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	Dcldflmb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Dibrclmb	8260	10	BDL	UG/L	06/11/96	HLS
23209	Dibrmthb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Brmethb	8260	10	BDL	UG/L	06/11/96	HLS
23209	Carbtetb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Chlformb	8260	5	BDL	UG/L	06/11/96	HLS
23209	11DCEb	8260	5	BDL	UG/L	06/11/96	HLS
23209	123Tclpb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	EDBb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Ethbenzb	8260	5	BDL	UG/L	06/11/96	HLS
23209	ethylmab	8260	5	BDL	UG/L	06/11/96	HLS
23209	1122TCAb	8260	5	BDL	UG/L	06/11/96	HLS
23209	iodomthb	8260	5	BDL	UG/L	06/11/96	HLS
23209	mpXylenb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	Mthenecb	8260	5	BDL	UG/L	06/11/96	HLS
23209	oXyleneb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	Clbenzb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Clethanb	8260	10	BDL	UG/L	06/11/96	HLS
23209	Clmthanb	8260	10	BDL	UG/L	06/11/96	HLS
23209	2Butanob	8260	50	BDL	UG/L	06/11/96	HLS
23209	Styreneb	8260	5	BDL	UG/L	06/11/96	HLS
23209	TCEb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	Tclflmtb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	Tetcletb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Tolueneb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	4Me2Penb	8260	50	BDL	UG/L	06/11/96	HLS
23209	Acetoneb	8260	50	BDL	UG/L	06/11/96	HLS

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->> M E T H O D B L A N K D A T A continued <<---
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C Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23209	tr12DCEb	8260	5	BDL	UG/L	06/11/96	HLS
23209	tr13dcpb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Vinylace	8260	10	BDL	UG/L	06/11/96	HLS
23209	Vinylclb	8260	10	BDL	UG/L	06/11/96	HLS
23209	112TCAb	8260	.5	BDL	UG/L	06/11/96	HLS
23209	11DCAb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Brdiclmb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Brformb	8260	5	BDL	UG/L	06/11/96	HLS
23209	12Dcprob	8260	5	BDL	UG/L	06/11/96	HLS
23209	Crbndisb	8260	5	BDL	UG/L	06/11/96	HLS
23209	cs13dcpb	8260	5	BDL	UG/L	06/11/96	HLS
23209	Acrolenb	8260	100	BDL	UG/L	06/11/96	HLS
23209	Acrylonb	8260	100	BDL	UG/L	06/11/96	HLS
23209	Benzeneb	8260	5	BDL	UG/L	06/11/96	HLS
23209	2Ceve	8260	10	BDL	UG/L	06/11/96	HLS
23209	2Hexanob	8260	50	BDL	UG/L	06/11/96	HLS
23209	14dc2beb	8260	10	BDL	UG/L	06/11/96	HLS
23209	12DCAb	8260	5	BDL	UG/L	06/11/96	HLS
23415	14dc2beb	8260	10	BDL	UG/L	06/18/96	HLS
23415	2Butanob	8260	50	BDL	UG/L	06/18/96	HLS
23415	12Dcprob	8260	5	BDL	UG/L	06/18/96	HLS
23415	12DCAb	8260	5	BDL	UG/L	06/18/96	HLS
23415	112TCAb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	11DCAb	8260	5	BDL	UG/L	06/18/96	HLS
23415	11DCEb	8260	5	BDL	UG/L	06/18/96	HLS
23415	123Tclpb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	111TCAb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	1122TCAb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Clethanb	8260	10	BDL	UG/L	06/18/96	HLS
23415	Tclflmtb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	Tetcletb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Tolueneb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	tr12DCEb	8260	5	BDL	UG/L	06/18/96	HLS
23415	tr13dcpb	8260	5	BDL	UG/L	06/18/96	HLS

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-->> M E T H O D B L A N K D A T A continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23415	Vinylace	8260	10	BDL	UG/L	06/18/96	HLS
23415	Vinylclb	8260	10	BDL	UG/L	06/18/96	HLS
23415	oXyleneb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	Styreneb	8260	5	BDL	UG/L	06/18/96	HLS
23415	TCEb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	mpXylenb	8260	.5	BDL	UG/L	06/18/96	HLS
23415	Mthenecb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Dibrmthb	8260	5	BDL	UG/L	06/18/96	HLS
23415	EDBb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Ethbenzb	8260	5	BDL	UG/L	06/18/96	HLS
23415	ethylmab	8260	5	BDL	UG/L	06/18/96	HLS
23415	iodomthb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Clmthanb	8260	10	BDL	UG/L	06/18/96	HLS
23415	Crbndisb	8260	5	BDL	UG/L	06/18/96	HLS
23415	cs13dcpb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Dcldflmb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Dibrclmb	8260	10	BDL	UG/L	06/18/96	HLS
23415	Brmethb	8260	10	BDL	UG/L	06/18/96	HLS
23415	Carbtetb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Chlformb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Clbenzb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Acrolenb	8260	100	BDL	UG/L	06/18/96	HLS
23415	Acrylonb	8260	100	BDL	UG/L	06/18/96	HLS
23415	Benzeneb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Brdiclmb	8260	5	BDL	UG/L	06/18/96	HLS
23415	Brformb	8260	5	BDL	UG/L	06/18/96	HLS
23415	2Ceve	8260	10	BDL	UG/L	06/18/96	HLS
23415	2Hexanob	8260	50	BDL	UG/L	06/18/96	HLS
23415	4Me2Penb	8260	50	BDL	UG/L	06/18/96	HLS
23415	Acetoneb	8260	50	BDL	UG/L	06/18/96	HLS
23416	iodomthb	8260	5	BDL	UG/L	06/19/96	HLS
23416	11DCEb	8260	5	BDL	UG/L	06/19/96	HLS
23416	oXyleneb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	123Tclpb	8260	.5	BDL	UG/L	06/19/96	HLS

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-->> M E T H O D B L A N K D A T A continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23416	Styreneb	8260	5	BDL	UG/L	06/19/96	HLS
23416	TCEb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	Tclflmtb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	Tetcletb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Tolueneb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	tr12DCEb	8260	5	BDL	UG/L	06/19/96	HLS
23416	tr13dcpb	8260	5	BDL	UG/L	06/19/96	HLS
23416	12DCAb	8260	5	BDL	UG/L	06/19/96	HLS
23416	12Dcprob	8260	5	BDL	UG/L	06/19/96	HLS
23416	Vinylace	8260	10	BDL	UG/L	06/19/96	HLS
23416	Vinylclb	8260	10	BDL	UG/L	06/19/96	HLS
23416	14dc2beb	8260	10	BDL	UG/L	06/19/96	HLS
23416	2Butanob	8260	50	BDL	UG/L	06/19/96	HLS
23416	2Ceve	8260	10	BDL	UG/L	06/19/96	HLS
23416	111TCAb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	1122TCAb	8260	5	BDL	UG/L	06/19/96	HLS
23416	2Hexanob	8260	50	BDL	UG/L	06/19/96	HLS
23416	4Me2Penb	8260	50	BDL	UG/L	06/19/96	HLS
23416	Acetoneb	8260	50	BDL	UG/L	06/19/96	HLS
23416	Acrolenb	8260	100	BDL	UG/L	06/19/96	HLS
23416	Acrylonb	8260	100	BDL	UG/L	06/19/96	HLS
23416	Benzeneb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Brdiclmb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Brformb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Brmethb	8260	10	BDL	UG/L	06/19/96	HLS
23416	Carbtetb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Chlformb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Clbenzb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Clethanb	8260	10	BDL	UG/L	06/19/96	HLS
23416	Clmthanb	8260	10	BDL	UG/L	06/19/96	HLS
23416	Crbndisb	8260	5	BDL	UG/L	06/19/96	HLS
23416	cs13dcpb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Dcldflmb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Dibrclmb	8260	10	BDL	UG/L	06/19/96	HLS

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Report Date: 07/24/96 QUALITY CONTROL REPORT BY LAB PROJECT NUMBER

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-->> METHOD BLANK DATA continued <<---

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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23416	Dibrmthb	8260	5	BDL	UG/L	06/19/96	HLS
23416	EDBb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Ethbenzb	8260	5	BDL	UG/L	06/19/96	HLS
23416	ethylmab	8260	5	BDL	UG/L	06/19/96	HLS
23416	112TCAb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	11DCAb	8260	5	BDL	UG/L	06/19/96	HLS
23416	mpXylenb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	Mthenecb	8260	5	BDL	UG/L	06/19/96	HLS
23421	Tolueneb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	tr12DCEb	8260	5	BDL	UG/L	06/20/96	HLS
23421	tr13dcpb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Vinylace	8260	10	BDL	UG/L	06/20/96	HLS
23421	Vinylclb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Styreneb	8260	5	BDL	UG/L	06/20/96	HLS
23421	TCEb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	Tclflmtb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	Tetcletb	8260	5	BDL	UG/L	06/20/96	HLS
23421	mpXylenb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	Mthenecb	8260	5	BDL	UG/L	06/20/96	HLS
23421	oXyleneb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	Ethbenzb	8260	5	BDL	UG/L	06/20/96	HLS
23421	ethylmab	8260	5	BDL	UG/L	06/20/96	HLS
23421	iodomthb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Dcldflmb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Dibrclmb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Dibrmthb	8260	5	BDL	UG/L	06/20/96	HLS
23421	EDBb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Brmethb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Carbtetb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Chlformb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Clbenzb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Clethanb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Clmthanb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Crbndisb	8260	5	BDL	UG/L	06/20/96	HLS

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-->> METHOD BLANK DATA continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23421	cs13dcpb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Acrylonb	8260	100	BDL	UG/L	06/20/96	HLS
23421	Benzeneb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Brdiclmb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Brformb	8260	5	BDL	UG/L	06/20/96	HLS
23421	2Hexanob	8260	50	BDL	UG/L	06/20/96	HLS
23421	4Me2Penb	8260	50	BDL	UG/L	06/20/96	HLS
23421	Acetoneb	8260	50	BDL	UG/L	06/20/96	HLS
23421	Acrolenb	8260	100	BDL	UG/L	06/20/96	HLS
23421	14dc2beb	8260	10	BDL	UG/L	06/20/96	HLS
23421	2Butanob	8260	50	BDL	UG/L	06/20/96	HLS
23421	2Ceve	8260	10	BDL	UG/L	06/20/96	HLS
23421	12DCAb	8260	5	BDL	UG/L	06/20/96	HLS
23421	12Dcprob	8260	5	BDL	UG/L	06/20/96	HLS
23421	11DCEb	8260	5	BDL	UG/L	06/20/96	HLS
23421	123Tclpb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	111TCAb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	1122TCAb	8260	5	BDL	UG/L	06/20/96	HLS
23421	112TCAb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	11DCAb	8260	5	BDL	UG/L	06/20/96	HLS
23570	phenolb	8270	10	BDL	UG/L	07/03/96	SCL
23570	2clphenb	8270	10	BDL	UG/L	07/03/96	SCL
23570	14dcbsb	8270	10	BDL	UG/L	07/03/96	SCL
23570	PCPb	8270	50	BDL	UG/L	07/03/96	SCL
23570	Pyreneb	8270	10	BDL	UG/L	07/03/96	SCL
23570	4nitpheb	8270	50	BDL	UG/L	07/03/96	SCL
23570	124Tcbsb	8270	10	BDL	UG/L	07/03/96	SCL
23570	4cl3mepb	8270	10	BDL	UG/L	07/03/96	SCL
23570	Acenaphb	8270	10	BDL	UG/L	07/03/96	SCL
23570	24Dintob	8270	10	BDL	UG/L	07/03/96	SCL

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-->> ANALYST'S QC COMMENTS <<---
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QC Number: 22989

Ag spike recoveries low due to sample matrix interference

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****
-->> A N A L Y S T ' S QC C O M M E N T S continued <<---
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C Number: 23015

Tl, Cu, Ni and Zn recoveries are for the dissolved sample 96-6157.

C Number: 23183

4-methyl-2-pentanone and acrylonitrile MS, MSD and LCS results are above the upper acceptance limits for this project. The results are within the laboratory's historical recovery limits.

Iodomethane MS/MSD RPD is over the project precision limits.

C Number: 23209

MS/MSD reference QC#23183

C Number: 23415

Vinyl acetate LCS and MS results are below the lower acceptance limits. The continueing calib. check sample showed 135% recovery. The MSD recovery was acceptable at 58% recovery. Ethylmethacrylate recoveries were acceptable, but precision was out of control. Carbon disulfide, iodomethane, acrolein, dichlorodifluormethane, acrylonitrile, 1,2,3-trichloropropane and 2-chloroethylvinyl ether exhibit low MS/MSD recoveries. 2-chloroethylvinyl ether is low due to acid preservation.

C Number: 23416

Reference precision and QCRS from 23415

C Number: 23421

LCS recoveries for 4-methyl-2-pentanone and acrylonitrile are higher than the project acceptance limits. The results are within the laboratory's historical recovery limits. 1,2,3-trichloropropane MS recovery is higher than the project limit. MSI was within the limits. Acrolein MS/MSD recoveries are low and precision is also out of the limit. Ethylmethacrylate and vinyl acetate RPD results are also out of the precision limits.

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

port Date: 07/24/96 SURROGATE QC REPORT BY PROJECT NUMBER Page: 1

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C-of-C Number: C14722

****
->> SURROGATE ACCURACY DATA <<---
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Number 23183 Procedure 8260

mple ID Blank

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
bromofluoromethane (SS)	8260	23183	50.	41.92	84	115	85	*	06/12/96	HLS
Bromofluorobenzene (SS)	8260	23183	50.	43.92	88	115	85		06/12/96	HLS
oluene-d8 (SS)	8260	23183	50.	43.56	87	115	85		06/12/96	HLS

mple ID Duplicate

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Bromofluorobenzene (SS)	8260	23183	50.	46.21	92	115	85		06/12/96	HLS
oluene-d8 (SS)	8260	23183	50.	50.46	101	115	85		06/12/96	HLS
bromofluoromethane (SS)	8260	23183	50.	44.03	88	115	85		06/12/96	HLS

mple ID QCRS/LCS

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
bromofluoromethane (SS)	8260	23183	50.	45.1	90	115	85		06/13/96	HLS
Bromofluorobenzene (SS)	8260	23183	50.	46.19	92	115	85		06/13/96	HLS
oluene-d8 (SS)	8260	23183	50.	49.45	99	115	85		06/13/96	HLS

mple ID Spike

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23183	50.	51.77	104	115	85		06/12/96	HLS

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-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23183	50.	44.18	88	115	85		06/12/96	HLS
-Bromofluorobenzene (SS)	8260	23183	50.	46.55	93	115	85		06/12/96	HLS

ample ID 96 0006157

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23183	50.	45.517	91	115	85		06/12/96	HLS
-Bromofluorobenzene (SS)	8260	23183	50.	44.22	88	115	85		06/12/96	HLS
ibromofluoromethane (SS)	8260	23183	50.	43.639	87	115	85		06/12/96	HLS

ample ID 96 0006161

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23183	50.	44.248	88	115	85		06/12/96	HLS
ibromofluoromethane (SS)	8260	23183	50.	44.527	89	115	85		06/12/96	HLS
oluene-d8 (SS)	8260	23183	50.	44.181	88	115	85		06/12/96	HLS

ample ID 96 0006163

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23183	50.	45.983	92	115	85		06/12/96	HLS
-Bromofluorobenzene (SS)	8260	23183	50.	46.407	93	115	85		06/12/96	HLS
oluene-d8 (SS)	8260	23183	50.	45.05	90	115	85		06/12/96	HLS

ample ID 96 0006164

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23183	50.	47.103	94	115	85		06/12/96	HLS

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->> SURROGATE ACCURACY DATA continued <<---
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alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23183	50.	44.098	88	115	85		06/12/96	HLS
Bromofluorobenzene (SS)	8260	23183	50.	47.571	95	115	85		06/12/96	HLS

mple ID 96 0006240

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Bromofluorobenzene (SS)	8260	23183	50.	47.468	95	115	85		06/13/96	HLS
oluene-d8 (SS)	8260	23183	50.	44.603	89	115	85		06/13/96	HLS
bromofluoromethane (SS)	8260	23183	50.	45.751	92	115	85		06/13/96	HLS

Number 23209 Procedure 8260

mple ID Blank

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
bromofluoromethane (SS)	8260	23209	50.	51.66	103	115	85		06/11/96	HLS
oluene-d8 (SS)	8260	23209	50.	43.66	87	115	85		06/11/96	HLS
Bromofluorobenzene (SS)	8260	23209	50.	43.64	87	115	85		06/11/96	HLS

mple ID QCRS/LCS

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
bromofluoromethane (SS)	8260	23209	50.	46.303	93	115	85		06/12/96	HLS
oluene-d8 (SS)	8260	23209	50.	46.015	92	115	85		06/12/96	HLS
Bromofluorobenzene (SS)	8260	23209	50.	50.422	101	115	85		06/12/96	HLS

000124

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->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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ample ID 96 0006162

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23209	50.	45.97	92	115	85		06/11/96	HLS
-Bromofluorobenzene (SS)	8260	23209	50.	46.073	92	115	85		06/11/96	HLS
ibromofluoromethane (SS)	8260	23209	50.	54.94	110	115	85		06/11/96	HLS

ample ID 96 0006165

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23209	50.	54.288	110	115	85		06/11/96	HLS
oluene-d8 (SS)	8260	23209	50.	44.128	88	115	85		06/11/96	HLS
-Bromofluorobenzene (SS)	8260	23209	50.	45.041	90	115	85		06/11/96	HLS

C Number 23415 Procedure 8260

ample ID Blank

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23415	50.	46.72	93	115	85		06/18/96	HLS
ibromofluoromethane (SS)	8260	23415	50.	53.17	106	115	85		06/18/96	HLS
-Bromofluorobenzene (SS)	8260	23415	50.	46.89	94	115	85		06/18/96	HLS

ample ID Duplicate

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23415	50.	49.57	99	115	85		06/18/96	HLS

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Project Number: 9606096
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->> SURROGATE ACCURACY DATA continued <<---

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
bromofluoromethane (SS)	8260	23415	50.	51.06	102	115	85		06/18/96	HLS
Bromofluorobenzene (SS)	8260	23415	50.	45.88	92	115	85		06/18/96	HLS

mple ID QCRS/LCS

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
luene-d8 (SS)	8260	23415	50.	50.25	101	115	85		06/18/96	HLS
bromofluoromethane (SS)	8260	23415	50.	46.61	93	115	85		06/18/96	HLS
Bromofluorobenzene (SS)	8260	23415	50.	44.72	89	115	85		06/18/96	HLS

mple ID Spike

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
luene-d8 (SS)	8260	23415	50.	49.41	99	115	85		06/18/96	HLS
bromofluoromethane (SS)	8260	23415	50.	49.43	99	115	85		06/18/96	HLS
Bromofluorobenzene (SS)	8260	23415	50.	45.1	90	115	85		06/18/96	HLS

mple ID 96 0006245

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
luene-d8 (SS)	8260	23415	50.	50.449	100	115	85		06/18/96	HLS
bromofluoromethane (SS)	8260	23415	50.	57.502	115	115	85		06/18/96	HLS
Bromofluorobenzene (SS)	8260	23415	50.	48.804	98	115	85		06/18/96	HLS

C Number 23416 Procedure 8260

0001126

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Project Number: 9606096
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-->> SURROGATE ACCURACY DATA continued <<---
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ample ID Blank

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23416	50.	48.33	97	115	85		06/19/96	HLS
-Bromofluorobenzene (SS)	8260	23416	50.	45.36	91	115	85		06/19/96	HLS
oluene-d8 (SS)	8260	23416	50.	44.8	90	115	85		06/19/96	HLS

ample ID Spike

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23416	50.	46.72	93	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23416	50.	49.18	98	115	85		06/20/96	HLS
ibromofluoromethane (SS)	8260	23416	50.	48.86	98	115	85		06/20/96	HLS

ample ID 96 0006244

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23416	50.	44.377	89	115	85		06/19/96	HLS
-Bromofluorobenzene (SS)	8260	23416	50.	46.322	93	115	85		06/19/96	HLS
ibromofluoromethane (SS)	8260	23416	50.	51.513	100	115	85		06/19/96	HLS

ample ID 96 0006246

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23416	50.	46.009	92	115	85		06/19/96	HLS
ibromofluoromethane (SS)	8260	23416	50.	48.09	96	115	85		06/19/96	HLS
oluene-d8 (SS)	8260	23416	50.	43.535	87	115	85		06/19/96	HLS

00127

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Project Number: 9606096
C-of-C Number: C14722

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->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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ample ID 96 0006336

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23416	50.	45.019	90	115	85		06/19/96	HLS
oluene-d8 (SS)	8260	23416	50.	46.819	94	115	85		06/19/96	HLS
ibromofluoromethane (SS)	8260	23416	50.	53.632	110	115	85		06/19/96	HLS

ample ID 96 0006344

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23416	50.	47.722	95	115	85		06/19/96	HLS
oluene-d8 (SS)	8260	23416	50.	46.922	94	115	85		06/19/96	HLS
ibromofluoromethane (SS)	8260	23416	50.	51.181	100	115	85		06/19/96	HLS

ample ID 96 0006345

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23416	50.	50.294	100	115	85		06/20/96	HLS
ibromofluoromethane (SS)	8260	23416	50.	56.355	110	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23416	50.	46.241	92	115	85		06/20/96	HLS

C Number 23421 Procedure 8260

ample ID Blank

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23421	50.	46.13	92	115	85		06/20/96	HLS

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-->> SURROGATE ACCURACY DATA continued <<---
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nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	46.39	93	115	85		06/20/96	HLS
ibromofluoromethane (SS)	8260	23421	50.	49.03	98	115	85		06/20/96	HLS

ample ID Duplicate

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	49.1	98	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	48.16	96	115	85		06/20/96	HLS
ibromofluoromethane (SS)	8260	23421	50.	50.25	101	115	85		06/20/96	HLS

ample ID QCRS/LCS

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	54.69	109	115	85		06/21/96	HLS
ibromofluoromethane (SS)	8260	23421	50.	48.45	97	115	85		06/21/96	HLS
oluene-d8 (SS)	8260	23421	50.	49.73	99	115	85		06/21/96	HLS

ample ID Spike

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23421	50.	52.12	104	115	85		06/20/96	HLS
-Bromofluorobenzene (SS)	8260	23421	50.	47.19	94	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	49.31	99	115	85		06/20/96	HLS

ample ID 96 0006247

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	45.29	90	115	85		06/20/96	HLS

000129

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Project Number: 9606096
C-of-C Number: C14722

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->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23421	50.	47.146	94	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	42.57	85	115	85		06/20/96	HLS

ample ID 96 0006346

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23421	50.	49.739	99	115	85		06/20/96	HLS
-Bromofluorobenzene (SS)	8260	23421	50.	46.598	93	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	45.453	91	115	85		06/20/96	HLS

ample ID 96 0006347

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23421	50.	47.418	95	115	85		06/20/96	HLS
-Bromofluorobenzene (SS)	8260	23421	50.	46.045	92	115	85		06/20/96	HLS
ibromofluoromethane (SS)	8260	23421	50.	49.705	99	115	85		06/20/96	HLS

ample ID 96 0006348

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23421	50.	51.694	100	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	44.655	89	115	85		06/20/96	HLS
-Bromofluorobenzene (SS)	8260	23421	50.	45.578	91	115	85		06/20/96	HLS

ample ID 96 0006349

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	47.158	94	115	85		06/20/96	HLS

000130

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Project Number: 9606096
C-of-C Number: C14722

****
->> SURROGATE ACCURACY DATA continued <<---
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nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
.bromofluoromethane (SS)	8260	23421	50.	50.792	100	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	46.004	92	115	85		06/20/96	HLS

ample ID 96 0006493

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	46.849	94	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	43.481	87	115	85		06/20/96	HLS
.bromofluoromethane (SS)	8260	23421	50.	49.19	98	115	85		06/20/96	HLS

ample ID 96 0006504

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	44.566	89	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	45.965	92	115	85		06/20/96	HLS
.bromofluoromethane (SS)	8260	23421	50.	51.645	100	115	85		06/20/96	HLS

ample ID 96 0006505

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	45.42	91	115	85		06/20/96	HLS
.bromofluoromethane (SS)	8260	23421	50.	50.818	100	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	46.753	94	115	85		06/20/96	HLS

C Number 23570 Procedure 8270

000131

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Project Number: 9606096
C-of-C Number: C14722

****
->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
****

mple ID Blank

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
trobenzene-d5 (SS)	8270	23570	100.	62.31	62	114	35		07/03/96	SCL
Fluorophenol (SS)	8270	23570	150.	58.3	39	100	21		07/03/96	SCL
Flurobiphenyl (SS)	8270	23570	100.	57.18	57	116	43		07/03/96	SCL
4,6-Tribromophenol (SS)	8270	23570	150.	57.	38	123	10		07/03/96	SCL
enol-d5 (SS)	8270	23570	150.	79.5	53	94	10		07/03/96	SCL
rphenyl-d14 (SS)	8270	23570	100.	59.37	59	141	33		07/03/96	SCL

mple ID Duplicate

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Flurobiphenyl (SS)	8270	23570	100.	73.5	74	116	43		07/03/96	SCL
enol-d5 (SS)	8270	23570	150.	77.1	51	94	10		07/03/96	SCL
trobenzene-d5 (SS)	8270	23570	100.	87.49	87	114	35		07/03/96	SCL
Fluorophenol (SS)	8270	23570	150.	77.1	51	100	21		07/03/96	SCL
rphenyl-d14 (SS)	8270	23570	100.	82.5	83	141	33		07/03/96	SCL
4,6-Tribromophenol (SS)	8270	23570	150.	122.6	82	123	10		07/03/96	SCL

mple ID QCRS/LCS

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
rphenyl-d14 (SS)	8270	23570	100.	58.4	58	141	33		07/03/96	SCL
enol-d5 (SS)	8270	23570	150.	88.43	59	94	10		07/03/96	SCL
Flurobiphenyl (SS)	8270	23570	100.	54.14	54	116	43		07/03/96	SCL
4,6-Tribromophenol (SS)	8270	23570	150.	70.6	47	123	10		07/03/96	SCL
Fluorophenol (SS)	8270	23570	150.	75.18	50	100	21		07/03/96	SCL
trobenzene-d5 (SS)	8270	23570	100.	61.07	61	114	35		07/03/96	SCL

0001132

eport Date: 07/24/96 SURROGATE QC REPORT BY PROJECT NUMBER Page: 12

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Project Number: 9606096
C-of-C Number: C14722

****
->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
****

mple ID Spike

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Fluorophenol (SS)	8270	23570	150.	87.93	59	100	21		07/03/96	SCL
rphenyl-d14 (SS)	8270	23570	100.	89.22	89	141	33		07/03/96	SCL
enol-d5 (SS)	8270	23570	150.	60.2	40	94	10		07/03/96	SCL
trobenzene-d5 (SS)	8270	23570	100.	101.34	101	114	35		07/03/96	SCL
Flurobiphenyl (SS)	8270	23570	100.	79.66	80	116	43		07/03/96	SCL
4,6-Tribromophenol (SS)	8270	23570	150.	141.63	94	123	10		07/03/96	SCL

mple ID 96 0006157

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23570	150.	139.5	93	123	10		07/02/96	SCL
trobenzene-d5 (SS)	8270	23570	100.	97.	97	114	35		07/02/96	SCL
Fluorophenol (SS)	8270	23570	150.	85.5	57	100	21		07/02/96	SCL
Flurobiphenyl (SS)	8270	23570	100.	82.	82	116	43		07/02/96	SCL
enol-d5 (SS)	8270	23570	150.	73.5	49	94	10		07/02/96	SCL
rphenyl-d14 (SS)	8270	23570	100.	91.	91	141	33		07/02/96	SCL

mple ID 96 0006161

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
rphenyl-d14 (SS)	8270	23570	100.	95.	95	141	33		07/03/96	SCL
enol-d5 (SS)	8270	23570	150.	64.5	43	94	10		07/03/96	SCL
Fluorophenol (SS)	8270	23570	150.	64.5	43	100	21		07/03/96	SCL
Flurobiphenyl (SS)	8270	23570	100.	81.	81	116	43		07/03/96	SCL
4,6-Tribromophenol (SS)	8270	23570	150.	105.	70	123	10		07/03/96	SCL
trobenzene-d5 (SS)	8270	23570	100.	100.	100	114	35		07/03/96	SCL

00013

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Project Number: 9606096
C-of-C Number: C14722

****
->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
****

ample ID 96 0006163

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Flurobiphenyl (SS)	8270	23570	100.	81.	81	116	43		07/03/96	SCL
itrobenzene-d5 (SS)	8270	23570	100.	102.	100	114	35		07/03/96	SCL
-Fluorophenol (SS)	8270	23570	150.	75.	50	100	21		07/03/96	SCL
erphenyl-d14 (SS)	8270	23570	100.	94.	94	141	33		07/03/96	SCL
,4,6-Tribromophenol (SS)	8270	23570	150.	133.5	89	123	10		07/03/96	SCL
henol-d5 (SS)	8270	23570	150.	67.5	45	94	10		07/03/96	SCL

ample ID 96 0006164

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
erphenyl-d14 (SS)	8270	23570	100.	65.	65	141	33		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23570	100.	65.	65	114	35		07/08/96	SCL
henol-d5 (SS)	8270	23570	150.	117.	78	94	10		07/08/96	SCL
-Fluorophenol (SS)	8270	23570	150.	93.	62	100	21		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23570	100.	52.	52	116	43		07/08/96	SCL
,4,6-Tribromophenol (SS)	8270	23570	150.	93.	62	123	10		07/08/96	SCL

ample ID 96 0006244

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
,4,6-Tribromophenol (SS)	8270	23570	150.	153.	100	123	10		07/03/96	SCL
-Flurobiphenyl (SS)	8270	23570	100.	81.	81	116	43		07/03/96	SCL
-Fluorophenol (SS)	8270	23570	150.	76.5	51	100	21		07/03/96	SCL
itrobenzene-d5 (SS)	8270	23570	100.	95.	95	114	35		07/03/96	SCL
henol-d5 (SS)	8270	23570	150.	67.5	45	94	10		07/03/96	SCL
erphenyl-d14 (SS)	8270	23570	100.	91.	91	141	33		07/03/96	SCL

0001134

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Project Number: 9606096
C-of-C Number: C14722

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-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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ample ID 96 0006246

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
,4,6-Tribromophenol (SS)	8270	23570	150.	97.5	65	123	10		07/03/96	SCL
-Flurobiphenyl (SS)	8270	23570	100.	76.	76	116	43		07/03/96	SCL
-Fluorophenol (SS)	8270	23570	150.	49.5	33	100	21		07/03/96	SCL
itrobenzene-d5 (SS)	8270	23570	100.	90.	90	114	35		07/03/96	SCL
henol-d5 (SS)	8270	23570	150.	55.5	37	94	10		07/03/96	SCL
erphenyl-d14 (SS)	8270	23570	100.	86.	86	141	33		07/03/96	SCL

ample ID 96 0006247

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
,4,6-Tribromophenol (SS)	8270	23570	150.	93.	62	123	10		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23570	100.	48.	48	116	43		07/08/96	SCL
-Fluorophenol (SS)	8270	23570	150.	84.	56	100	21		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23570	100.	63.	63	114	35		07/08/96	SCL
henol-d5 (SS)	8270	23570	150.	112.5	75	94	10		07/08/96	SCL
erphenyl-d14 (SS)	8270	23570	100.	70.	70	141	33		07/08/96	SCL

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-->> A N A L Y S T ' S QC C O M M E N T S <<---
****

C Number: 22989

Ag spike recoveries low due to sample matrix interference

000135

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Project Number: 9606096
C-of-C Number: C14722

****
-->> A N A L Y S T ' S QC C O M M E N T S continued <<---
****

C Number: 23015

Tl, Cu, Ni and Zn recoveries are for the dissolved sample 96-6157.

C Number: 23183

4-methyl-2-pentanone and acrylonitrile MS, MSD and LCS results are above the upper acceptance limits for this project. The results are within the laboratory's historical recovery limits.

Iodomethane MS/MSD RPD is over the project precision limits.

C Number: 23209

MS/MSD reference QC#23183

C Number: 23415

Vinyl acetate LCS and MS results are below the lower acceptance limits. The continueing calib. check sample showed 135% recovery. The MSD recovery was acceptable at 58% recovery. Ethylmethacrylate recoveries were acceptable, but precision was out of control. Carbon disulfide, iodomethane, acrolein, dichlorodifluormethane, acrylonitrile, 1,2,3-trichloropropane and 2-chloroethylvinyl ether exhibit low MS/MSD recoveries. 2-chloroethylvinyl ether is low due to acid preservation.

C Number: 23416

Reference precision and QCRS from 23415

C Number: 23421

LCS recoveries for 4-methyl-2-pentanone and acrylonitrile are higher than the project acceptance limits. The results are within the laboratory's historical recovery limits. 1,2,3-trichloropropane MS recovery is higher than the project limit. MSI was within the limits. Acrolein MS/MSD recoveries are low and precision is also out of the limit. Ethylmethacrylate and vinyl acetate RPD results are also out of the precision limits.

0001136

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/18/96 SAMPLE CUSTODY REPORT Page: 1

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Chain of Custody Number: C14722

Lab ID : 96 0006157 Collected: 06/05/96 14:00 Received: 06/06/96 10:30

Cust Proj No: TF0320.014
Smpl Desc: 960605-CO-02B-PW0001, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3015	06/10/96	10:56	dsb	179	days	4 Days 20 Hr 55 Mn	N/A
3510BNA	06/11/96	16:00	kbh	7	days	6 Days 1 Hr 59 Mn	N/A
7470 Prep	06/12/96	09:30	dsb	27	days	6 Days 19 Hr 30 Mn	N/A
9010 PrepS	06/11/96	11:00	ejp	14	days	5 Days 21 Hr 0 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Se-GFdis/270.2	06/19/96	19:04	jmn	180	days	14 Days 5 Hr 3 Mn	N/A
Zn-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 22 Hr 20 Mn	N/A
Sb-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A
Pb-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A
Pb-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A
Ni-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 22 Hr 20 Mn	N/A
Ni-disMS/6020	06/13/96	12:20	jmn	180	days	7 Days 22 Hr 20 Mn	N/A
Tl-disMS/6020	06/13/96	12:20	jmn	180	days	7 Days 22 Hr 20 Mn	N/A
Tl-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 22 Hr 20 Mn	N/A
Zn-disMS/6020	06/13/96	12:20	jmn	180	days	7 Days 22 Hr 20 Mn	N/A
Sb-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A
Cd-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A
Cd-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A
Be-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 22 Hr 20 Mn	N/A
Ag-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A
Ag-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A
As-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A
As-MS/6020	06/12/96	14:01	sfl	180	days	7 Days 0 Hr 0 Mn	N/A
Ba-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A
Ba-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A
Cu-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 22 Hr 20 Mn	N/A
Cu-disMS/6020	06/13/96	12:20	jmn	180	days	7 Days 22 Hr 20 Mn	N/A
Be-disMS/6020	06/13/96	12:20	jmn	180	days	7 Days 22 Hr 20 Mn	N/A
Cr-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A
Cr-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 0 Hr 0 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

000137

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/18/96 SAMPLE CUSTODY REPORT Page: 2

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Chain of Custody Number: C14722

Hg-dis/7470	06/13/96 13:02 dsb	28 days	7 Days 23 Hr 1 Mn	N/A
Hg/7470	06/13/96 12:13 dsb	28 days	7 Days 22 Hr 12 Mn	N/A
Se-GF/7740	06/19/96 19:04 jmn	180 days	14 Days 5 Hr 3 Mn	N/A
8260	06/12/96 19:15 HLS	14 days	7 Days 5 Hr 15 Mn	N/A
8270	07/02/96 23:34 SCL	40 days	27 Days 9 Hr 33 Mn	N/A
CN-T/9012	06/11/96 18:15 ejp	14 days	6 Days 4 Hr 14 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

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Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/18/96 SAMPLE CUSTODY REPORT Page: 3

Kathy Thalman
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Chain of Custody Number: C14722

Lab ID : 96 0006161 Collected: 06/05/96 00:00 Received: 06/06/96 10:30

Cust Proj No: TF0320.014
Smpl Desc: 960605-CO-02B-PW9001, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3015	06/10/96	10:56	dsb	179	days	5 Days 10 Hr 56 Mn	N/A
3510BNA	06/11/96	16:00	kbh	7	days	6 Days 16 Hr 0 Mn	N/A
7470 Prep	06/12/96	09:30	dsb	27	days	7 Days 9 Hr 29 Mn	N/A
9010 PrepS	06/11/96	15:00	ejp	14	days	6 Days 15 Hr 0 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Se-GFdis/270.2	06/19/96	19:04	jmn	180	days	14 Days 19 Hr 3 Mn	N/A
Zn-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 12 Hr 20 Mn	N/A
Sb-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
Pb-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
Pb-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
Ni-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 12 Hr 20 Mn	N/A
Ni-disMS/6020	06/13/96	12:20	jmn	180	days	8 Days 12 Hr 20 Mn	N/A
Tl-disMS/6020	06/13/96	12:20	jmn	180	days	8 Days 12 Hr 20 Mn	N/A
Tl-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 12 Hr 20 Mn	N/A
Zn-disMS/6020	06/13/96	12:20	jmn	180	days	8 Days 12 Hr 20 Mn	N/A
Sb-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
Cd-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
Cd-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
Be-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 12 Hr 20 Mn	N/A
Ag-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
Ag-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
As-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
As-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
Ba-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
Ba-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
Cu-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 12 Hr 20 Mn	N/A
Cu-disMS/6020	06/13/96	12:20	jmn	180	days	8 Days 12 Hr 20 Mn	N/A
Be-disMS/6020	06/13/96	12:20	jmn	180	days	8 Days 12 Hr 20 Mn	N/A
Cr-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A
Cr-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 14 Hr 1 Mn	N/A

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Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/18/96 SAMPLE CUSTODY REPORT Page: 4

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Chain of Custody Number: C14722

Hg-dis/7470	06/13/96 13:02 dsb	28 days	8 Days 13 Hr 2 Mn	N/A
Hg/7470	06/13/96 12:13 dsb	28 days	8 Days 12 Hr 13 Mn	N/A
Se-GF/7740	06/19/96 19:04 jmn	180 days	14 Days 19 Hr 3 Mn	N/A
8260	06/12/96 21:54 HLS	14 days	7 Days 21 Hr 54 Mn	N/A
8270	07/03/96 01:25 SCL	40 days	28 Days 1 Hr 25 Mn	N/A
CN-T/9012	06/13/96 13:40 ejp	14 days	8 Days 13 Hr 39 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/18/96 SAMPLE CUSTODY REPORT Page: 5

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14722

Lab ID : 96 0006162 Collected: 05/31/96 10:40 Received: 06/06/96 10:30

Cust Proj No: TF0320.014
Smpl Desc: Trip Blank, Birmingham, AL

Analysis Procedures	Det Date Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
8260	06/11/96 23:06	HLS	14	days	11 Days 12 Hr 26 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/18/96 SAMPLE CUSTODY REPORT Page: 6

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14722

Lab ID : 96 0006163 Collected: 06/05/96 11:15 Received: 06/06/96 10:30

Cust Proj No: TF0320.014
Smpl Desc: 960605-CO-02B-FB0001, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3015	06/10/96	10:56	dsb	179	days	4 Days 23 Hr 41 Mn	N/A
3510BNA	06/11/96	16:00	kbh	7	days	6 Days 4 Hr 45 Mn	N/A
7470 Prep	06/12/96	09:30	dsb	27	days	6 Days 22 Hr 14 Mn	N/A
9010 PrepS	06/11/96	15:00	ejp	14	days	6 Days 3 Hr 45 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Cd-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 46 Mn	N/A
Cr-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 46 Mn	N/A
Ag-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 46 Mn	N/A
As-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 46 Mn	N/A
Ba-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 46 Mn	N/A
Be-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 1 Hr 5 Mn	N/A
Cu-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 1 Hr 5 Mn	N/A
Zn-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 1 Hr 5 Mn	N/A
Sb-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 46 Mn	N/A
Tl-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 1 Hr 5 Mn	N/A
Pb-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 46 Mn	N/A
Ni-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 1 Hr 5 Mn	N/A
Hg/7470	06/13/96	12:13	dsb	28	days	8 Days 0 Hr 58 Mn	N/A
Se-GF/7740	06/19/96	19:04	jmn	180	days	14 Days 7 Hr 48 Mn	N/A
8260	06/12/96	22:46	HLS	14	days	7 Days 11 Hr 30 Mn	N/A
8270	07/03/96	02:03	SCL	40	days	27 Days 14 Hr 48 Mn	N/A
CN-T/9012	06/13/96	13:40	ejp	14	days	8 Days 2 Hr 24 Mn	N/A

Respectfully Submitted
Center For Applied Eng?, Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/18/96 SAMPLE CUSTODY REPORT Page: 7

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14722

Lab ID : 96 0006164 Collected: 06/05/96 11:30 Received: 06/06/96 10:30

Cust Proj No: TF0320.014
Smpl Desc: 960605-CO-02B-PWEB01, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3015	06/10/96	10:56	dsb	179	days	4 Days 23 Hr 26 Mn	N/A
3510BNA	06/11/96	20:25	srs	7	days	6 Days 8 Hr 55 Mn	N/A
7470 Prep	06/12/96	09:30	dsb	27	days	6 Days 22 Hr 0 Mn	N/A
9010 PrepS	06/11/96	15:00	ejp	14	days	6 Days 3 Hr 29 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Se-GFdis/270.2	06/19/96	19:04	jmn	180	days	14 Days 7 Hr 34 Mn	N/A
Zn-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 0 Hr 49 Mn	N/A
Sb-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
Pb-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
Pb-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
Ni-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 0 Hr 49 Mn	N/A
Ni-disMS/6020	06/13/96	12:20	jmn	180	days	8 Days 0 Hr 49 Mn	N/A
Tl-disMS/6020	06/13/96	12:20	jmn	180	days	8 Days 0 Hr 49 Mn	N/A
Tl-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 0 Hr 49 Mn	N/A
Zn-disMS/6020	06/13/96	12:20	jmn	180	days	8 Days 0 Hr 49 Mn	N/A
Sb-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
Cd-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
Cd-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
Be-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 0 Hr 49 Mn	N/A
Ag-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
Ag-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
As-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
As-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
Ba-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
Ba-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
Cu-MS/6020	06/13/96	12:20	jmn	180	days	8 Days 0 Hr 49 Mn	N/A
Cu-disMS/6020	06/13/96	12:20	jmn	180	days	8 Days 0 Hr 49 Mn	N/A
Be-disMS/6020	06/13/96	12:20	jmn	180	days	8 Days 0 Hr 49 Mn	N/A
Cr-MS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A
Cr-disMS/6020	06/12/96	14:01	jmn	180	days	7 Days 2 Hr 30 Mn	N/A

Respectfully Submitted
Center For Applied Eng , Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/18/96 SAMPLE CUSTODY REPORT Page: 8

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14722

Hg-dis/7470	06/13/96 13:02 dsb	28 days	8 Days 1 Hr 32 Mn	N/A
Hg/7470	06/13/96 12:13 dsb	28 days	8 Days 0 Hr 42 Mn	N/A
Se-GF/7740	06/19/96 19:04 jmn	180 days	14 Days 7 Hr 34 Mn	N/A
8260	06/12/96 23:38 HLS	14 days	7 Days 12 Hr 8 Mn	N/A
8270	07/08/96 20:54 SCL	40 days	33 Days 9 Hr 24 Mn	N/A
CN-T/9012	06/13/96 13:40 ejp	14 days	8 Days 2 Hr 10 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/18/96 SAMPLE CUSTODY REPORT Page: 9

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14722

Lab ID : 96 0006165 Collected: 05/31/96 10:44 Received: 06/06/96 10:30

Cust Proj No: TF0320.014
Smpl Desc: Trip Blank, Birmingham, AL

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
8260	06/11/96	23:57	HLS	14	days	11 Days 13 Hr 12 Mn	N/A

Respectfully Submitted
Center For Applied Engg., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

000145

ANALYSIS REPORT

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/23/96 SAMPLE CUSTODY REPORT Page: 1

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: c14749

Lab ID : 96 0006240 Collected: 06/07/96 00:00 Received: 06/08/96 11:30

Cust Proj No: TF0320.014
Smpl Desc: 960607-CO-12-TB0004, Birmingham, AL

Analysis Procedures	Det Date Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
8260	06/13/96 00:30	HLS	14	days	6 Days 0 Hr 29 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

000146

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/23/96 SAMPLE CUSTODY REPORT Page: 5

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: c14749

Lab ID : 96 0006244 Collected: 06/07/96 14:15 Received: 06/08/96 11:30

Cust Proj No: TF0320.014
Smpl Desc: 960607-CO-02A-PW0001, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3015	06/10/96	11:34	dsb	179	days	2 Days 21 Hr 18 Mn	N/A
3510BNA	06/11/96	16:00	kbh	7	days	4 Days 1 Hr 45 Mn	N/A
7470 Prep	06/12/96	09:30	dsb	27	days	4 Days 19 Hr 14 Mn	N/A
9010 PrepS	06/13/96	10:00	ejp	14	days	5 Days 19 Hr 45 Mn	N/A

lysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Se-GFdis/270.2	06/19/96	19:04	jmn	180	days	12 Days 4 Hr 48 Mn	N/A
Zn-MS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Sb-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Pb-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Pb-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Ni-MS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Ni-disMS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Tl-disMS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Tl-MS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Zn-disMS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Sb-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Cd-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Cd-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Be-MS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Ag-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Ag-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
As-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
As-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Ba-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Ba-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Cu-MS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Cu-disMS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Be-disMS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Cr-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Cr-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/18/96 SAMPLE CUSTODY REPORT Page: 1

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14750

Lab ID : 96 0006245 Collected: 06/06/96 00:00 Received: 06/08/96 11:30

Cust Proj No: TF0320.014
Smpl Desc: 960606-CO-12-TB0003, Birmingham, AL

Analysis Procedures	Det Date Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
8260	06/18/96 20:50	HLS	14	days	12 Days 20 Hr 50 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

000148

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/18/96 SAMPLE CUSTODY REPORT Page: 2

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14750

Lab ID : 96 0006246 Collected: 06/06/96 08:00 Received: 06/08/96 11:30

Cust Proj No: TF0320.014
Smpl Desc: 960606-CO-12-FB0002, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3015	06/10/96	11:34	dsb	179	days	4 Days 3 Hr 33 Mn	N/A
3510BNA	06/11/96	16:00	kbh	7	days	5 Days 7 Hr 59 Mn	N/A
7470 Prep	06/12/96	09:30	dsb	27	days	6 Days 1 Hr 30 Mn	N/A
9010 PrepS	06/13/96	10:00	ejp	14	days	7 Days 1 Hr 59 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Cu-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 6 Hr 0 Mn	N/A
Cr-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 6 Hr 0 Mn	N/A
Ag-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 6 Hr 0 Mn	N/A
As-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 6 Hr 0 Mn	N/A
Ba-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 6 Hr 0 Mn	N/A
Be-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 4 Hr 20 Mn	N/A
Cu-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 4 Hr 20 Mn	N/A
Zn-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 4 Hr 20 Mn	N/A
Sb-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 6 Hr 0 Mn	N/A
Tl-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 4 Hr 20 Mn	N/A
Pb-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 6 Hr 0 Mn	N/A
Ni-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 4 Hr 20 Mn	N/A
Hg/7470	06/13/96	12:13	dsb	28	days	7 Days 4 Hr 12 Mn	N/A
Se-GF/7740	06/19/96	19:04	jmn	180	days	13 Days 11 Hr 3 Mn	N/A
8260	06/19/96	20:09	HLS	14	days	13 Days 12 Hr 9 Mn	N/A
8270	07/03/96	02:40	SCL	40	days	26 Days 18 Hr 40 Mn	N/A
CN-T/9012	06/17/96	10:30	ejp	14	days	11 Days 2 Hr 30 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/18/96 SAMPLE CUSTODY REPORT Page: 3

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14750

Lab ID : 96 0006247 Collected: 06/06/96 08:15 Received: 06/08/96 11:30

Cust Proj No: TF0320.014
Smpl Desc: 960606-CO-12-SLEB02, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3015	06/10/96	11:34	dsb	179	days	4 Days 3 Hr 18 Mn	N/A
3510BNA	06/11/96	20:25	srs	7	days	5 Days 12 Hr 9 Mn	N/A
7470 Prep	06/12/96	09:30	dsb	27	days	6 Days 1 Hr 14 Mn	N/A
9010 PrepS	06/13/96	10:00	ejp	14	days	7 Days 1 Hr 45 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Cd-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 5 Hr 46 Mn	N/A
Cr-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 5 Hr 46 Mn	N/A
Ag-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 5 Hr 46 Mn	N/A
As-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 5 Hr 46 Mn	N/A
Ba-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 5 Hr 46 Mn	N/A
Be-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 4 Hr 5 Mn	N/A
Cu-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 4 Hr 5 Mn	N/A
Zn-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 4 Hr 5 Mn	N/A
Sb-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 5 Hr 46 Mn	N/A
Tl-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 4 Hr 5 Mn	N/A
Pb-MS/6020	06/12/96	14:01	jmn	180	days	6 Days 5 Hr 46 Mn	N/A
Ni-MS/6020	06/13/96	12:20	jmn	180	days	7 Days 4 Hr 5 Mn	N/A
Hg/7470	06/13/96	12:13	dsb	28	days	7 Days 3 Hr 58 Mn	N/A
Se-GF/7740	06/19/96	19:04	jmn	180	days	13 Days 10 Hr 48 Mn	N/A
8260	06/20/96	13:58	HLS	14	days	14 Days 5 Hr 42 Mn	0 Days 5 Hr 42 Mn
8270	07/08/96	21:33	SCL	40	days	32 Days 13 Hr 18 Mn	N/A
CN-T/9012	06/17/96	10:30	ejp	14	days	11 Days 2 Hr 15 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

000150

GERAGHTY & MILLER, INC.
Environmental Services
a heidemij company

Laboratory Task Order No. 17916

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number [illegible]

Project Location [illegible]

Laboratory [illegible]

Sampler(s)/Affiliation [illegible]

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION									TOTAL
[illegible]	L	[illegible]		3									3
[illegible]	L	[illegible]		2	2	1	1	[illegible]					6
[illegible]	L	[illegible]		3	2	1	1						6
[illegible]		[illegible]						1					1

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 20

Relinquished by: [illegible]	Organization: G&M (TAMPA)	Date 6/7/96	Time 1830	Seal Intact?
Received by: [illegible]	Organization: CAE	Date 6/8/96	Time 1130	(Yes) No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: [illegible]

Delivery Method: ☐ In Person ☑ Common Carrier [illegible] ☐ Lab Courier ☐ Other _____ SPECIFY

000151

GERAGHTY & MILLER, INC.
Environmental Services
a heidemij company

Laboratory Task Order No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

Project Number TC370.019

Project Location Sloss Birmingham, AL

Laboratory Center for Applied Eng

Sampler(s)/Affiliation J. Hughes G&M

C14722
9606096
~~772~~ 666
6-20-96

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	EPA 8260 40 ml Glass Vial HCl	EPA 8270 1 Liter Amber Glass	TPH Methanol 1 Liter Plastic HNO3	TPH Methanol 1 Liter Plastic HNO3	Cyanide 1 Liter Plastic NaOH	Temp Blank Glass vial				TOTAL
5-MW-02B-FW0001	L	6/5/96 1400		4	4	1	1	1			96-	6157	11
5-CO-02B-FW9001	L	6/5/96 —		3	3	1	1	1			96-	6161	(MS) ~~12~~ 9
TRIP BLANK	L	—		3							96-	6162	3
TEMP BLANK	L	—		1									1

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: ~~27~~ 24

Relinquished by: _____	Organization: G&M (TAMPA	Date 6/5/96	Time 1800	Seal Intact? Yes No N/A
Received by: _____	Organization: CAE	Date 6/6/96	Time 1030	
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact? Yes No N/A
Received by: _____	Organization: _____	Date / /	Time _____	

Special Instructions/Remarks: 1) METAL-HCl DISS'D FIELD FILTERED W/ 0.45 um FILTER. 9606096-01-02B-FW0001 INCLUDES EXTRA 8260 5 ml VIAL FOR MS/MSD ANALYSIS, BUBBLES FOUND IN 8260s FOR 02B-FW0001 & 9606095-01-02B-FW9001 NOTED. SAMPLING DUE TO CLOSING OF SAMPLE FROM TUE'S TO 4°C. DIRECT QUERY ALL QUESTIONS TO KATHLEEN HAMATT 813/621-9401

Delivery Method: ☐ In Person ☒ Common Carrier Airborne EXPRESS ☐ Lab Courier ☐ Other _____

SPEC

GEOLOGICAL & ENGINEERING, INC.
Environmental Services
a heidemij company

Laboratory Task Order No._____

CHAIN-OF-CUSTODY RECORD

Page___ of 9.

Project Number TF0320.014

Project Location SLOSS BIRMINGHAM, AL

Laboratory CENTER FOR APPLIED ENG

Sampler(s)/Affiliation J. HUGHES G&M

COC# C14722

PROJECT# 9606096

ACCOUNT# ~~772~~ 666

DUE DATE: 6-20-96

SAMPLE BOTTLE / CONTAINER DESCRIPTION

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	EPA 8260 40 mL GLASS VIAL HCl	EPA 8270 LITER AMBER GLASS	PP METALS + BA LITER PLASTIC HNO3	PP METALS + BA DISS LITER PLASTIC HNO3	CYANIDE LITER PLASTIC NaOH	TEMP BLANK 40 mL GLASS VIAL				TOTAL
960605-CO-02B-PW0001	L	6/5/96 1400		4	4	1	1	1			96-	6157	11
960605-CO-02B-PW9001	L	6/5/96 —		3	3	1	1	1			96-	6161	MSD ~~12~~ 9
TRIPBLANK	L	—		3							96-	6162	3
TEMPBLANK	L	—		1									1

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers ~~27~~ 24

Relinquished by: [signature]	Organization: G&M / TAMPA	Date 6/5/96	Time 1800	Seal Intact? Yes No N/A
Received by: [signature]	Organization: CAE	Date 6/6/96	Time 1030	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: PP METAL + BA DISS'L FIELD FILTERED W/ 0.45 µm FILTER. 960605-CO-02B-PW0001 INCLUDES EXTRA 8260 & 8270 CONTAINER FOR MS/MSD ANALYSIS, BUBBLES FORMED 960605-CO-02B-PW0001 & 960605-CO-02B-PW AFTER SAMPLING DUE TO COOLING OF SAMPLE FROM ±60°C TO 4°C. DIRECT ANY/ALL QUESTIONS TO KATHY THALMAN AT 81396

Delivery Method: ☐ In Person ☒ Common Carrier AIRBORNE EXPRESS (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

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Southprint 95-0533

GERAGHTY & MILLER, INC.
Environmental Services
a heidemij company

Laboratory Task Order No._____

CHAIN-OF-CUSTODY RECORD

Project Number TF0370.014

Project Location SWSS BIRMINGHAM

Laboratory CENTER FOR APPLIED ENG

Sampler(s)/Affiliation [signature] G&M

COC # C14726
PROJECT # 9606090
ACCOUNT # 666 ALM
DUE DATE: 6-20-96

SAMPLE BOTTLE / CONTAINER DESCRIPTION

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	EPA 8260 40mL GLASS VIAL HCl	EPA 8270 LITER AMBER GLASS	PPMETALS + Ba LITER PLASTIC HNO3	PPMETALS+Ba DISSOLVED LITER PLASTIC HNO3	CYANIDE LITER PLASTIC NaOH	TEMP BLANK 40mL GLASS VIAL				TOTAL
5-CO-02B-FB001	L	6/5/96 1115		3	3	1		1			96-6163		8
5-CO-02B-PWEB01	L	" 1130		3	3	1	1	1			96-6164		9
TRIP BLANK	L	5-31 10:44 LRW		3							96-6165		3
TEMP BLANK	L	—							1				1

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 21

Relinquished by: [signature]	Organization: G&M TAMPA	Date 6/5/96 Time 1800	Seal Intact? Yes No N/A
Received by: [signature]	Organization: CAE	Date 6/6/96 Time 1030	
Relinquished by:	Organization:	Date / / Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / / Time	

Special Instructions/Remarks:
DIRECT ANY/ALL QUESTIONS TO KATHY T. AT 813 9611921
PPMETALS + BA DISS'L FIELD FILTERED W/ 0.45 µm FILTER

Delivery Method: ☐ In Person ☒ Common Carrier AIRBORNE EXPRESS ☐ Lab Courier ☐ Other _____

Center For Applied Engineering, Inc.

CHAIN-OF-CUSTODY CHECKLIST

CHAIN-OF-CUSTODY NO.: C14722	LAB PROJECT NO.: 9606096
DATE: 6-6-96 TIME: 1030	NUMBER OF C-O-C FORMS: 1
DELIVERED BY: Airborne Express	AIRBILL OR SHIPPING LOG NO.: 5027454353
CLIENT NAME: Geraghty & Miller	
PROJECT COMMENTS: Sloss	

ITEM	Y	N	COMMENTS
CUSTODY SEAL INTACT	✓		
SHIPPING CONTAINER INTACT	✓		
ICE PRESENT	✓		
TEMPERATURE OF TEMP. CHECK CONTAINER	✓		5°C
NUMBER OF CONTAINERS MATCH	✓		
TYPE OF CONTAINERS MATCH	✓		
PROPER CONTAINERS (For Analyses Requested)	✓		
PROPER PRESERVATIONS (For Analyses Requested)	✓		
pH PRESERVATIONS VERIFIED	✓		
DO VIALS CONTAIN AIR	✓		* Trip Blank 3 of 3 vials contain bubbles <5mm
SAMPLES WITHIN HOLDING TIMES	✓		
CONTAINERS BROKEN		✓	
MULTI-PHASE SAMPLE (Indicate number of phases, and probable type and/or identification.)		✓	
SEDIMENT PRESENT IN WATER SAMPLES	✓		Note Sample ID's and approximate volume below.

OTHER COMMENTS: light sediment present

* All sample vials (other than TB) contain Large ~~air~~ air bubbles greater than 5 mm. (MSL)

In the event of sample rejection or other problems, has the client been contacted? Yes ___ No ___

CONTACT NAME: Kathy Thalman DATE: 6/6/96 TIME: —

AGREED UPON COURSE OF ACTION: Kathy said to run all volatile samples Bubbles due to high temperature of water. (ACM)

COMPLETED BY: Martha John APPROVED BY: ACM 6-10-96

(Approval required for sample rejection and special problems.)

COCCL 0.JH Rev 04/96

GERAGHTY & MILLER, INC.
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Laboratory Task Order No. 17916

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C14749
9606 | 24
666
6-24-96

Project Number [illegible]

Project Location [illegible]

Laboratory [illegible]

Sampler(s)/Affiliation [illegible]

SAMPLE BOTTLE / CONTAINER DESCRIPTION

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	TOTAL	
[illegible]-12-[illegible]4	L	—		3									3	96-62[illegible]
[illegible]-12-[illegible]	S	6/7/96 1[illegible]							1	1	1		3	96-62[illegible]
[illegible]-12-[illegible]2	S	[illegible]							1	1	1		3	96-62[illegible]
[illegible]-12-[illegible]2	S	—							1	1	1		3	96-62[illegible]
[illegible]-[illegible]-[illegible]	L	[illegible] 1[illegible]		3	3	1	1	1					9	96-624
[illegible]	L	—										1	1	

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 22

Relinquished by: [illegible]	Organization: [illegible]	Date 6/[illegible]/96 Time 1[illegible]	Seal Intact? Yes No N/A
Received by: [illegible]	Organization: CAE	Date 6/8/96 Time 1130	
Relinquished by:	Organization:	Date / / Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / / Time	

Special Instructions/Remarks: [illegible]

Delivery Method: ☐ In Person ☒ Common Carrier [illegible] ☐ Lab Courier ☐ Other

SPECI[illegible]

Southprint 95-0533

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Center For Applied Engineering, Inc.

CHAIN-OF-CUSTODY CHECKLIST

CHAIN-OF-CUSTODY NO.: C14749 LAB PROJECT NO.: 960624

DATE: 6-8-96 TIME: 1130 NUMBER OF C-O-C FORMS: 1

DELIVERED BY: Airborne Express AIRBILL OR SHIPPING LOG NO.: 502 745 4456

CLIENT NAME: Sloss Ind. / G+M

PROJECT COMMENTS: TF 0320.014

ITEM	Y	N	COMMENTS
CUSTODY SEAL INTACT	✓		
SHIPPING CONTAINER INTACT	✓		
ICE PRESENT	✓		
TEMPERATURE OF TEMP. CHECK CONTAINER	✓		8°C
NUMBER OF CONTAINERS MATCH	✓		
TYPE OF CONTAINERS MATCH	✓		
PROPER CONTAINERS (For Analyses Requested)	✓		
PROPER PRESERVATIONS (For Analyses Requested)	✓		
H PRESERVATIONS VERIFIED	✓		
DO VIALS CONTAIN AIR	✓		See below ✗
SAMPLES WITHIN HOLDING TIMES	✓		
CONTAINERS BROKEN		✓	
MULTI-PHASE SAMPLE (Indicate number of phases, and probable type and/or identification.)		✓	
SEDIMENT PRESENT IN WATER SAMPLES	✓		Note Sample ID's and approximate volume below.

OTHER COMMENTS: light sediment present

✗ TB - 2 of 3 Contain bubbles < 5mm
PW001 - 3 of 3 " " > 5mm (MSL)

In the event of sample rejection or other problems, has the client been contacted? Yes ___ No ___

CONTACT NAME: _____ DATE: _____ TIME: _____

AGREED UPON COURSE OF ACTION: _____

COMPLETED BY: _____ APPROVED BY: ACM 6-10-96

(Approval required for sample rejection and special problems.)

COCCL RJH Rev 04/96

GERAGHTY & MILLER, INC.
Environmental Services
a heidemij company

Laboratory Task Order No._____

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

Project Number TFO 320.014

Project Location JIOSS BIRMINGHAM

Laboratory CENTER FOR APPLIED ENG

Sampler(s)/Affiliation [signature] G&M

SAMPLE BOTTLE / CONTAINER DESCRIPTION

C14726
9606096
666 ALM
6-20-96

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	EPA 8260 40mL GLASS VIAL HCl	EPA 8270 LITER AMBER GLASS	PPMETALS + Ba LITER PLASTIC HNO3	PPMETALS+Ba DISSOLVED LITER PLASTIC HNO3	CYANIDE LITER PLASTIC NaOH	TEMP BLANK 40mL GLASS VIAL				TOTAL
605-Co-02B-FB0001	L	6/5/96 1115		3	3	1		1			96-6163		8
605-Co-02B-PWEB01	L	" 1130		3	3	1	1	1			96-6164		9
TRIP BLANK	L	5-31 10:44 LRW		3							96-6165		3
TEMP BLANK	L	—							1				1

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 21

Relinquished by: [signature]	Organization: G&M TAMPA	Date 6/5/96	Time 1800	Seal Intact? Yes No N/A
Received by: [signature]	Organization: CAE	Date 6/6/96	Time 1030	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks:

DIRECT ANY/ALL QUESTIONS TO KATHY T. AT 813 9611921

PPMETALS + Ba DISS'L FIELD FILTERED w/ 0.45 um FILTER

Delivery Method: ☐ In Person ☒ Common Carrier AIRBORNE EXPRESS (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

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Center For Applied Engineering, Inc.

CHAIN-OF-CUSTODY CHECKLIST

CHAIN-OF-CUSTODY NO.: C14726 LAB PROJECT NO.: 9606100

DATE: 6-6-96 TIME: 1030 NUMBER OF C-O-C FORMS: 1

DELIVERED BY: Airborne Express AIRBILL OR SHIPPING LOG NO.: 5027454051

CLIENT NAME: Geraghty + Miller

PROJECT COMMENTS: Sloss

ITEM	Y	N	COMMENTS
CUSTODY SEAL INTACT	✓		
SHIPPING CONTAINER INTACT	✓		
ICE PRESENT	✓		
TEMPERATURE OF TEMP. CHECK CONTAINER	✓		8°C
NUMBER OF CONTAINERS MATCH	✓		
TYPE OF CONTAINERS MATCH	✓		
PROPER CONTAINERS (For Analyses Requested)	✓		
PROPER PRESERVATIONS (For Analyses Requested)	✓		
pH PRESERVATIONS VERIFIED	✓		
DO VIALS CONTAIN AIR	✓		Trip Blank 3 of 3 vials contain bubbles <5 mm
SAMPLES WITHIN HOLDING TIMES	✓		
CONTAINERS BROKEN		✓	
MULTI-PHASE SAMPLE (Indicate number of phases, and probable type and/or identification.)		✓	
SEDIMENT PRESENT IN WATER SAMPLES	✓		Note Sample ID's and approximate volume below.

OTHER COMMENTS: light sediment present

In the event of sample rejection or other problems, has the client been contacted? Yes ___ No ___

CONTACT NAME: _____ DATE: _____ TIME: _____

AGREED UPON COURSE OF ACTION: _____

COMPLETED BY: _____ APPROVED BY: ALM 6-10-96

(Approval required for sample rejection and special problems.)

COCCL 0JII Rev 04/96

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Sloss Industries
PROJECT NUMBER: TF0320.014
SAMPLING DATE: June 6th - 10, 1996 VALIDATION DATE: 8/11/96
SAMPLE IDENTIFICATION: Coke Manufacturing Plant
Lab IDs 96-6241 through 96-6243, 96-6336 through 96-6353
SAMPLING TEAM: J. Hughes / J. Scotto
ANALYZING LABORATORY: Centec Foe Applied Engineering
ANALYSES PERFORMED: 8260 / 8270 / Priority Pollutant Metals + baeium, cyanide
SAMPLE MATRIX: Soil
QA REPORTING LEVEL: ~~III~~ II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS:[1]	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		X		X	
2. SAMPLING TEAM INDICATED		X		X	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		X		X	
4. SAMPLE LOCATION		X		X	
5. SAMPLE DEPTH FOR SOILS		X		X	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		X		X	
7. FIELD SAMPLE PREPARATION TECHNIQUES		X		X	
8. SAMPLE TYPE (GRAB, COMPOSITE)		X		X	
9. SAMPLE CONTAINER TYPE		X		X	
10. PRESERVATION METHODS		X		X	
11. CHAIN OF CUSTODY FORM COMPLETED		X		X	
12. REQUIRED ANALYTICAL METHODS REQUESTED		X		X	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		X		X	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		X		X	
15. FIELD EQUIPMENT CALIBRATION	X			X	X
16. FIELD EQUIPMENT DECONTAMINATION		X		X(a)	
17. SAMPLE SHIPPING		X		X	
18. LABORATORY TASK ORDER	X		X(b)		

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:
a) Field equipment decontamination needs to be documented daily.
b) No LTO was available for review / No LTO was referenced on the COC's accompanying samples.

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		X		X	
2. PARAMETERS ANALYZED		X		X	
3. METHOD OF ANALYSIS		X		X	
4. DETECTION LIMITS OF ANALYSIS		X		X	
5. MASTER TRACKING LIST		X		X	
6. SAMPLE COLLECTION DATE		X		X	
7. LAB SAMPLE RECEIVED DATE		X		X	
8. SAMPLE PREPARATION/EXTRACTION DATE		X		X	
9. SAMPLE ANALYSIS DATE		X		X	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		X		X	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		X		X	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES

METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I
REQUIREMENTS

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

COMMENTS:

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks					
2. Extraction Blanks					
3. MS[4/] (Batch Specific)					
4. MSD[5/] (Batch Specific)					
5. LD[6/] (Optional)					
6. MS/MSD RPD or Sample/LD RPD					
7. RWS					
8. RWSD					
9. RWS RPD					
10. Surrogate Spikes					

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks		X		X	
2. Extraction Blanks		X		X	
3. MS (Batch Specific)		X		X	
4. MSD (Batch Specific)		X		X	
5. LD (Optional)	X				X
6. MS/MSD RPD or Sample/LD RPD		X		X	
7. RWS	X				X
8. RWSD	X				X
9. RWS RPD	X				X
10. Surrogate Spikes		X		X(a)	

COMMENTS:
(a) Several samples qualified due to surrogate recovery

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES

METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)[1/]

	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		X		X	
2. MS % RECOVERY (%R)		X		X	
3. MSD OR LAB DUPLICATE % R		X		X	
4. RWS % R		X		X	
5. RWSD % R	X				X
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD	X				X
7. LCS[8/] %R		X		X	
8. ICVS [9/] %R	X				X

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)[10/]

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11/] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12/] %R (ICP ONLY)					
7. DCS[13/] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14/]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES.
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

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ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE CONTINUED

ORGANIC ANALYSES

QA REPORTING LEVEL: III
REQUIREMENTS

A. GAS CHROMATOGRAPH OR WET CHEMISTRY	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. WATER BLANKS (VOC)					
2. EXTRACTION BLANKS					
3. MS[1/] %R SAMPLE SPECIFIC					
4. MSD[2/] %R SAMPLE SPECIFIC					
5. LD[3/] SAMPLE SPECIFIC (OPTIONAL)					
6. MS/MSD RPD[4/] OR SAMPLE/LD RPD					
7. RWS[5/]					
8. RWSD[6/]					
9. RWS/RWSD RPD					
10. SURROGATE SPIKES					

B. GAS CHROMATOGRAPH/MASS SPECTROMETER					
1. BFB OR DFTPP TUNING[7/]					
2. INITIAL CALIBRATION (IC)					
A. SPCC COMPOUNDS (RRF[8/] >0.3/0.05)					
B. CCC COMPOUNDS (RSD[9/] < 30%)					
C. OTHER COMPOUNDS (RRF > 0.05)					
3. CONTINUING CALIBRATION (CC)					
A. SPCC COMPOUNDS (RRF >0.3/0.05)					
B. CCC COMPOUNDS (MAX %D[10/] < 25%)					
C. OTHER COMPOUNDS (RRF >0.05)					
4. WATER BLANKS					
5. EXTRACTION BLANKS					
6. RWS					
7. RWSD					
8. RWS/RWSD RPD					
9. MS (SAMPLE SPECIFIC)					
10. MSD (SAMPLE SPECIFIC)					
11. SURROGATE SPIKE					

COMMENTS: _____

1/ MS = MATRIX SPIKE; 2/ MSD = MATRIX SPIKE DUPLICATE; 3/ LD = LAB DUP
4/ RPD = RELATIVE PERCENT DIFFERENCE; 5/ RWS = REAGENT WATER SPIKE;
6/ RWSD = REAGENT WATER SPIKE DUPLICATE; 7/ BFB TUNING IS FOR VOLATILES AND DFTPP TUNING IS FOR SEMI-VOLATILES (BNA EXTRACTABLES). 8/ RRF = RELATIVE RESPONSE FACTOR;
9/ RSD = RELATIVE STANDARD DEVIATION; 10/ %D = PERCENT DIFFERENCE;

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ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY

PROJECT NAME: Sloss Industries PROJECT NUMBER: TF0320.014
QA REPORTING LEVEL: II VALIDATION DATE: Aug. 11, 1996

ALL QA REPORTING LEVELS (I,II,III)

SUMMARY OF CHECKLIST FINDINGS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA	X				X
2. FIELD RECORDS		X		X	
3. METHODS (GEN.INFO. SECTION ONE)		X		X	
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES		X		X	
B. ANALYSIS HOLDING TIMES		X		X	
5. DETECTION LIMITS (SECTION ONE)		X		X	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS		X		X	
B. FIELD BLANKS		X		X	
C. TRIP BLANKS		X		X	
D. LABORATORY BLANKS		X		X	
7. FIELD REPLICATES		X		X	
8. FIELD SPLITS	X				X
9. GEOPHYSICAL COMPARISONS					
A. CATION VS ANION	X				X
B. TDS VS SPEC. CONDUCTANCE	X				X
C. PH VS ALK/ACIDITY	X				X
D. OTHER	X				X
10. METALS QA DATA (SECTION TWO)		X		X	
11. INORGANIC WET CHEMISTRY (SEC. TWO)	X				X
12. ORGANIC QA DATA-GC (SECTION THREE-A)	X				X
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)	X				X
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		X		X	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING

PROJECT NAME: Glass Industries PROJECT NUMBER: TF0330.014
QA REPORTING LEVEL: II VALIDATION DATE: Aug. 16, 1996

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION:

Please reference the attached Table for all qualified analytical results for the data package.

VALIDATION PERFORMED BY: Cindy Arnold

SIGNED: Cindy Arnold

DATE: Sept. 28, 1994

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Table 1
Summary of Qualified Analytical Results
for Sloss Industries
Coke Manufacturing Plant
Birmingham, AL

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
SWMU-12				
960607-CO-12-SL0001 (0.5-1.5)	antimony	BDL	R	QC Batch No. 23006 MS recovery 15%
960607-CO-12-SL0002 (0.5-1.5)	antimony	BDL	R	QC Batch No. 23006 MS recovery 15%
960607-CO-12-SL9002	antimony	BDL	R	QC Batch No. 23006 MS recovery 15%
QUENCH A TOWER SOIL				
960608-CO-01A-SL0001 (0-0.1)	zinc	28 mg/Kg	U	Zinc detected in SLEB04 at 43 ug/L
960608-CO-01A-SL0001 (0-0.1)	8260 BDL compounds	all BDL	R	Surrogate recoveries outside the lower control limit criteria
960608-CO-01A-SL0001 (0-0.1)	8260 BDL compounds	all BDL	R	QC Batch 23675 LCS and MS had several recoveries out of control
960608-CO-01A-SL0001 (0-0.1)	di-n-butylphthalate	1800 ug/Kg	U	QC Batch 23602 Method Blk di-n-butylphthalate 1376 ug/Kg
960608-CO-01A-SL0002 (0-0.1)	zinc	17 mg/Kg	U	Zinc detected in SLEB04 at 43 ug/L
960608-CO-01A-SL0002 (0-0.1)	8260 BDL compounds	all BDL	R	Surrogate recoveries outside the control limit criteria
960608-CO-01A-SL0002 (0-0.1)	8260 BDL compounds	all BDL	R	QC Batch 23675 LCS and MS had several recoveries out of control
960608-CO-01A-SL0002 (0-0.1)	di-n-butylphthalate	450 ug/Kg	U	QC Batch 23602 Method Blk di-n-butylphthalate 1376 ug/Kg
960608-CO-01A-SL9002	zinc	19 mg/Kg	U	Zinc detected in SLEB04 at 43 ug/L
960608-CO-01A-SL9002	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960608-CO-01A-SL9002	8260 > BDL	all > BDL	J	Surrogate recoveries outside the control limit criteria
960608-CO-01A-SL9002	bromomethane	7.3 ug/Kg	U	QC Batch 23605 Method Blk bromomethane 5.6 ug/Kg
960608-CO-01A-SL9002	di-n-butylphthalate	770 ug/Kg	U	QC Batch 23602 Method Blk di-n-butylphthalate 1376 ug/Kg
QUENCH A TOWER SOIL *Continued*				
960608-CO-01A-SL0003 (0-0.1)	zinc	29 mg/Kg	U	Zinc detected in SLEB04 at 43 ug/L
960608-CO-01A-SL0003 (0-0.1)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960608-CO-01A-SL0003 (0-0.1)	8260 > BDL	all > BDL	J	Surrogate recoveries outside the control limit criteria
960608-CO-01A-SL0003 (0-0.1)	di-n-butylphthalate	1700 ug/Kg	U	QC Batch 23602 Method Blk di-n-butylphthalate 1376 ug/Kg
QUENCH B TOWER SOIL				
960608-CO-01B-SL0001 (0-0.1)	zinc	44 mg/Kg	U	Zinc detected in SLEB04 at 43 ug/L
960608-CO-01B-SL0001 (0-0.1)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960608-CO-01B-SL0001 (0-0.1)	8260 > BDL	all > BDL	J	Surrogate recoveries outside the control limit criteria
960608-CO-01B-SL0001 (0-0.1)	di-n-butylphthalate	990 ug/Kg	U	QC Batch 23602 Method Blk di-n-butylphthalate 1376 ug/Kg
960608-CO-01B-SL0002 (0-0.1)	zinc	14 mg/Kg	U	Zinc detected in SLEB04 at 43 ug/L
960608-CO-01B-SL0002 (0-0.1)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960608-CO-01B-SL0002 (0-0.1)	8260 > BDL	all > BDL	J	Surrogate recoveries outside the control limit criteria
960608-CO-01B-SL0003 (0-0.1)	zinc	34 mg/Kg	U	Zinc detected in SLEB04 at 43 ug/L
960608-CO-01B-SL0003 (0-0.1)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960608-CO-01B-SL0003 (0-0.1)	di-n-butylphthalate	1300 ug/Kg	U	QC Batch 23602 Method Blk di-n-butylphthalate 1376 ug/Kg
960610-CO-02A-SL0001 (2-4)	zinc	63 mg/Kg	U	Zinc detected in SLEB04 at 43 ug/L
960610-CO-02A-SL0001 (2-4)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria

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Table 1
Summary of Qualified Analytical Results
for Sloss Industries
Coke Manufacturing Plant
Birmingham, AL

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
960610-CO-02A-SL0001 (2-4)	8260 > BDL	all > BDL	J	Surrogate recoveries outside the control limit criteria
960610-CO-02A-SL0001 (2-4)	di-n-butylphthalate	2700 ug/Kg	U	QC Batch 23602 Method Blk di-n-butylphthalate 1376 ug/Kg
960610-CO-02A-SL0001 (16-18)	acetone	92 ug/Kg	U	Acetone detected in TB006 at 81 ug/L
960610-CO-02A-SL0001 (16-18)	zinc	36 mg/Kg	U	Zinc detected in SLEB04 at 43 ug/L
960610-CO-02A-SL0001 (16-18)	1,1,2,2-tetrachloroethane	2.4 ug/Kg	U	QC Batch 23605 Method Blk 1,1,2,2-tetrachloroethane 4.5 ug/Kg
960610-CO-02A-SL0001 (16-18)	di-n-butylphthalate	2900 ug/Kg	U	QC Batch 23602 Method Blk di-n-butylphthalate 1376 ug/Kg
960610-CO-02A-SL0002 (2-4)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960610-CO-02A-SL0002 (2-4)	8260 > BDL	all > BDL	J	Surrogate recoveries outside the control limit criteria
960610-CO-02A-SL0002 (2-4)	di-n-butylphthalate	1500 ug/Kg	U	QC Batch 23602 Method Blk di-n-butylphthalate 1376 ug/Kg
960610-CO-02A-SL0004 (2-4)	zinc	78 mg/Kg	U	Zinc detected in SLEB04 at 43 ug/L
960610-CO-02A-SL0004 (2-4)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960610-CO-02A-SL0004 (2-4)	8260 > BDL	all > BDL	J	Surrogate recoveries outside the control limit criteria
960610-CO-02A-SL0004 (2-4)	di-n-butylphthalate	1200 ug/Kg	U	QC Batch 23602 Method Blk di-n-butylphthalate 1376 ug/Kg

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Center For Applied Engineering, Inc.
SM Environmental Testing Services

CASE NARRATIVE

Lab sample ID.	G&M sample ID.
96-6241	960607-CO-12-SL0001 (0.5-1.5)
96-6242	960607-CO-12-SL0002 (0.5-1.5)
96-6243	960607-CO-12-SL9002
96-6336	960608-CO-01A-TB0005
96-6337	960608-CO-01A-SL0001 (0-0.1)
96-6338	960608-CO-01A-SL0002 (0-0.1)
96-6339	960608-CO-01A-SL0003 (0-0.1)
96-6340	960608-CO-01B-SL0001 (0-0.1)
96-6341	960608-CO-01B-SL0002 (0-0.1)
96-6342	960608-CO-01B-SL0003 (0-0.1)
96-6343	960608-CO-01A-SL9002
96-6344	960608-CO-01A-TB0006
96-6345	960608-CO-01A-FB0003
96-6346	960608-CO-01A-SLEB03
96-6347	960610-CO-02A-TB0007
96-6348	960610-CO-02A-FB0004
96-6349	960610-CO-02A-SLEB04
96-6350	960610-CO-02A-SL0001 (2-4)
96-6351	960610-CO-02A-SL0001 (16-18)
96-6352	960610-CO-02A-SL0002 (2-4)
96-6353	960610-CO-02A-SL0004 (2-4)

Volatiles

Recoveries of target compounds in Matrix Spike (MS) and Matrix Spike Duplicates (MSD) for several compounds were variable due to matrix effects from the high levels of nontarget hydrocarbon compounds. The project recovery limits were relatively narrow for samples with this type of background hydrocarbon contamination. Several of the MS/MSD recoveries were within the laboratory's historical limits, but outside the project limits. Several compound's recoveries were consistently higher than the project upper limit which were near or below 100%. Most of the compounds exhibiting out of control spike recoveries were not detected in the samples. Recoveries may have also been high due to the hydrocarbon contamination causing carry over of other compounds from the calibration check samples, QCRS and MS/MSD samples. Carry over was noted in two blanks for bromomethane and 1,1,2,2-tetrachloroethane. Additional blanks and bakeout time were needed to run the samples. Similar effects were noted for the QCRS or Laboratory Control Sample (Blank Spikes), but the effect was on fewer compounds. Surrogate recoveries were generally good except for the samples noted in the attached reports. Some of the samples with poor surrogate recovery were also the samples used for MS/MSD analysis.

2-chloroethylvinyl ether was not recovered in the quality control blanks (Trip, Field and Equipment Blanks) due to hydrolysis from the acid preservation of the samples.

Semivolatiles

MS/MSD recoveries are in control limits for the first set of MS/MSD except pyrene that was above the high limit. The second set associated with this group of samples showed low recovery for several compounds due to matrix effects.

The QCRS/LCS/Blank Soil Spike samples have low recovery on a single compound, but different compound in each sample. Also, the samples were prepared using the MS/MSD spiking solution by mistake rather than the spiking solution with all target compounds. Initial and continuing calibration was in control for the target compounds.

Method blanks contained di-n-butyl-phthalate for both prep batches. The source is not known, but the next two Method Blanks did not show contamination. The sample results are reported as quantified, blank subtraction was not performed.

Metals

Antimony MS/MSD recovery was below the acceptance limits, probably due to matrix effects. All LCS and blank data is in control.

Cyanide

No problems were encountered with the performance of the cyanide analysis.

Respectfully Submitted

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960607-CO-12-SL0001 (0.5-1.5), Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14749
Date Collected: 06/07/96 10:45
Collected By: CST
Date Received: 06/08/96 11:30
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006241

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.0	1	6010	06/13	23006
Arsenic, Total	96	MG/KG-DW	1.0	10	6020	06/13	23019
Barium, Total	81	MG/KG-DW	1.0	1	6010	06/13	23006
Beryllium, Total	1.2	MG/KG-DW	0.50	1	6010	06/13	23006
Cadmium, Total	BDL	MG/KG-DW	0.50	1	6010	06/13	23006
Chromium, Total	46	MG/KG-DW	1.0	1	6010	06/13	23006
Copper, Total	7.0	MG/KG-DW	2.5	1	6010	06/13	23006
Mercury, Total	BDL	MG/KG-DW	0.033	1	7471	06/14	23034
Nickel, Total	7.5	MG/KG-DW	4.0	1	6010	06/13	23006
Lead, Total	27	MG/KG-DW	5.0	1	6010	06/13	23006
Antimony, Total	BDL	MG/KG-DW	5.0	1	6010	06/13	23006
Selenium, Total	BDL	MG/KG-DW	50	1	6010	06/13	23006
Thallium, Total	BDL	MG/KG-DW	50	1	6010	06/13	23006
Zinc, Total	34	MG/KG-DW	2.0	1	6010	06/13	23006
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	3700	UG/KG-DW	330	1	8270	07/08	23523
1,2-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
1,3-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
1,4-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2,4,5-Trichlorophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2,4,6-Trichlorophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,4-Dinitrophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2,4-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,6-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,6-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/08	23523
2-Chloronaphthalene	BDL	UG/KG-DW	330	1	8270	07/08	23523

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ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

ast Proj: TF0320.014
ample Desc: 960607-CO-12-SL0001 (0.5-1.5), Birmingham, AL

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
2-Methylnaphthalene	1400	UG/KG-DW	330	1	8270	07/08	23523
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	330	1	8270	07/08	23523
2-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2-Nitrophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	330	1	8270	07/08	23523
3-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/08	23523
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/08	23523
4-Chloro-3-methylphenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
4-Chloroaniline	BDL	UG/KG-DW	660	1	8270	07/08	23523
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/08	23523
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	330	1	8270	07/08	23523
4-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/08	23523
4-Nitrophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
Acenaphthene	1900	UG/KG-DW	330	1	8270	07/08	23523
Acenaphthylene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Anthracene	2000	UG/KG-DW	330	1	8270	07/08	23523
Benzyl alcohol	BDL	UG/KG-DW	330	1	8270	07/08	23523
Benzo(a)anthracene	4900	UG/KG-DW	330	1	8270	07/08	23523
Benzo(a)pyrene	4700	UG/KG-DW	330	1	8270	07/08	23523
Benzo (b) fluoranthene	5200	UG/KG-DW	330	1	8270	07/08	23523
Benzo (k) fluoranthene	4500	UG/KG-DW	330	1	8270	07/08	23523
Benzo (g,h,i) perylene	3000	UG/KG-DW	330	1	8270	07/08	23523
Chrysene	6000	UG/KG-DW	330	1	8270	07/08	23523
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	330	1	8270	07/08	23523
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	330	1	8270	07/08	23523
Dibenzofuran	1400	UG/KG-DW	330	1	8270	07/08	23523
Dibenzo (a,h) anthracene	1400	UG/KG-DW	330	1	8270	07/08	23523

0001273

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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FL-DEP CompQAP: 900359G

ab ID: 96 0006241

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2,4-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
Diethylphthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,4-Dimethylphenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
Dimethylphthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
n-Nitrosodimethylamine	BDL	UG/KG-DW	330	1	8270	07/08	23523
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	330	1	8270	07/08	23523
Di-n-octylphthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	330	1	8270	07/08	23523
Fluorene	2000	UG/KG-DW	330	1	8270	07/08	23523
Fluoranthene	9800	UG/KG-DW	330	1	8270	07/08	23523
Hexachlorocyclopentadiene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Hexachlorobutadiene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Hexachlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Hexachloroethane	BDL	UG/KG-DW	330	1	8270	07/08	23523
Indeno(1,2,3-cd)pyrene	3300	UG/KG-DW	330	1	8270	07/08	23523
Isophorone	BDL	UG/KG-DW	330	1	8270	07/08	23523
Naphthalene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Nitrobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Pentachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
Phenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
Phenanthrene	7500	UG/KG-DW	330	1	8270	07/08	23523
Pyrene	9400	UG/KG-DW	330	1	8270	07/08	23523
Pyridine	BDL	UG/KG-DW	330	1	8270	07/08	23523
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.50	1	8260	06/10	23674
1,1,2-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,1-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

.stribution of Report:
iarles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,2,3-Trichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,2-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,2-Dichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	10	1	8260	06/10	23674
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	50	1	8260	06/10	23674
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	10	1	8260	06/10	23674
2-Hexanone	BDL	UG/KG-DW	50	1	8260	06/10	23674
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	50	1	8260	06/10	23674
Acetone	BDL	UG/KG-DW	50	1	8260	06/10	23674
Acrolein	BDL	UG/KG-DW	200	1	8260	06/10	23674
Acrylonitrile	BDL	UG/KG-DW	100	1	8260	06/10	23674
Benzene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Bromodichloromethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Bromoform	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Bromomethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Carbon tetrachloride	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Chloroform	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Chlorobenzene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Chloroethane	BDL	UG/KG-DW	10	1	8260	06/10	23674
Chloromethane	BDL	UG/KG-DW	10	1	8260	06/10	23674
Carbon disulfide	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
cis-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Dichlorodifluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Dibromochloromethane	BDL	UG/KG-DW	10	1	8260	06/10	23674
Dibromomethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Ethylbenzene	6.6	UG/KG-DW	5.0	1	8260	06/10	23674
Ethyl methacrylate	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Iodomethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674

0001 of 5

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
ast Proj: TF0320.014
ample Desc: 960607-CO-12-SL0001 (0.5-1.5), Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14749
Date Collected: 06/07/96 10:45
Collected By: CST
Date Received: 06/08/96 11:30
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006241

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Methylene chloride	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
o-Xylene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Styrene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Trichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Trichlorofluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Tetrachloroethene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Toluene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
trans-1,2-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
trans-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Vinyl acetate	BDL	UG/KG-DW	10	1	8260	06/10	23674
Vinyl chloride	BDL	UG/KG-DW	10	1	8260	06/10	23674
ET CHEM							
CHEMICAL							
Cyanide, Total	5.4	MG/KG-DW	1.0	1	9012	06/20	23187
PHYSICAL							
Percent Solids	84	%	4	1	160.3	06/11	22952

OMMENTS

01 Results for 2-hexanone, Acetone, 2-butanone, vinyl acetate, 1,2,3-trichloropropane should be considered estimates due to poor spike and or QCRS recovery.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

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Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

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FL-DEP CompQAP: 900359G

ab ID: 96 0006241

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 The method blank associated with this sample contained 1,1,2,2-tetrachloroethane. Sample results are reported without blank correction.

03 Antimony result should be considered an estimate due to poor matrix spike recovery

04 Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.

00177

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ust Proj: TF0320.014
ample Desc: 960607-CO-12-SL0002 MS/MSD(0.5-1.5), Birmingham, AL

ab ID: 96 0006242

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Date Received: 06/08/96 11:30
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.0	1	6010	06/13	23006
Arsenic, Total	220	MG/KG-DW	1.0	10	6020	06/13	23019
Barium, Total	170	MG/KG-DW	1.0	1	6010	06/13	23006
Beryllium, Total	3.7	MG/KG-DW	0.50	1	6010	06/13	23006
Cadmium, Total	BDL	MG/KG-DW	0.50	1	6010	06/13	23006
Chromium, Total	92	MG/KG-DW	1.0	1	6010	06/13	23006
Copper, Total	11	MG/KG-DW	2.5	1	6010	06/13	23006
Mercury, Total	0.048	MG/KG-DW	0.033	1	7471	06/14	23034
Nickel, Total	18	MG/KG-DW	4.0	1	6010	06/13	23006
Lead, Total	120	MG/KG-DW	5.0	1	6010	06/13	23006
Antimony, Total	BDL	MG/KG-DW	5.0	1	6010	06/13	23006
Selenium, Total	BDL	MG/KG-DW	50	1	6010	06/13	23006
Thallium, Total	BDL	MG/KG-DW	50	1	6010	06/13	23006
Zinc, Total	65	MG/KG-DW	2.0	1	6010	06/13	23006
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
1,2-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
1,3-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
1,4-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2,4,5-Trichlorophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2,4,6-Trichlorophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,4-Dinitrophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2,4-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,6-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,6-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/08	23523
2-Chloronaphthalene	BDL	UG/KG-DW	330	1	8270	07/08	23523

82100
ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
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Chris Given
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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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ust Proj: TF0320.014
ample Desc: 960607-CO-12-SL0002 MS/MSD(0.5-1.5), Birmingham, AL

ab ID: 96 0006242

Date of Report: 07/26/96
C-of-C Number: C14749
Date Collected: 06/07/96 11:00
Collected By: CST
Date Received: 06/08/96 11:30
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
2-Methylnaphthalene	1100	UG/KG-DW	330	1	8270	07/08	23523
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	330	1	8270	07/08	23523
2-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2-Nitrophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	330	1	8270	07/08	23523
3-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/08	23523
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/08	23523
4-Chloro-3-methylphenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
4-Chloroaniline	BDL	UG/KG-DW	660	1	8270	07/08	23523
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/08	23523
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	330	1	8270	07/08	23523
4-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/08	23523
4-Nitrophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
Acenaphthene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Acenaphthylene	1600	UG/KG-DW	330	1	8270	07/08	23523
Anthracene	570	UG/KG-DW	330	1	8270	07/08	23523
Benzyl alcohol	BDL	UG/KG-DW	330	1	8270	07/08	23523
Benzo(a)anthracene	2500	UG/KG-DW	330	1	8270	07/08	23523
Benzo(a)pyrene	7800	UG/KG-DW	330	1	8270	07/08	23523
Benzo (b) fluoranthene	7800	UG/KG-DW	330	1	8270	07/08	23523
Benzo (k) fluoranthene	5300	UG/KG-DW	330	1	8270	07/08	23523
Benzo (g,h,i) perylene	4700	UG/KG-DW	330	1	8270	07/08	23523
Chrysene	4600	UG/KG-DW	330	1	8270	07/08	23523
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	330	1	8270	07/08	23523
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	330	1	8270	07/08	23523
Dibenzofuran	BDL	UG/KG-DW	330	1	8270	07/08	23523
Dibenzo (a,h) anthracene	2000	UG/KG-DW	330	1	8270	07/08	23523

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

Attention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
Cust Proj: TF0320.014
Sample Desc: 960607-CO-12-SL0002 MS/MSD(0.5-1.5), Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14749
Date Collected: 06/07/96 11:00
Collected By: CST
Date Received: 06/08/96 11:30
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

Lab ID: 96 0006242

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2,4-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
Diethylphthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,4-Dimethylphenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
Dimethylphthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
n-Nitrosodimethylamine	BDL	UG/KG-DW	330	1	8270	07/08	23523
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	330	1	8270	07/08	23523
Di-n-octylphthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	330	1	8270	07/08	23523
Fluorene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Fluoranthene	2600	UG/KG-DW	330	1	8270	07/08	23523
Hexachlorocyclopentadiene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Hexachlorobutadiene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Hexachlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Hexachloroethane	BDL	UG/KG-DW	330	1	8270	07/08	23523
Indeno(1,2,3-cd)pyrene	5500	UG/KG-DW	330	1	8270	07/08	23523
Isophorone	BDL	UG/KG-DW	330	1	8270	07/08	23523
Naphthalene	6400	UG/KG-DW	330	1	8270	07/08	23523
Nitrobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Pentachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
Phenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
Phenanthrene	1200	UG/KG-DW	330	1	8270	07/08	23523
Pyrene	7000	UG/KG-DW	330	1	8270	07/08	23523
Pyridine	BDL	UG/KG-DW	330	1	8270	07/08	23523
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.50	1	8260	06/10	23674
1,1,2-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,1-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674

0001180

Note 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

Distribution of Report:
Charles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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Suite 115
Tampa FL 33618

ust Proj: TF0320.014
ample Desc: 960607-CO-12-SL0002 MS/MSD(0.5-1.5), Birmingham, AL

ab ID: 96 0006242

Date of Report: 07/26/96
C-of-C Number: C14749
Date Collected: 06/07/96 11:00
Collected By: CST
Date Received: 06/08/96 11:30
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,2,3-Trichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,2-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,2-Dichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	10	1	8260	06/10	23674
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	50	1	8260	06/10	23674
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	10	1	8260	06/10	23674
2-Hexanone	BDL	UG/KG-DW	50	1	8260	06/10	23674
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	50	1	8260	06/10	23674
Acetone	130	UG/KG-DW	50	1	8260	06/10	23674
Acrolein	BDL	UG/KG-DW	200	1	8260	06/10	23674
Acrylonitrile	BDL	UG/KG-DW	100	1	8260	06/10	23674
Benzene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Bromodichloromethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Bromoform	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Bromomethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Carbon tetrachloride	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Chloroform	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Chlorobenzene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Chloroethane	BDL	UG/KG-DW	10	1	8260	06/10	23674
Chloromethane	BDL	UG/KG-DW	10	1	8260	06/10	23674
Carbon disulfide	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
cis-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Dichlorodifluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Dibromochloromethane	BDL	UG/KG-DW	10	1	8260	06/10	23674
Dibromomethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Ethylbenzene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Ethyl methacrylate	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Iodomethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674

000181

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
Suite 115
Tampa FL 33618
ast Proj: TF0320.014
mple Desc: 960607-CO-12-SL0002 MS/MSD(0.5-1.5), Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14749
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Date Received: 06/08/96 11:30
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006242

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Methylene chloride	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
o-Xylene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Styrene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Trichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Trichlorofluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Tetrachloroethene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Toluene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
trans-1,2-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
trans-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Vinyl acetate	BDL	UG/KG-DW	10	1	8260	06/10	23674
Vinyl chloride	BDL	UG/KG-DW	10	1	8260	06/10	23674
T CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.0	1	9012	06/20	23187
PHYSICAL							
Percent Solids	85	%	4	1	160.3	06/11	22952

0006242

OMMENTS

01 Results for 2-hexanone, Acetone, 2-butanone, vinyl acetate, 1,2,3-trichloropropane should be considered estimates due to poor spike and or QCRS recovery.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.

03 Antimony result should be considered an estimate due to poor matrix spike recovery

04 The method blank associated with this sample contained 1,1,2,2-tetrachloroethane. Sample results are reported without blank correction.

0003

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

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Environmental Testing Services

ANALYSIS REPORT

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ast Proj: TF0320.014
ample Desc: 960607-CO-12-SL9002, Birmingham, AL

Date of Report: 07/26/96
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Date Collected: 06/07/96 00:00
Collected By: CST
Date Received: 06/08/96 11:30
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006243

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.0	1	6010	06/13	23006
Arsenic, Total	89	MG/KG-DW	1.0	10	6020	06/13	23019
Barium, Total	78	MG/KG-DW	1.0	1	6010	06/13	23006
Beryllium, Total	1.4	MG/KG-DW	0.50	1	6010	06/13	23006
Cadmium, Total	BDL	MG/KG-DW	0.50	1	6010	06/13	23006
Chromium, Total	29	MG/KG-DW	1.0	1	6010	06/13	23006
Copper, Total	5.8	MG/KG-DW	2.5	1	6010	06/13	23006
Mercury, Total	0.065	MG/KG-DW	0.033	1	7471	06/14	23034
Nickel, Total	7.1	MG/KG-DW	4.0	1	6010	06/13	23006
Lead, Total	30	MG/KG-DW	5.0	1	6010	06/13	23006
Antimony, Total	BDL	MG/KG-DW	5.0	1	6010	06/13	23006
Selenium, Total	BDL	MG/KG-DW	50	1	6010	06/13	23006
Thallium, Total	BDL	MG/KG-DW	50	1	6010	06/13	23006
Zinc, Total	28	MG/KG-DW	2.0	1	6010	06/13	23006
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
1,2-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
1,3-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
1,4-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2,4,5-Trichlorophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2,4,6-Trichlorophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,4-Dinitrophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2,4-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,6-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,6-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/08	23523
2-Chloronaphthalene	BDL	UG/KG-DW	330	1	8270	07/08	23523

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ust Proj: TF0320.014
ample Desc: 960607-CO-12-SL9002, Birmingham, AL

ab ID: 96 0006243

Date of Report: 07/26/96
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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
2-Methylnaphthalene	400	UG/KG-DW	330	1	8270	07/08	23523
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	330	1	8270	07/08	23523
2-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2-Nitrophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	330	1	8270	07/08	23523
3-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/08	23523
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/08	23523
4-Chloro-3-methylphenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
4-Chloroaniline	BDL	UG/KG-DW	660	1	8270	07/08	23523
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/08	23523
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	330	1	8270	07/08	23523
4-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/08	23523
4-Nitrophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
Acenaphthene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Acenaphthylene	670	UG/KG-DW	330	1	8270	07/08	23523
Anthracene	340	UG/KG-DW	330	1	8270	07/08	23523
Benzyl alcohol	BDL	UG/KG-DW	330	1	8270	07/08	23523
Benzo(a)anthracene	2000	UG/KG-DW	330	1	8270	07/08	23523
Benzo(a)pyrene	3400	UG/KG-DW	330	1	8270	07/08	23523
Benzo (b) fluoranthene	2900	UG/KG-DW	330	1	8270	07/08	23523
Benzo (k) fluoranthene	3600	UG/KG-DW	330	1	8270	07/08	23523
Benzo (g,h,i) perylene	1800	UG/KG-DW	330	1	8270	07/08	23523
Chrysene	3100	UG/KG-DW	330	1	8270	07/08	23523
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	330	1	8270	07/08	23523
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	330	1	8270	07/08	23523
Dibenzofuran	BDL	UG/KG-DW	330	1	8270	07/08	23523
Dibenzo (a,h) anthracene	1100	UG/KG-DW	330	1	8270	07/08	23523

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.stribution of Report:
iarles A. Jones - Sloss Industries

Respectfully Submitted
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Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ast Proj: TF0320.014
ample Desc: 960607-CO-12-SL9002, Birmingham, AL

ab ID: 96 0006243

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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	1700	1	8270	07/08	23523
2,4-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
Diethylphthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
2,4-Dimethylphenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
Dimethylphthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
n-Nitrosodimethylamine	BDL	UG/KG-DW	330	1	8270	07/08	23523
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	330	1	8270	07/08	23523
Di-n-octylphthalate	BDL	UG/KG-DW	330	1	8270	07/08	23523
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	330	1	8270	07/08	23523
Fluorene	330	UG/KG-DW	330	1	8270	07/08	23523
Fluoranthene	2700	UG/KG-DW	330	1	8270	07/08	23523
Hexachlorocyclopentadiene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Hexachlorobutadiene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Hexachlorobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Hexachloroethane	BDL	UG/KG-DW	330	1	8270	07/08	23523
Indeno(1,2,3-cd)pyrene	2300	UG/KG-DW	330	1	8270	07/08	23523
Isophorone	BDL	UG/KG-DW	330	1	8270	07/08	23523
Naphthalene	1700	UG/KG-DW	330	1	8270	07/08	23523
Nitrobenzene	BDL	UG/KG-DW	330	1	8270	07/08	23523
Pentachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/08	23523
Phenol	BDL	UG/KG-DW	330	1	8270	07/08	23523
Phenanthrene	800	UG/KG-DW	330	1	8270	07/08	23523
Pyrene	4700	UG/KG-DW	330	1	8270	07/08	23523
Pyridine	BDL	UG/KG-DW	330	1	8270	07/08	23523
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.50	1	8260	06/10	23674
1,1,2-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,1-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
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Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,2,3-Trichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,2-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,2-Dichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	10	1	8260	06/10	23674
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	50	1	8260	06/10	23674
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	10	1	8260	06/10	23674
2-Hexanone	BDL	UG/KG-DW	50	1	8260	06/10	23674
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	50	1	8260	06/10	23674
Acetone	120	UG/KG-DW	50	1	8260	06/10	23674
Acrolein	BDL	UG/KG-DW	200	1	8260	06/10	23674
Acrylonitrile	BDL	UG/KG-DW	100	1	8260	06/10	23674
Benzene	9.4	UG/KG-DW	5.0	1	8260	06/10	23674
Bromodichloromethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Bromoform	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Bromomethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Carbon tetrachloride	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Chloroform	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Chlorobenzene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Chloroethane	BDL	UG/KG-DW	10	1	8260	06/10	23674
Chloromethane	BDL	UG/KG-DW	10	1	8260	06/10	23674
Carbon disulfide	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
cis-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Dichlorodifluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Dibromochloromethane	BDL	UG/KG-DW	10	1	8260	06/10	23674
Dibromomethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Ethylbenzene	8.4	UG/KG-DW	5.0	1	8260	06/10	23674
Ethyl methacrylate	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Iodomethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674

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Unit followed by 'DW' signifies Results in Dry Weight.

.stribution of Report:
iarles A. Jones - Sloss Industries

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

:tention: Kathy Thalman
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ıst Proj: TF0320.014
ımple Desc: 960607-CO-12-SL9002, Birmingham, AL

Date of Report: 07/26/96
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ıb ID: 96 0006243

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Methylene chloride	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
o-Xylene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Styrene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Trichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Trichlorofluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Tetrachloroethene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Toluene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
trans-1,2-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
trans-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/10	23674
Vinyl acetate	BDL	UG/KG-DW	10	1	8260	06/10	23674
Vinyl chloride	BDL	UG/KG-DW	10	1	8260	06/10	23674
PT CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.0	1	9012	06/20	23187
PHYSICAL							
Percent Solids	85	%	4	1	160.3	06/11	22952

OMMENTS

01 Results for 2-hexanone, Acetone, 2-butanone, vinyl acetate, 1,2,3-trichloropropane should be considered estimates due to poor spike and or QCRS recovery.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

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FL-DEP CompQAP: 900359G

		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.

03 Antimony result should be considered an estimate due to poor matrix spike recovery

04 The method blank associated with this sample contained 1,1,2,2-tetrachloroethane. Sample results are reported without blank correction.

68000

te 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
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ANALYSIS REPORT

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Date of Report: 07/26/96
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FL-DHRS Cert. No: E84254/84453

ample Desc: 960608-CO-01A-TB0005, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006336

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
RGANIC							
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/19	23416
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/19	23416
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/19	23416
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/19	23416
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/19	23416
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/19	23416
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/19	23416
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/19	23416
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/19	23416
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/19	23416
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/19	23416
2-Hexanone	BDL	UG/L	50	1	8260	06/19	23416
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/19	23416
Acetone	BDL	UG/L	50	1	8260	06/19	23416
Acrolein	BDL	UG/L	100	1	8260	06/19	23416
Acrylonitrile	BDL	UG/L	100	1	8260	06/19	23416
Benzene	BDL	UG/L	5	1	8260	06/19	23416
Bromodichloromethane	BDL	UG/L	5	1	8260	06/19	23416
Bromoform	BDL	UG/L	5	1	8260	06/19	23416
Bromomethane	BDL	UG/L	10	1	8260	06/19	23416
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/19	23416
Chloroform	BDL	UG/L	5	1	8260	06/19	23416
Chlorobenzene	BDL	UG/L	5	1	8260	06/19	23416
Chloroethane	BDL	UG/L	10	1	8260	06/19	23416
Chloromethane	BDL	UG/L	10	1	8260	06/19	23416
Carbon disulfide	BDL	UG/L	5	1	8260	06/19	23416

0006336

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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ANALYSIS REPORT

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ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960608-CO-01A-TB0005, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006336

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/19	23416
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/19	23416
Dibromochloromethane	BDL	UG/L	10	1	8260	06/19	23416
Dibromomethane	BDL	UG/L	5	1	8260	06/19	23416
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/19	23416
Ethylbenzene	BDL	UG/L	5	1	8260	06/19	23416
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/19	23416
Iodomethane	BDL	UG/L	5	1	8260	06/19	23416
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/19	23416
Methylene chloride	BDL	UG/L	5	1	8260	06/19	23416
o-Xylene	BDL	UG/L	.5	1	8260	06/19	23416
Styrene	BDL	UG/L	5	1	8260	06/19	23416
Trichloroethene	BDL	UG/L	.5	1	8260	06/19	23416
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/19	23416
Tetrachloroethene	BDL	UG/L	5	1	8260	06/19	23416
Toluene	BDL	UG/L	.5	1	8260	06/19	23416
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/19	23416
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/19	23416
Vinyl acetate	BDL	UG/L	10	1	8260	06/19	23416
Vinyl chloride	BDL	UG/L	10	1	8260	06/19	23416

000191

ote 'BDL' = Below Detection Limit

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Tampa FL 33618

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ample Desc: 960608-CO-01A-SL0001 (0.-0.1), Birmingham, AL

ab ID: 96 0006337

Date of Report: 07/26/96
C-of-C Number: C14775
Date Collected: 06/08/96 13:15
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.0	1	6010	06/17	23063
Arsenic, Total	14	MG/KG-DW	1.0	10	6020	06/24	23175
Barium, Total	25	MG/KG-DW	1.0	1	6010	06/17	23063
Beryllium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Cadmium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Chromium, Total	1.3	MG/KG-DW	1.0	1	6010	06/17	23063
Copper, Total	7.3	MG/KG-DW	2.5	1	6010	06/17	23063
Mercury, Total	BDL	MG/KG-DW	0.033	1	7471	06/14	23034
Nickel, Total	BDL	MG/KG-DW	4.0	1	6010	06/17	23063
Lead, Total	BDL	MG/KG-DW	5.0	1	6010	06/17	23063
Antimony, Total	BDL	MG/KG-DW	5.0	1	6010	06/17	23063
Selenium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Thallium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Zinc, Total	28	MG/KG-DW	2.0	1	6010	06/17	23063
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,2-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,3-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,4-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4,5-Trichlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4,6-Trichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,4-Dinitrophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,6-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,6-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Chloronaphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

ust Proj: TF0320.014
ample Desc: 960608-CO-01A-SL0001 (0.-0.1), Birmingham, AL

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Methylnaphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2-Nitrophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
3-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Chloro-3-methylphenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Chloroaniline	BDL	UG/KG-DW	660	1	8270	07/11	23602
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4-Nitrophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
Acenaphthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Acenaphthylene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzyl alcohol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo(a)anthracene	380	UG/KG-DW	330	1	8270	07/11	23602
Benzo(a)pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (b) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (k) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (g,h,i) perylene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Chrysene	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dibenzofuran	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602

000193

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ab ID: 96 0006337

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	1800	UG/KG-DW	330	1	8270	07/11	23602
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Diethylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,4-Dimethylphenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dimethylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
n-Nitrosodimethylamine	BDL	UG/KG-DW	330	1	8270	07/11	23602
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	330	1	8270	07/11	23602
Di-n-octylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	330	1	8270	07/11	23602
Fluorene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Fluoranthene	1100	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorocyclopentadiene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorobutadiene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachloroethane	BDL	UG/KG-DW	330	1	8270	07/11	23602
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Isophorone	BDL	UG/KG-DW	330	1	8270	07/11	23602
Naphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Nitrobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Pentachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
Phenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Phenanthrene	540	UG/KG-DW	330	1	8270	07/11	23602
Pyrene	1100	UG/KG-DW	330	1	8270	07/11	23602
Pyridine	BDL	UG/KG-DW	330	1	8270	07/11	23602
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.50	1	8260	06/12	23675
1,1,2-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
1,1-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/12	23675

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

tention: Kathy Thalman
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Tampa FL 33618

st Proj: TF0320.014
mple Desc: 960608-CO-01A-SL0001 (0.-0.1), Birmingham, AL

b ID: 96 0006337

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
1,2,3-Trichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
1,2-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
1,2-Dichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	10	1	8260	06/12	23675
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	50	1	8260	06/12	23675
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	10	1	8260	06/12	23675
2-Hexanone	BDL	UG/KG-DW	50	1	8260	06/12	23675
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	50	1	8260	06/12	23675
Acetone	BDL	UG/KG-DW	50	1	8260	06/12	23675
Acrolein	BDL	UG/KG-DW	200	1	8260	06/12	23675
Acrylonitrile	BDL	UG/KG-DW	100	1	8260	06/12	23675
Benzene	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Bromodichloromethane	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Bromoform	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Bromomethane	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Carbon tetrachloride	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Chloroform	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Chlorobenzene	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Chloroethane	BDL	UG/KG-DW	10	1	8260	06/12	23675
Chloromethane	BDL	UG/KG-DW	10	1	8260	06/12	23675
Carbon disulfide	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
cis-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Dichlorodifluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Dibromochloromethane	BDL	UG/KG-DW	10	1	8260	06/12	23675
Dibromomethane	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Ethylbenzene	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Ethyl methacrylate	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Iodomethane	BDL	UG/KG-DW	5.0	1	8260	06/12	23675

te 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
arles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Methylene chloride	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
o-Xylene	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Styrene	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Trichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Trichlorofluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Tetrachloroethene	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Toluene	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
trans-1,2-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
trans-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/12	23675
Vinyl acetate	BDL	UG/KG-DW	10	1	8260	06/12	23675
Vinyl chloride	BDL	UG/KG-DW	10	1	8260	06/12	23675
T CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.0	1	9012	06/20	23187
PHYSICAL							
Percent Solids	81	%	4	1	160.3	06/13	23024

MMENTS

01 Results for 1,2,3-trichloropropane, acetone, 1,4-dichloro-2-butene, 2-hexanone and iodomethane should be considered estimates due to QCRS recovery problems.

te 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

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		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
02	Results for 1,1,1-TCA, 1,1,2,2-TCA, 1,1-DCA, 2-butanone, 4-methyl-2-pentanone, o-xylene, Acrylonitrile, bromoform, carbon tetrachloride, chloroform, chloroethane,							
03	dichlorofluoromethane, dibromochloromethane, ethyl benzene, ethylmethacrylate, styrene, trichlorofluoromethane, tetrachloroethene and vinyl acetate are estimates due to poor spike							
04	Results for semivolatile organics by method 8270 should be considered estimates due to matrix spike recovery outside the project limits. Surrogate recoveries were in control							
05	Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.							

000197

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ANALYSIS REPORT

tention: Kathy Thalman
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Tampa FL 33618

st Proj: TF0320.014
mple Desc: 960608-CO-01A-SL0002 MS/MSD (0.-0.1), Birmingham, AL

b ID: 96 0006338

Date of Report: 07/26/96
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Date Collected: 06/08/96 13:30
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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
TALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.0	1	6010	06/17	23063
Arsenic, Total	10	MG/KG-DW	1.0	10	6020	06/21	23174
Barium, Total	20	MG/KG-DW	1.0	1	6010	06/17	23063
Beryllium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Cadmium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Chromium, Total	1.9	MG/KG-DW	1.0	1	6010	06/17	23063
Copper, Total	6.2	MG/KG-DW	2.5	1	6010	06/17	23063
Mercury, Total	BDL	MG/KG-DW	0.033	1	7471	06/14	23034
Nickel, Total	4.1	MG/KG-DW	4.0	1	6010	06/17	23063
Lead, Total	7.6	MG/KG-DW	5.0	1	6010	06/17	23063
Antimony, Total	BDL	MG/KG-DW	5.0	1	6010	06/17	23063
Selenium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Thallium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Zinc, Total	17	MG/KG-DW	2.0	1	6010	06/17	23063
GANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,2-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,3-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,4-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4,5-Trichlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4,6-Trichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,4-Dinitrophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,6-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,6-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Chloronaphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Methylnaphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2-Nitrophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
3-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Chloro-3-methylphenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Chloroaniline	BDL	UG/KG-DW	660	1	8270	07/11	23602
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4-Nitrophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
Acenaphthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Acenaphthylene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzyl alcohol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo(a)anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo(a)pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (b) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (k) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (g,h,i) perylene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Chrysene	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dibenzofuran	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602

te 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
arles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

tention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
st Proj: TF0320.014
mple Desc: 960608-CO-01A-SL0002 MS/MSD (0.-0.1), Birmingham, AL

b ID: 96 0006338

Date of Report: 07/26/96
C-of-C Number: C14775
Date Collected: 06/08/96 13:30
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	450	UG/KG-DW	330	1	8270	07/11	23602
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Diethylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,4-Dimethylphenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dimethylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
n-Nitrosodimethylamine	BDL	UG/KG-DW	330	1	8270	07/11	23602
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	330	1	8270	07/11	23602
Di-n-octylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	330	1	8270	07/11	23602
Fluorene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorocyclopentadiene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorobutadiene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachloroethane	BDL	UG/KG-DW	330	1	8270	07/11	23602
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Isophorone	BDL	UG/KG-DW	330	1	8270	07/11	23602
Naphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Nitrobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Pentachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
Phenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Phenanthrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Pyridine	BDL	UG/KG-DW	330	1	8270	07/11	23602
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.50	1	8260	06/13	23675
1,1,2-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,1-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675

000200

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,2,3-Trichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,2-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,2-Dichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	10	1	8260	06/13	23675
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	50	1	8260	06/13	23675
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	10	1	8260	06/13	23675
2-Hexanone	BDL	UG/KG-DW	50	1	8260	06/13	23675
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	50	1	8260	06/13	23675
Acetone	BDL	UG/KG-DW	50	1	8260	06/13	23675
Acrolein	BDL	UG/KG-DW	200	1	8260	06/13	23675
Acrylonitrile	BDL	UG/KG-DW	100	1	8260	06/13	23675
Benzene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Bromodichloromethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Bromoform	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Bromomethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Carbon tetrachloride	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Chloroform	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Chlorobenzene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Chloroethane	BDL	UG/KG-DW	10	1	8260	06/13	23675
Chloromethane	BDL	UG/KG-DW	10	1	8260	06/13	23675
Carbon disulfide	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
cis-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Dichlorodifluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Dibromochloromethane	BDL	UG/KG-DW	10	1	8260	06/13	23675
Dibromomethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Ethylbenzene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Ethyl methacrylate	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Iodomethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675

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stribution of Report:
arles A. Jones - Sloss Industries

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

tention: Kathy Thalman
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st Proj: TF0320.014
mple Desc: 960608-CO-01A-SL0002 MS/MSD (0.-0.1), Birmingham, AL

b ID: 96 0006338

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Methylene chloride	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
o-Xylene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Styrene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Trichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Trichlorofluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Tetrachloroethene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Toluene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
trans-1,2-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
trans-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Vinyl acetate	BDL	UG/KG-DW	10	1	8260	06/13	23675
Vinyl chloride	BDL	UG/KG-DW	10	1	8260	06/13	23675
T CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.0	1	9012	06/20	23187
PHYSICAL							
Percent Solids	80	%	4	1	160.3	06/13	23024

MMENTS

01 Results for 1,2,3-trichloropropane, acetone, 1,4-dichloro-2-butene, 2-hexanone and iodomethane should be considered estimates due to QCRS recovery problems.

te 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

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		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
02	Results for 1,1,1-TCA, 1,1,2,2-TCA, 1,1-DCA, 2-butanone, 4-methyl-2-pentanone, o-xylene, Acrylonitrile, bromoform, carbon tetrachloride, chloroform, chloroethane,							
03	dichlorofluoromethane, dibromochloromethane, ethyl benzene, ethylmethacrylate, styrene, trichlorofluoromethane, tetrachloroethene and vinyl acetate are estimates due to poor spike							
04	Results for semivolatile organics by method 8270 should be considered estimates due to matrix spike recovery outside the project limits. Surrogate recoveries were in control							
05	Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.							

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ANALYSIS REPORT

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FL-DEP CompQAP: 900359G

ab ID: 96 0006339

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.0	1	6010	06/17	23063
Arsenic, Total	9.7	MG/KG-DW	1.0	10	6020	06/21	23174
Barium, Total	18	MG/KG-DW	1.0	1	6010	06/17	23063
Beryllium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Cadmium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Chromium, Total	BDL	MG/KG-DW	1.0	1	6010	06/17	23063
Copper, Total	5.1	MG/KG-DW	2.5	1	6010	06/17	23063
Mercury, Total	BDL	MG/KG-DW	0.033	1	7471	06/14	23034
Nickel, Total	BDL	MG/KG-DW	4.0	1	6010	06/17	23063
Lead, Total	BDL	MG/KG-DW	5.0	1	6010	06/17	23063
Antimony, Total	BDL	MG/KG-DW	5.0	1	6010	06/17	23063
Selenium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Thallium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Zinc, Total	29	MG/KG-DW	2.0	1	6010	06/17	23063
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,2-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,3-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,4-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4,5-Trichlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4,6-Trichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,4-Dinitrophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,6-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,6-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Chloronaphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602

ote 'BDL' = Below Detection Limit
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istribution of Report:
harles A. Jones - Sloss Industries

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Methylnaphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2-Nitrophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
3-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Chloro-3-methylphenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Chloroaniline	BDL	UG/KG-DW	660	1	8270	07/11	23602
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4-Nitrophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
Acenaphthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Acenaphthylene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzyl alcohol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo(a)anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo(a)pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (b) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (k) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (g,h,i) perylene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Chrysene	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dibenzofuran	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	1700	UG/KG-DW	330	1	8270	07/11	23602
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Diethylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,4-Dimethylphenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dimethylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
n-Nitrosodimethylamine	BDL	UG/KG-DW	330	1	8270	07/11	23602
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	330	1	8270	07/11	23602
Di-n-octylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	330	1	8270	07/11	23602
Fluorene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Fluoranthene	390	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorocyclopentadiene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorobutadiene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachloroethane	BDL	UG/KG-DW	330	1	8270	07/11	23602
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Isophorone	BDL	UG/KG-DW	330	1	8270	07/11	23602
Naphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Nitrobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Pentachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
Phenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Phenanthrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Pyridine	BDL	UG/KG-DW	330	1	8270	07/11	23602
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.50	1	8260	06/13	23675
1,1,2-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,1-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675

te 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
arles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
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Tampa FL 33618

ust Proj: TF0320.014
ample Desc: 960608-CO-01A-SL0003 (0.-0.1), Birmingham, AL

ab ID: 96 0006339

Date of Report: 07/26/96
C-of-C Number: C14775
Date Collected: 06/08/96 13:45
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,2,3-Trichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,2-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,2-Dichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	10	1	8260	06/13	23675
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	50	1	8260	06/13	23675
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	10	1	8260	06/13	23675
2-Hexanone	BDL	UG/KG-DW	50	1	8260	06/13	23675
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	50	1	8260	06/13	23675
Acetone	BDL	UG/KG-DW	50	1	8260	06/13	23675
Acrolein	BDL	UG/KG-DW	200	1	8260	06/13	23675
Acrylonitrile	BDL	UG/KG-DW	100	1	8260	06/13	23675
Benzene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Bromodichloromethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Bromoform	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Bromomethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Carbon tetrachloride	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Chloroform	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Chlorobenzene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Chloroethane	BDL	UG/KG-DW	10	1	8260	06/13	23675
Chloromethane	BDL	UG/KG-DW	10	1	8260	06/13	23675
Carbon disulfide	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
cis-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Dichlorodifluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Dibromochloromethane	BDL	UG/KG-DW	10	1	8260	06/13	23675
Dibromomethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Ethylbenzene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Ethyl methacrylate	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Iodomethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675

202000

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mple Desc: 960608-CO-01A-SL0003 (0.-0.1), Birmingham, AL

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ab ID: 96 0006339

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Methylene chloride	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
o-Xylene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Styrene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Trichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Trichlorofluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Tetrachloroethene	6.6	UG/KG-DW	5.0	1	8260	06/13	23675
Toluene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
trans-1,2-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
trans-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
Vinyl acetate	BDL	UG/KG-DW	10	1	8260	06/13	23675
Vinyl chloride	BDL	UG/KG-DW	10	1	8260	06/13	23675
T CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.0	1	9012	06/20	23187
PHYSICAL							
Percent Solids	82	%	4	1	160.3	06/13	23024

OMMENTS

01 Results for 1,2,3-trichloropropane, acetone, 1,4-dichloro-2-butene, 2-hexanone and iodomethane should be considered estimates due to QCRS recovery problems.

ote 'BDL' = Below Detection Limit
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		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
02	Results for 1,1,1-TCA, 1,1,2,2-TCA, 1,1-DCA, 2-butanone, 4-methyl-2-pentanone, o-xylene, Acrylonitrile, bromoform, carbon tetrachloride, chloroform, chloroethane,							
03	dichlorofluoromethane, dibromochloromethane, ethyl benzene, ethylmethacrylate, styrene, trichlorofluoromethane, tetrachloroethene and vinyl acetate are estimates due to poor spike							
04	Results for semivolatile organics by method 8270 should be considered estimates due to matrix spike recovery outside the project limits. Surrogate recoveries were in control							
05	Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.							

0006339

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ab ID: 96 0006340

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.0	1	6010	06/17	23063
Arsenic, Total	9.3	MG/KG-DW	1.0	10	6020	06/21	23174
Barium, Total	30	MG/KG-DW	1.0	1	6010	06/17	23063
Beryllium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Cadmium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Chromium, Total	4.0	MG/KG-DW	1.0	1	6010	06/17	23063
Copper, Total	15	MG/KG-DW	2.5	1	6010	06/17	23063
Mercury, Total	BDL	MG/KG-DW	0.033	1	7471	06/14	23034
Nickel, Total	6.8	MG/KG-DW	4.0	1	6010	06/17	23063
Lead, Total	5.9	MG/KG-DW	5.0	1	6010	06/17	23063
Antimony, Total	BDL	MG/KG-DW	5.0	1	6010	06/17	23063
Selenium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Thallium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Zinc, Total	44	MG/KG-DW	2.0	1	6010	06/17	23063
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,2-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,3-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,4-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4,5-Trichlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4,6-Trichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,4-Dinitrophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,6-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,6-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Chloronaphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602

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istribution of Report:
harles A. Jones - Sloss Industries

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Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Methylnaphthalene	460	UG/KG-DW	330	1	8270	07/11	23602
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2-Nitrophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
3-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Chloro-3-methylphenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Chloroaniline	BDL	UG/KG-DW	660	1	8270	07/11	23602
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4-Nitrophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
Acenaphthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Acenaphthylene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Anthracene	410	UG/KG-DW	330	1	8270	07/11	23602
Benzyl alcohol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo(a)anthracene	1200	UG/KG-DW	330	1	8270	07/11	23602
Benzo(a)pyrene	550	UG/KG-DW	330	1	8270	07/11	23602
Benzo (b) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (k) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (g,h,i) perylene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Chrysene	1600	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dibenzofuran	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602

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Respectfully Submitted
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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ab ID: 96 0006340

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Diethylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,4-Dimethylphenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dimethylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
n-Nitrosodimethylamine	BDL	UG/KG-DW	330	1	8270	07/11	23602
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	330	1	8270	07/11	23602
Di-n-octylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	330	1	8270	07/11	23602
Fluorene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Fluoranthene	2000	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorocyclopentadiene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorobutadiene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachloroethane	BDL	UG/KG-DW	330	1	8270	07/11	23602
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Isophorone	BDL	UG/KG-DW	330	1	8270	07/11	23602
Naphthalene	660	UG/KG-DW	330	1	8270	07/11	23602
Nitrobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Pentachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
Phenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Phenanthrene	1800	UG/KG-DW	330	1	8270	07/11	23602
Pyrene	4300	UG/KG-DW	330	1	8270	07/11	23602
Pyridine	BDL	UG/KG-DW	330	1	8270	07/11	23602
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.50	1	8260	06/18	23676
1,1,2-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,1-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676

0002 9

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,2,3-Trichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,2-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,2-Dichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	10	1	8260	06/18	23676
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	50	1	8260	06/18	23676
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	10	1	8260	06/18	23676
2-Hexanone	BDL	UG/KG-DW	50	1	8260	06/18	23676
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	50	1	8260	06/18	23676
Acetone	BDL	UG/KG-DW	50	1	8260	06/18	23676
Acrolein	BDL	UG/KG-DW	200	1	8260	06/18	23676
Acrylonitrile	BDL	UG/KG-DW	100	1	8260	06/18	23676
Benzene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Bromodichloromethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Bromoform	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Bromomethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Carbon tetrachloride	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Chloroform	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Chlorobenzene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Chloroethane	BDL	UG/KG-DW	10	1	8260	06/18	23676
Chloromethane	BDL	UG/KG-DW	10	1	8260	06/18	23676
Carbon disulfide	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
cis-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Dichlorodifluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Dibromochloromethane	BDL	UG/KG-DW	10	1	8260	06/18	23676
Dibromomethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Ethylbenzene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Ethyl methacrylate	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Iodomethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676

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ab ID: 96 0006340

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	6.7	UG/KG-DW	5.0	1	8260	06/18	23676
Methylene chloride	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
o-Xylene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Styrene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Trichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Trichlorofluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Tetrachloroethene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Toluene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
trans-1,2-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
trans-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Vinyl acetate	BDL	UG/KG-DW	10	1	8260	06/18	23676
Vinyl chloride	BDL	UG/KG-DW	10	1	8260	06/18	23676
T CHEM							
CHEMICAL							
Cyanide, Total	1.4	MG/KG-DW	1.0	1	9012	06/20	23187
PHYSICAL							
Percent Solids	84	%	4	1	160.3	06/13	23024

OMMENTS

01 Results for 1,2,3-trichloropropane, acetone, 1,4-dichloro-2-butene, 2-hexanone and iodomethane should be considered estimates due to QCRS recovery problems.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

ast Proj: TF0320.014
mple Desc: 960608-CO-01B-SL0001 (0.-0.1), Birmingham, AL

ab ID: 96 0006340

Date of Report: 07/26/96
C-of-C Number: C14775
Date Collected: 06/08/96 14:15
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Results for 1,1,1-TCA, 1,1,2,2-TCA, 1,1-DCA, 2-butanone, 4-methyl-2-pentanone, o-xylene, Acrylonitrile, bromoform, carbon tetrachloride, chloroform, chloroethane,

03 dichlorofluoromethane, dibromochloromethane, ethyl benzene, ethylmethacrylate, styrene, trichlorofluoromethane, tetrachloroethene and vinyl acetate are estimates due to poor spike

04 Results for semivolatile organics by method 8270 should be considered estimates due to matrix spike recovery outside the project limits. Surrogate recoveries were in control

05 Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.

06 Surrogate recovery indicates a matrix interference. All volatile results should be considered as estimates.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

tention: Kathy Thalman
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Tampa FL 33618
st Proj: TF0320.014
mple Desc: 960608-CO-01B-SL0002 (0.-0.1), Birmingham, AL

b ID: 96 0006341

Date of Report: 07/26/96
C-of-C Number: C14775
Date Collected: 06/08/96 14:30
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
TALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.0	1	6010	06/17	23063
Arsenic, Total	3.5	MG/KG-DW	1.0	10	6020	06/21	23174
Barium, Total	13	MG/KG-DW	1.0	1	6010	06/17	23063
Beryllium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Cadmium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Chromium, Total	BDL	MG/KG-DW	1.0	1	6010	06/17	23063
Copper, Total	3.8	MG/KG-DW	2.5	1	6010	06/17	23063
Mercury, Total	BDL	MG/KG-DW	0.033	1	7471	06/14	23034
Nickel, Total	BDL	MG/KG-DW	4.0	1	6010	06/17	23063
Lead, Total	BDL	MG/KG-DW	5.0	1	6010	06/17	23063
Antimony, Total	BDL	MG/KG-DW	5.0	1	6010	06/17	23063
Selenium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Thallium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Zinc, Total	14	MG/KG-DW	2.0	1	6010	06/17	23063
GANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/10	23602
1,2-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/10	23602
1,3-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/10	23602
1,4-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/10	23602
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/10	23602
2,4,5-Trichlorophenol	BDL	UG/KG-DW	1700	1	8270	07/10	23602
2,4,6-Trichlorophenol	BDL	UG/KG-DW	330	1	8270	07/10	23602
2,4-Dinitrophenol	BDL	UG/KG-DW	1700	1	8270	07/10	23602
2,4-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/10	23602
2,6-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/10	23602
2,6-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/10	23602
2-Chloronaphthalene	BDL	UG/KG-DW	330	1	8270	07/10	23602

te 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
arles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ust Proj: TF0320.014
ample Desc: 960608-CO-01B-SL0002 (0.-0.1), Birmingham, AL

ab ID: 96 0006341

Date of Report: 07/26/96
C-of-C Number: C14775
Date Collected: 06/08/96 14:30
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	330	1	8270	07/10	23602
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	330	1	8270	07/10	23602
2-Methylnaphthalene	BDL	UG/KG-DW	330	1	8270	07/10	23602
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	330	1	8270	07/10	23602
2-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/10	23602
2-Nitrophenol	BDL	UG/KG-DW	330	1	8270	07/10	23602
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	330	1	8270	07/10	23602
3-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/10	23602
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	1700	1	8270	07/10	23602
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/10	23602
4-Chloro-3-methylphenol	BDL	UG/KG-DW	330	1	8270	07/10	23602
4-Chloroaniline	BDL	UG/KG-DW	660	1	8270	07/10	23602
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/10	23602
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	330	1	8270	07/10	23602
4-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/10	23602
4-Nitrophenol	BDL	UG/KG-DW	1700	1	8270	07/10	23602
Acenaphthene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Acenaphthylene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Anthracene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Benzyl alcohol	BDL	UG/KG-DW	330	1	8270	07/10	23602
Benzo(a)anthracene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Benzo(a)pyrene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Benzo (b) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Benzo (k) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Benzo (g,h,i) perylene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Chrysene	BDL	UG/KG-DW	330	1	8270	07/10	23602
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	330	1	8270	07/10	23602
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	330	1	8270	07/10	23602
Dibenzofuran	BDL	UG/KG-DW	330	1	8270	07/10	23602
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	330	1	8270	07/10	23602

00217

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

Attention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Cust Proj: TF0320.014
Sample Desc: 960608-CO-01B-SL0002 (0.-0.1), Birmingham, AL

Lab ID: 96 0006341

Date of Report: 07/26/96
C-of-C Number: C14775
Date Collected: 06/08/96 14:30
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	990	UG/KG-DW	330	1	8270	07/10	23602
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	1700	1	8270	07/10	23602
2,4-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/10	23602
Diethylphthalate	BDL	UG/KG-DW	330	1	8270	07/10	23602
2,4-Dimethylphenol	BDL	UG/KG-DW	330	1	8270	07/10	23602
Dimethylphthalate	BDL	UG/KG-DW	330	1	8270	07/10	23602
n-Nitrosodimethylamine	BDL	UG/KG-DW	330	1	8270	07/10	23602
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	330	1	8270	07/10	23602
Di-n-octylphthalate	BDL	UG/KG-DW	330	1	8270	07/10	23602
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	330	1	8270	07/10	23602
Fluorene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Fluoranthene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Hexachlorocyclopentadiene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Hexachlorobutadiene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Hexachlorobenzene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Hexachloroethane	BDL	UG/KG-DW	330	1	8270	07/10	23602
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Isophorone	BDL	UG/KG-DW	330	1	8270	07/10	23602
Naphthalene	610	UG/KG-DW	330	1	8270	07/10	23602
Nitrobenzene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Pentachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/10	23602
Phenol	BDL	UG/KG-DW	330	1	8270	07/10	23602
Phenanthrene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Pyrene	BDL	UG/KG-DW	330	1	8270	07/10	23602
Pyridine	BDL	UG/KG-DW	330	1	8270	07/10	23602
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.50	1	8260	06/18	23676
1,1,2-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,1-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676

Note 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

Distribution of Report:
Charles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
Suite 115
Tampa FL 33618

ust Proj: TF0320.014
ample Desc: 960608-CO-01B-SL0002 (0.-0.1), Birmingham, AL

ab ID: 96 0006341

Date of Report: 07/26/96
C-of-C Number: C14775
Date Collected: 06/08/96 14:30
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,2,3-Trichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,2-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,2-Dichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	10	1	8260	06/18	23676
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	50	1	8260	06/18	23676
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	10	1	8260	06/18	23676
2-Hexanone	BDL	UG/KG-DW	50	1	8260	06/18	23676
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	50	1	8260	06/18	23676
Acetone	BDL	UG/KG-DW	50	1	8260	06/18	23676
Acrolein	BDL	UG/KG-DW	200	1	8260	06/18	23676
Acrylonitrile	BDL	UG/KG-DW	100	1	8260	06/18	23676
Benzene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Bromodichloromethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Bromoform	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Bromomethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Carbon tetrachloride	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Chloroform	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Chlorobenzene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Chloroethane	BDL	UG/KG-DW	10	1	8260	06/18	23676
Chloromethane	BDL	UG/KG-DW	10	1	8260	06/18	23676
Carbon disulfide	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
cis-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Dichlorodifluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Dibromochloromethane	BDL	UG/KG-DW	10	1	8260	06/18	23676
Dibromomethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Ethylbenzene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Ethyl methacrylate	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Iodomethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
Suite 115
Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960608-CO-01B-SL0002 (0.-0.1), Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14775
Date Collected: 06/08/96 14:30
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006341

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	6.9	UG/KG-DW	5.0	1	8260	06/18	23676
Methylene chloride	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
o-Xylene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Styrene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Trichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Trichlorofluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Tetrachloroethene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Toluene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
trans-1,2-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
trans-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Vinyl acetate	BDL	UG/KG-DW	10	1	8260	06/18	23676
Vinyl chloride	BDL	UG/KG-DW	10	1	8260	06/18	23676
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.0	1	9012	06/20	23187
PHYSICAL							
Percent Solids	86	%	4	1	160.3	06/13	23024

002020

OMMENTS

01 Results for 1,2,3-trichloropropane, acetone, 1,4-dichloro-2-butene, 2-hexanone and iodomethane should be considered estimates due to QCRS recovery problems.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
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FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Results for 1,1,1-TCA, 1,1,2,2-TCA, 1,1-DCA, 2-butanone, 4-methyl-2-pentanone, o-xylene, Acrylonitrile, bromoform, carbon tetrachloride, chloroform, chloroethane,

03 dichlorofluoromethane, dibromochloromethane, ethyl benzene, ethylmethacrylate, styrene, trichlorofluoromethane, tetrachloroethene and vinyl acetate are estimates due to poor spike

04 Results for semivolatile organics by method 8270 should be considered estimates due to matrix spike recovery outside the project limits. Surrogate recoveries were in control

05 Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.

06 Surrogate recovery indicates a matrix interference. All volatile results should be considered as estimates.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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Suite 115
Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960608-CO-01B-SL0003 (0.-0.1), Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14775
Date Collected: 06/08/96 14:45
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006342

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.0	1	6010	06/17	23063
Arsenic, Total	6.2	MG/KG-DW	1.0	10	6020	06/21	23174
Barium, Total	13	MG/KG-DW	1.0	1	6010	06/17	23063
Beryllium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Cadmium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Chromium, Total	3.5	MG/KG-DW	1.0	1	6010	06/17	23063
Copper, Total	4.8	MG/KG-DW	2.5	1	6010	06/17	23063
Mercury, Total	BDL	MG/KG-DW	0.033	1	7471	06/14	23034
Nickel, Total	BDL	MG/KG-DW	4.0	1	6010	06/17	23063
Lead, Total	BDL	MG/KG-DW	5.0	1	6010	06/17	23063
Antimony, Total	BDL	MG/KG-DW	5.0	1	6010	06/17	23063
Selenium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Thallium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Zinc, Total	34	MG/KG-DW	2.0	1	6010	06/17	23063
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,2-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,3-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,4-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4,5-Trichlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4,6-Trichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,4-Dinitrophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,6-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,6-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Chloronaphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602

0006342

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ast Proj: TF0320.014
ample Desc: 960608-CO-01B-SL0003 (0.-0.1), Birmingham, AL

ab ID: 96 0006342

Date of Report: 07/26/96
C-of-C Number: C14775
Date Collected: 06/08/96 14:45
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Methylnaphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2-Nitrophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
3-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Chloro-3-methylphenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Chloroaniline	BDL	UG/KG-DW	660	1	8270	07/11	23602
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4-Nitrophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
Acenaphthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Acenaphthylene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzyl alcohol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo(a)anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo(a)pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (b) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (k) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (g,h,i) perylene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Chrysene	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dibenzofuran	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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ust Proj: TF0320.014
ample Desc: 960608-CO-01B-SL0003 (0.-0.1), Birmingham, AL

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FL-DEP CompQAP: 900359G

ab ID: 96 0006342

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	1300	UG/KG-DW	330	1	8270	07/11	23602
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Diethylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,4-Dimethylphenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dimethylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
n-Nitrosodimethylamine	BDL	UG/KG-DW	330	1	8270	07/11	23602
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	330	1	8270	07/11	23602
Di-n-octylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	330	1	8270	07/11	23602
Fluorene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorocyclopentadiene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorobutadiene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachloroethane	BDL	UG/KG-DW	330	1	8270	07/11	23602
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Isophorone	BDL	UG/KG-DW	330	1	8270	07/11	23602
Naphthalene	550	UG/KG-DW	330	1	8270	07/11	23602
Nitrobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Pentachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
Phenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Phenanthrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Pyridine	BDL	UG/KG-DW	330	1	8270	07/11	23602
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.50	1	8260	06/13	23675
1,1,2-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675
1,1-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/13	23675

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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ast Proj: TF0320.014
ample Desc: 960608-CO-01B-SL0003 (0.-0.1), Birmingham, AL

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,2,3-Trichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,2-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,2-Dichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	10	1	8260	06/18	23676
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	50	1	8260	06/18	23676
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	10	1	8260	06/18	23676
2-Hexanone	BDL	UG/KG-DW	50	1	8260	06/18	23676
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	50	1	8260	06/18	23676
Acetone	BDL	UG/KG-DW	50	1	8260	06/18	23676
Acrolein	BDL	UG/KG-DW	200	1	8260	06/18	23676
Acrylonitrile	BDL	UG/KG-DW	100	1	8260	06/18	23676
Benzene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Bromodichloromethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Bromoform	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Bromomethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Carbon tetrachloride	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Chloroform	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Chlorobenzene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Chloroethane	BDL	UG/KG-DW	10	1	8260	06/18	23676
Chloromethane	BDL	UG/KG-DW	10	1	8260	06/18	23676
Carbon disulfide	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
cis-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Dichlorodifluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Dibromochloromethane	BDL	UG/KG-DW	10	1	8260	06/18	23676
Dibromomethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Ethylbenzene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Ethyl methacrylate	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Iodomethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676

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Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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mple Desc: 960608-CO-01B-SL0003 (0.-0.1), Birmingham, AL

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FL-DEP CompQAP: 900359G

ab ID: 96 0006342

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Methylene chloride	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
o-Xylene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Styrene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Trichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Trichlorofluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Tetrachloroethene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Toluene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
trans-1,2-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
trans-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/18	23676
Vinyl acetate	BDL	UG/KG-DW	10	1	8260	06/18	23676
Vinyl chloride	BDL	UG/KG-DW	10	1	8260	06/18	23676
T CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.0	1	9012	06/20	23187
PHYSICAL							
Percent Solids	84	%	4	1	160.3	06/13	23024

0002960

OMMENTS

01 Results for 1,2,3-trichloropropane, acetone, 1,4-dichloro-2-butene, 2-hexanone and iodomethane should be considered estimates due to QCRS recovery problems.

te 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
arles A. Jones - Sloss Industries

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		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
02	Results for 1,1,1-TCA, 1,1,2,2-TCA, 1,1-DCA, 2-butanone, 4-methyl-2-pentanone, o-xylene, Acrylonitrile, bromoform, carbon tetrachloride, chloroform, chloroethane,							
03	dichlorofluoromethane, dibromochloromethane, ethyl benzene, ethylmethacrylate, styrene, trichlorofluoromethane, tetrachloroethene and vinyl acetate are estimates due to poor spike							
04	Results for semivolatile organics by method 8270 should be considered estimates due to matrix spike recovery outside the project limits. Surrogate recoveries were in control							
05	Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.							
06	Surrogate recovery indicates a matrix interference. All volatile results should be considered as estimates.							

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st Proj: TF0320.014
mple Desc: 960608-CO-01A-SL9002, Birmingham, AL

b ID: 96 0006343

Date of Report: 07/26/96
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Date Collected: 06/08/96 00:00
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Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
TALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.0	1	6010	06/17	23063
Arsenic, Total	7.3	MG/KG-DW	1.0	10	6020	06/21	23174
Barium, Total	18	MG/KG-DW	1.0	1	6010	06/17	23063
Beryllium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Cadmium, Total	BDL	MG/KG-DW	0.50	1	6010	06/17	23063
Chromium, Total	1.3	MG/KG-DW	1.0	1	6010	06/17	23063
Copper, Total	6.1	MG/KG-DW	2.5	1	6010	06/17	23063
Mercury, Total	BDL	MG/KG-DW	0.033	1	7471	06/14	23034
Nickel, Total	6.3	MG/KG-DW	4.0	1	6010	06/17	23063
Lead, Total	BDL	MG/KG-DW	5.0	1	6010	06/17	23063
Antimony, Total	BDL	MG/KG-DW	5.0	1	6010	06/17	23063
Selenium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Thallium, Total	BDL	MG/KG-DW	50	1	6010	06/17	23063
Zinc, Total	19	MG/KG-DW	2.0	1	6010	06/17	23063
GANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,2-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,3-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
1,4-Dichlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4,5-Trichlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4,6-Trichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,4-Dinitrophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,6-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,6-Dinitrotoluene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Chloronaphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602

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Unit followed by 'DW' signifies Results in Dry Weight.

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ab ID: 96 0006343

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Methylnaphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
2-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2-Nitrophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
3-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Chloro-3-methylphenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Chloroaniline	BDL	UG/KG-DW	660	1	8270	07/11	23602
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	330	1	8270	07/11	23602
4-Nitroaniline	BDL	UG/KG-DW	1700	1	8270	07/11	23602
4-Nitrophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
Acenaphthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Acenaphthylene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzyl alcohol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo(a)anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo(a)pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (b) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (k) fluoranthene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Benzo (g,h,i) perylene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Chrysene	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dibenzofuran	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	330	1	8270	07/11	23602

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

·030· NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

Attention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
Cust Proj: TF0320.014
Sample Desc: 960608-CO-01A-SL9002, Birmingham, AL

Lab ID: 96 0006343

Date of Report: 07/26/96
C-of-C Number: C14775
Date Collected: 06/08/96 00:00
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	770	UG/KG-DW	330	1	8270	07/11	23602
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	1700	1	8270	07/11	23602
2,4-Dichlorophenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Diethylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
2,4-Dimethylphenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Dimethylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
n-Nitrosodimethylamine	BDL	UG/KG-DW	330	1	8270	07/11	23602
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	330	1	8270	07/11	23602
Di-n-octylphthalate	BDL	UG/KG-DW	330	1	8270	07/11	23602
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	330	1	8270	07/11	23602
Fluorene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Fluoranthene	620	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorocyclopentadiene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorobutadiene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachlorobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Hexachloroethane	BDL	UG/KG-DW	330	1	8270	07/11	23602
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Isophorone	BDL	UG/KG-DW	330	1	8270	07/11	23602
Naphthalene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Nitrobenzene	BDL	UG/KG-DW	330	1	8270	07/11	23602
Pentachlorophenol	BDL	UG/KG-DW	1700	1	8270	07/11	23602
Phenol	BDL	UG/KG-DW	330	1	8270	07/11	23602
Phenanthrene	410	UG/KG-DW	330	1	8270	07/11	23602
Pyrene	500	UG/KG-DW	330	1	8270	07/11	23602
Pyridine	BDL	UG/KG-DW	330	1	8270	07/11	23602
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.50	1	8260	06/20	23605
1,1,2-Trichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
1,1-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/20	23605

000230

Note 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

Distribution of Report:
Charles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
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ANALYSIS REPORT

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ıb ID: 96 0006343

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
1,2,3-Trichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
1,2-Dichloroethane	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
1,2-Dichloropropane	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	10	1	8260	06/20	23605
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	50	1	8260	06/20	23605
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	10	1	8260	06/20	23605
2-Hexanone	BDL	UG/KG-DW	50	1	8260	06/20	23605
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	50	1	8260	06/20	23605
Acetone	BDL	UG/KG-DW	50	1	8260	06/20	23605
Acrolein	BDL	UG/KG-DW	200	1	8260	06/20	23605
Acrylonitrile	BDL	UG/KG-DW	100	1	8260	06/20	23605
Benzene	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Bromodichloromethane	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Bromoform	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Bromomethane	7.3	UG/KG-DW	5.0	1	8260	06/20	23605
Carbon tetrachloride	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Chloroform	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Chlorobenzene	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Chloroethane	BDL	UG/KG-DW	10	1	8260	06/20	23605
Chloromethane	BDL	UG/KG-DW	10	1	8260	06/20	23605
Carbon disulfide	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
cis-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Dichlorodifluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Dibromochloromethane	BDL	UG/KG-DW	10	1	8260	06/20	23605
Dibromomethane	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Ethylbenzene	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Ethyl methacrylate	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Iodomethane	BDL	UG/KG-DW	5.0	1	8260	06/20	23605

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

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harles A. Jones - Sloss Industries

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Laboratory Director

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ANALYSIS REPORT

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Geraghty & Miller, Tampa, FL
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mple Desc: 960608-CO-01A-SL9002, Birmingham, AL

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ab ID: 96 0006343

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Methylene chloride	76	UG/KG-DW	5.0	1	8260	06/20	23605
o-Xylene	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Styrene	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Trichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Trichlorofluoromethane	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Tetrachloroethene	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Toluene	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
trans-1,2-Dichloroethene	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
trans-1,3-Dichloropropene	BDL	UG/KG-DW	5.0	1	8260	06/20	23605
Vinyl acetate	BDL	UG/KG-DW	10	1	8260	06/20	23605
Vinyl chloride	BDL	UG/KG-DW	10	1	8260	06/20	23605
CT CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.0	1	9012	06/20	23187
PHYSICAL							
Percent Solids	80	%	4	1	160.3	06/13	23024

OMMENTS

01 Volatile surrogate recoveries were out of control on all three surrogates on inital and reanalysis. All results should be considered estimates.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

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ıb ID: 96 0006343

		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
02	Results for semivolatile organics by method 8270 should be considered estimates due to matrix spike recovery outside the project limits. Surrogate recoveries were in control							
03	Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.							
04	Results for Styrene, ethylmethacrylate, chloroethane, 2-hexanone, acetone, iodomethane, 4-methyl-2-pentanone, 2-butanone, 1,4-dichloro-2-butene, (conti.)							
05	1,2,3-trichloropropane, 1,1,2,2-TCA, vinyl acetate, tetrachloroethene and difluorodichloromethane sould be considered estimates due to spike recoveries.							
06	Bromomethane and 1,1,2,2-TCA were detected in the method blank. Sample results were reported without blank correction.							

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ANALYSIS REPORT

tention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
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Date of Report: 07/31/96
C-of-C Number: C14776
Date Collected: 06/08/96 00:00
Collected By: CST
Date Received: 06/11/96 10:00

st Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

mple Desc: 960608-CO-01A-TB0006, Birmingham, AL

FL-DEP CompQAP: 900359G

b ID: 96 0006344

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
GANIC							
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/19	23416
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/19	23416
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/19	23416
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/19	23416
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/19	23416
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/19	23416
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/19	23416
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/19	23416
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/19	23416
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/19	23416
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/19	23416
2-Hexanone	BDL	UG/L	50	1	8260	06/19	23416
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/19	23416
Acetone	81	UG/L	50	1	8260	06/19	23416
Acrolein	BDL	UG/L	100	1	8260	06/19	23416
Acrylonitrile	BDL	UG/L	100	1	8260	06/19	23416
Benzene	BDL	UG/L	5	1	8260	06/19	23416
Bromodichloromethane	BDL	UG/L	5	1	8260	06/19	23416
Bromoform	BDL	UG/L	5	1	8260	06/19	23416
Bromomethane	BDL	UG/L	10	1	8260	06/19	23416
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/19	23416
Chloroform	BDL	UG/L	5	1	8260	06/19	23416
Chlorobenzene	BDL	UG/L	5	1	8260	06/19	23416
Chloroethane	BDL	UG/L	10	1	8260	06/19	23416
Chloromethane	BDL	UG/L	10	1	8260	06/19	23416
Carbon disulfide	BDL	UG/L	5	1	8260	06/19	23416

te 'BDL' = Below Detection Limit

stribution of Report:
arles A. Jones - Sloss Industries

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Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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Suite 115
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ust Proj: TF0320.014

ample Desc: 960608-CO-01A-TB0006, Birmingham, AL

ab ID: 96 0006344

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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/19	23416
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/19	23416
Dibromochloromethane	BDL	UG/L	10	1	8260	06/19	23416
Dibromomethane	BDL	UG/L	5	1	8260	06/19	23416
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/19	23416
Ethylbenzene	BDL	UG/L	5	1	8260	06/19	23416
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/19	23416
Iodomethane	BDL	UG/L	5	1	8260	06/19	23416
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/19	23416
Methylene chloride	BDL	UG/L	5	1	8260	06/19	23416
o-Xylene	BDL	UG/L	.5	1	8260	06/19	23416
Styrene	BDL	UG/L	5	1	8260	06/19	23416
Trichloroethene	BDL	UG/L	.5	1	8260	06/19	23416
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/19	23416
Tetrachloroethene	BDL	UG/L	5	1	8260	06/19	23416
Toluene	BDL	UG/L	.5	1	8260	06/19	23416
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/19	23416
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/19	23416
Vinyl acetate	BDL	UG/L	10	1	8260	06/19	23416
Vinyl chloride	BDL	UG/L	10	1	8260	06/19	23416

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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	UG/L	10	5	6020	06/17	23065
Arsenic, Total	BDL	UG/L	10	5	6020	06/17	23065
Barium, Total	BDL	UG/L	10	5	6020	06/17	23065
Beryllium, Total	BDL	UG/L	5	5	6020	06/17	23065
Cadmium, Total	BDL	UG/L	5	5	6020	06/17	23065
Chromium, Total	BDL	UG/L	10	5	6020	06/17	23065
Copper, Total	BDL	UG/L	25	5	6020	06/17	23065
Mercury, Total	BDL	UG/L	50	1	7470	06/13	22999
Nickel, Total	BDL	UG/L	40	5	6020	06/17	23065
Lead, Total	BDL	UG/L	50	5	6020	06/17	23065
Antimony, Total	BDL	UG/L	50	5	6020	06/17	23065
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23104
Thallium, Total	BDL	UG/L	10	5	6020	06/17	23065
Zinc, Total	BDL	UG/L	20	5	6020	06/17	23065
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/08	23523
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/08	23523
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23523
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23523

ote 'BDL' = Below Detection Limit

istribution of Report:
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FL-DHRS Cert. No: E84254/84453

FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23523
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/08	23523
2-Chlorophenol	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Ethylhexyl) phthalate	BDL	UG/L	10	1	8270	07/08	23523
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/08	23523
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
2-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
2-Nitrophenol	BDL	UG/L	10	1	8270	07/08	23523
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
3-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/08	23523
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23523
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/08	23523
4-Chloroaniline	BDL	UG/L	20	1	8270	07/08	23523
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23523
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
4-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
4-Nitrophenol	BDL	UG/L	50	1	8270	07/08	23523
Acenaphthene	BDL	UG/L	10	1	8270	07/08	23523
Acenaphthylene	BDL	UG/L	10	1	8270	07/08	23523
Anthracene	BDL	UG/L	10	1	8270	07/08	23523
Benzyl alcohol	BDL	UG/L	10	1	8270	07/08	23523
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/08	23523
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/08	23523
Chrysene	BDL	UG/L	10	1	8270	07/08	23523

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

1030 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/31/96
C-of-C Number: C14776
Date Collected: 06/08/96 12:30
Collected By: CST
Date Received: 06/11/96 10:00

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960608-CO-01A-FB0003, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006345

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/08	23523
Dibenzofuran	BDL	UG/L	10	1	8270	07/08	23523
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/08	23523
Di-n-butylphthalate	BDL	UG/L	10	1	8270	07/08	23523
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/08	23523
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
Diethylphthalate	BDL	UG/L	10	1	8270	07/08	23523
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/08	23523
Dimethylphthalate	BDL	UG/L	10	1	8270	07/08	23523
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/08	23523
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/08	23523
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/08	23523
Fluorene	BDL	UG/L	10	1	8270	07/08	23523
Fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
Hexachloroethane	BDL	UG/L	10	1	8270	07/08	23523
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/08	23523
Isophorone	BDL	UG/L	10	1	8270	07/08	23523
Naphthalene	BDL	UG/L	10	1	8270	07/08	23523
Nitrobenzene	BDL	UG/L	10	1	8270	07/08	23523
Pentachlorophenol	BDL	UG/L	50	1	8270	07/08	23523
Phenol	BDL	UG/L	10	1	8270	07/08	23523
Phenanthrene	BDL	UG/L	10	1	8270	07/08	23523
Pyrene	BDL	UG/L	10	1	8270	07/08	23523

ote 'BDL' = Below Detection Limit

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ample Desc: 960608-CO-01A-FB0003, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006345

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Pyridine	BDL	UG/L	200	1	8270	07/08	23523
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23416
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/20	23416
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23416
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23416
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23416
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/20	23416
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23416
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/20	23416
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/20	23416
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/20	23416
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/20	23416
2-Hexanone	BDL	UG/L	50	1	8260	06/20	23416
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/20	23416
Acetone	BDL	UG/L	50	1	8260	06/20	23416
Acrolein	BDL	UG/L	100	1	8260	06/20	23416
Acrylonitrile	BDL	UG/L	100	1	8260	06/20	23416
Benzene	BDL	UG/L	5	1	8260	06/20	23416
Bromodichloromethane	BDL	UG/L	5	1	8260	06/20	23416
Bromoform	BDL	UG/L	5	1	8260	06/20	23416
Bromomethane	BDL	UG/L	10	1	8260	06/20	23416
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/20	23416
Chloroform	BDL	UG/L	5	1	8260	06/20	23416
Chlorobenzene	BDL	UG/L	5	1	8260	06/20	23416
Chloroethane	BDL	UG/L	10	1	8260	06/20	23416
Chloromethane	BDL	UG/L	10	1	8260	06/20	23416
Carbon disulfide	BDL	UG/L	5	1	8260	06/20	23416

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
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Chris Given
Laboratory Director

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ample Desc: 960608-CO-01A-FB0003, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006345

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23416
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/20	23416
Dibromochloromethane	BDL	UG/L	10	1	8260	06/20	23416
Dibromomethane	BDL	UG/L	5	1	8260	06/20	23416
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/20	23416
Ethylbenzene	BDL	UG/L	5	1	8260	06/20	23416
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/20	23416
Iodomethane	BDL	UG/L	5	1	8260	06/20	23416
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/20	23416
Methylene chloride	BDL	UG/L	5	1	8260	06/20	23416
o-Xylene	BDL	UG/L	.5	1	8260	06/20	23416
Styrene	BDL	UG/L	5	1	8260	06/20	23416
Trichloroethene	BDL	UG/L	.5	1	8260	06/20	23416
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/20	23416
Tetrachloroethene	BDL	UG/L	5	1	8260	06/20	23416
Toluene	BDL	UG/L	.5	1	8260	06/20	23416
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23416
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23416
Vinyl acetate	BDL	UG/L	10	1	8260	06/20	23416
Vinyl chloride	BDL	UG/L	10	1	8260	06/20	23416
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/17	23052

0002400

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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FL-DEP CompQAP: 900359G

ab ID: 96 0006345

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

OMMENTS

01 Method blank associated with this sample contained di-n-butylphthalate. Sample result is reported without blank subtraction.

000241

ote 'BDL' = Below Detection Limit

istribution of Report:
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ANALYSIS REPORT

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Suite 115
Tampa FL 33618

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ast Proj: TF0320.014

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ample Desc: 960608-CO-01A-SLEB03, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006346

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	UG/L	10	5	6020	06/17	23065
Arsenic, Total	BDL	UG/L	10	5	6020	06/17	23065
Barium, Total	BDL	UG/L	10	5	6020	06/17	23065
Beryllium, Total	BDL	UG/L	5	5	6020	06/17	23065
Cadmium, Total	BDL	UG/L	5	5	6020	06/17	23065
Chromium, Total	BDL	UG/L	10	5	6020	06/17	23065
Copper, Total	BDL	UG/L	25	5	6020	06/17	23065
Mercury, Total	BDL	UG/L	50	1	7470	06/13	22999
Nickel, Total	BDL	UG/L	40	5	6020	06/17	23065
Lead, Total	BDL	UG/L	50	5	6020	06/17	23065
Antimony, Total	BDL	UG/L	50	5	6020	06/17	23065
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23104
Thallium, Total	BDL	UG/L	10	5	6020	06/17	23065
Zinc, Total	BDL	UG/L	20	5	6020	06/17	23065
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/08	23523
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/08	23523
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23523
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23523

0002462

ote 'BDL' = Below Detection Limit

.stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
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Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

ust Proj: TF0320.014

ample Desc: 960608-CO-01A-SLEB03, Birmingham, AL

ab ID: 96 0006346

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FL-DHRS Cert. No: E84254/84453

FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23523
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/08	23523
2-Chlorophenol	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Ethylhexyl) phthalate	BDL	UG/L	10	1	8270	07/08	23523
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/08	23523
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
2-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
2-Nitrophenol	BDL	UG/L	10	1	8270	07/08	23523
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
3-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/08	23523
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23523
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/08	23523
4-Chloroaniline	BDL	UG/L	20	1	8270	07/08	23523
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23523
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
4-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
4-Nitrophenol	BDL	UG/L	50	1	8270	07/08	23523
Acenaphthene	BDL	UG/L	10	1	8270	07/08	23523
Acenaphthylene	BDL	UG/L	10	1	8270	07/08	23523
Anthracene	BDL	UG/L	10	1	8270	07/08	23523
Benzyl alcohol	BDL	UG/L	10	1	8270	07/08	23523
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/08	23523
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/08	23523
Chrysene	BDL	UG/L	10	1	8270	07/08	23523

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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ample Desc: 960608-CO-01A-SLEB03, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006346

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/08	23523
Dibenzofuran	BDL	UG/L	10	1	8270	07/08	23523
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/08	23523
Di-n-butylphthalate	BDL	UG/L	10	1	8270	07/08	23523
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/08	23523
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
Diethylphthalate	BDL	UG/L	10	1	8270	07/08	23523
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/08	23523
Dimethylphthalate	BDL	UG/L	10	1	8270	07/08	23523
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/08	23523
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/08	23523
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/08	23523
Fluorene	BDL	UG/L	10	1	8270	07/08	23523
Fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
Hexachloroethane	BDL	UG/L	10	1	8270	07/08	23523
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/08	23523
Isophorone	BDL	UG/L	10	1	8270	07/08	23523
Naphthalene	BDL	UG/L	10	1	8270	07/08	23523
Nitrobenzene	BDL	UG/L	10	1	8270	07/08	23523
Pentachlorophenol	BDL	UG/L	50	1	8270	07/08	23523
Phenol	BDL	UG/L	10	1	8270	07/08	23523
Phenanthrene	BDL	UG/L	10	1	8270	07/08	23523
Pyrene	BDL	UG/L	10	1	8270	07/08	23523

0002441

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Pyridine	BDL	UG/L	200	1	8270	07/08	23523
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/20	23421
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/20	23421
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/20	23421
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/20	23421
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/20	23421
2-Hexanone	BDL	UG/L	50	1	8260	06/20	23421
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/20	23421
Acetone	BDL	UG/L	50	1	8260	06/20	23421
Acrolein	BDL	UG/L	100	1	8260	06/20	23421
Acrylonitrile	BDL	UG/L	100	1	8260	06/20	23421
Benzene	BDL	UG/L	5	1	8260	06/20	23421
Bromodichloromethane	BDL	UG/L	5	1	8260	06/20	23421
Bromoform	BDL	UG/L	5	1	8260	06/20	23421
Bromomethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/20	23421
Chloroform	BDL	UG/L	5	1	8260	06/20	23421
Chlorobenzene	BDL	UG/L	5	1	8260	06/20	23421
Chloroethane	BDL	UG/L	10	1	8260	06/20	23421
Chloromethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon disulfide	BDL	UG/L	5	1	8260	06/20	23421

00245

ote 'BDL' = Below Detection Limit

istribution of Report:
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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/31/96
C-of-C Number: C14776
Date Collected: 06/08/96 12:45
Collected By: CST
Date Received: 06/11/96 10:00

ast Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960608-CO-01A-SLEB03, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006346

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/20	23421
Dibromochloromethane	BDL	UG/L	10	1	8260	06/20	23421
Dibromomethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/20	23421
Ethylbenzene	BDL	UG/L	5	1	8260	06/20	23421
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/20	23421
Iodomethane	BDL	UG/L	5	1	8260	06/20	23421
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/20	23421
Methylene chloride	BDL	UG/L	5	1	8260	06/20	23421
o-Xylene	BDL	UG/L	.5	1	8260	06/20	23421
Styrene	BDL	UG/L	5	1	8260	06/20	23421
Trichloroethene	BDL	UG/L	.5	1	8260	06/20	23421
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/20	23421
Tetrachloroethene	BDL	UG/L	5	1	8260	06/20	23421
Toluene	BDL	UG/L	.5	1	8260	06/20	23421
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Vinyl acetate	BDL	UG/L	10	1	8260	06/20	23421
Vinyl chloride	BDL	UG/L	10	1	8260	06/20	23421
T CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/17	23052

te 'BDL' = Below Detection Limit

stribution of Report:
arles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng , Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/26/96
C-of-C Number: C14777
Date Collected: 06/10/96 00:00
Collected By: CST
Date Received: 06/11/96 10:00

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960610-CO-02A-TB0007, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006347

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
RGANIC							
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/20	23421
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/20	23421
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/20	23421
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/20	23421
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/20	23421
2-Hexanone	BDL	UG/L	50	1	8260	06/20	23421
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/20	23421
Acetone	BDL	UG/L	50	1	8260	06/20	23421
Acrolein	BDL	UG/L	100	1	8260	06/20	23421
Acrylonitrile	BDL	UG/L	100	1	8260	06/20	23421
Benzene	BDL	UG/L	5	1	8260	06/20	23421
Bromodichloromethane	BDL	UG/L	5	1	8260	06/20	23421
Bromoform	BDL	UG/L	5	1	8260	06/20	23421
Bromomethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/20	23421
Chloroform	BDL	UG/L	5	1	8260	06/20	23421
Chlorobenzene	BDL	UG/L	5	1	8260	06/20	23421
Chloroethane	BDL	UG/L	10	1	8260	06/20	23421
Chloromethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon disulfide	BDL	UG/L	5	1	8260	06/20	23421

ote 'BDL' = Below Detection Limit

00247

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

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st Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

mple Desc: 960610-CO-02A-TB0007, Birmingham, AL

FL-DEP CompQAP: 900359G

b ID: 96 0006347

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/20	23421
Dibromochloromethane	BDL	UG/L	10	1	8260	06/20	23421
Dibromomethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/20	23421
Ethylbenzene	BDL	UG/L	5	1	8260	06/20	23421
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/20	23421
Iodomethane	BDL	UG/L	5	1	8260	06/20	23421
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/20	23421
Methylene chloride	BDL	UG/L	5	1	8260	06/20	23421
o-Xylene	BDL	UG/L	.5	1	8260	06/20	23421
Styrene	BDL	UG/L	5	1	8260	06/20	23421
Trichloroethene	BDL	UG/L	.5	1	8260	06/20	23421
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/20	23421
Tetrachloroethene	BDL	UG/L	5	1	8260	06/20	23421
Toluene	BDL	UG/L	.5	1	8260	06/20	23421
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Vinyl acetate	BDL	UG/L	10	1	8260	06/20	23421
Vinyl chloride	BDL	UG/L	10	1	8260	06/20	23421

te 'BDL' = Below Detection Limit

stribution of Report:
arles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

·030· NINTH STREET NORTH • ST. PETERSBURG, FLC .3716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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ıst Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960610-CO-02A-FB0004, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006348

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	UG/L	10	2	6020	06/17	23065
Arsenic, Total	BDL	UG/L	10	5	6020	06/17	23065
Barium, Total	BDL	UG/L	10	5	6020	06/17	23065
Beryllium, Total	BDL	UG/L	5	5	6020	06/17	23065
Cadmium, Total	BDL	UG/L	5	5	6020	06/17	23065
Chromium, Total	BDL	UG/L	10	5	6020	06/17	23065
Copper, Total	BDL	UG/L	25	5	6020	06/17	23065
Mercury, Total	BDL	UG/L	50	1	7470	06/13	22999
Nickel, Total	BDL	UG/L	40	5	6020	06/17	23065
Lead, Total	BDL	UG/L	50	5	6020	06/17	23065
Antimony, Total	BDL	UG/L	50	5	6020	06/17	23065
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23104
Thallium, Total	BDL	UG/L	10	5	6020	06/17	23065
Zinc, Total	BDL	UG/L	20	5	6020	06/17	23065
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/08	23523
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/08	23523
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23523
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23523

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

6301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

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Environmental Testing Services

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ample Desc: 960610-CO-02A-FB0004, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006348

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23523
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/08	23523
2-Chlorophenol	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Ethylhexyl) phthalate	BDL	UG/L	10	1	8270	07/08	23523
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/08	23523
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
2-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
2-Nitrophenol	BDL	UG/L	10	1	8270	07/08	23523
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
3-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/08	23523
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23523
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/08	23523
4-Chloroaniline	BDL	UG/L	20	1	8270	07/08	23523
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23523
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
4-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
4-Nitrophenol	BDL	UG/L	50	1	8270	07/08	23523
Acenaphthene	BDL	UG/L	10	1	8270	07/08	23523
Acenaphthylene	BDL	UG/L	10	1	8270	07/08	23523
Anthracene	BDL	UG/L	10	1	8270	07/08	23523
Benzyl alcohol	BDL	UG/L	10	1	8270	07/08	23523
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/08	23523
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/08	23523
Chrysene	BDL	UG/L	10	1	8270	07/08	23523

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ıb ID: 96 0006348

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/08	23523
Dibenzofuran	BDL	UG/L	10	1	8270	07/08	23523
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/08	23523
Di-n-butylphthalate	BDL	UG/L	10	1	8270	07/08	23523
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/08	23523
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
Diethylphthalate	BDL	UG/L	10	1	8270	07/08	23523
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/08	23523
Dimethylphthalate	BDL	UG/L	10	1	8270	07/08	23523
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/08	23523
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/08	23523
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/08	23523
Fluorene	BDL	UG/L	10	1	8270	07/08	23523
Fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
Hexachloroethane	BDL	UG/L	10	1	8270	07/08	23523
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/08	23523
Isophorone	BDL	UG/L	10	1	8270	07/08	23523
Naphthalene	BDL	UG/L	10	1	8270	07/08	23523
Nitrobenzene	BDL	UG/L	10	1	8270	07/08	23523
Pentachlorophenol	BDL	UG/L	50	1	8270	07/08	23523
Phenol	BDL	UG/L	10	1	8270	07/08	23523
Phenanthrene	BDL	UG/L	10	1	8270	07/08	23523
Pyrene	BDL	UG/L	10	1	8270	07/08	23523

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istribution of Report:
harles A. Jones - Sloss Industries

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ab ID: 96 0006348

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Pyridine	BDL	UG/L	200	1	8270	07/08	23523
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/20	23421
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/20	23421
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/20	23421
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/20	23421
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/20	23421
2-Hexanone	BDL	UG/L	50	1	8260	06/20	23421
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/20	23421
Acetone	BDL	UG/L	50	1	8260	06/20	23421
Acrolein	BDL	UG/L	100	1	8260	06/20	23421
Acrylonitrile	BDL	UG/L	100	1	8260	06/20	23421
Benzene	BDL	UG/L	5	1	8260	06/20	23421
Bromodichloromethane	BDL	UG/L	5	1	8260	06/20	23421
Bromoform	BDL	UG/L	5	1	8260	06/20	23421
Bromomethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/20	23421
Chloroform	BDL	UG/L	5	1	8260	06/20	23421
Chlorobenzene	BDL	UG/L	5	1	8260	06/20	23421
Chloroethane	BDL	UG/L	10	1	8260	06/20	23421
Chloromethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon disulfide	BDL	UG/L	5	1	8260	06/20	23421

ote 'BDL' = Below Detection Limit

.stribution of Report:
harles A. Jones - Sloss Industries

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ab ID: 96 0006348

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/20	23421
Dibromochloromethane	BDL	UG/L	10	1	8260	06/20	23421
Dibromomethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/20	23421
Ethylbenzene	BDL	UG/L	5	1	8260	06/20	23421
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/20	23421
Iodomethane	BDL	UG/L	5	1	8260	06/20	23421
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/20	23421
Methylene chloride	BDL	UG/L	5	1	8260	06/20	23421
o-Xylene	BDL	UG/L	.5	1	8260	06/20	23421
Styrene	BDL	UG/L	5	1	8260	06/20	23421
Trichloroethene	BDL	UG/L	.5	1	8260	06/20	23421
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/20	23421
Tetrachloroethene	BDL	UG/L	5	1	8260	06/20	23421
Toluene	BDL	UG/L	.5	1	8260	06/20	23421
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Vinyl acetate	BDL	UG/L	10	1	8260	06/20	23421
Vinyl chloride	BDL	UG/L	10	1	8260	06/20	23421
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/20	23188

000253

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/26/96
C-of-C Number: C14777
Date Collected: 06/10/96 10:45
Collected By: CST
Date Received: 06/11/96 10:00

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960610-CO-02A-SLEB04, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006349

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	UG/L	10	5	6020	06/17	23065
Arsenic, Total	BDL	UG/L	10	5	6020	06/17	23065
Barium, Total	BDL	UG/L	10	5	6020	06/17	23065
Beryllium, Total	BDL	UG/L	5	5	6020	06/17	23065
Cadmium, Total	BDL	UG/L	5	5	6020	06/17	23065
Chromium, Total	BDL	UG/L	10	5	6020	06/17	23065
Copper, Total	BDL	UG/L	25	5	6020	06/17	23065
Mercury, Total	BDL	UG/L	50	1	7470	06/13	22999
Nickel, Total	BDL	UG/L	40	5	6020	06/17	23065
Lead, Total	BDL	UG/L	50	5	6020	06/17	23065
Antimony, Total	BDL	UG/L	50	5	6020	06/17	23065
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23104
Thallium, Total	BDL	UG/L	10	5	6020	06/17	23065
Zinc, Total	43	UG/L	20	5	6020	06/17	23065
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/08	23523
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/08	23523
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23523
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23523

000254

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
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Tampa FL 33618

Date of Report: 07/26/96
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ast Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960610-CO-02A-SLEB04, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006349

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23523
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/08	23523
2-Chlorophenol	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Ethylhexyl) phthalate	62	UG/L	10	1	8270	07/08	23523
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/08	23523
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
2-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
2-Nitrophenol	BDL	UG/L	10	1	8270	07/08	23523
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
3-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/08	23523
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23523
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/08	23523
4-Chloroaniline	BDL	UG/L	20	1	8270	07/08	23523
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23523
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
4-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
4-Nitrophenol	BDL	UG/L	50	1	8270	07/08	23523
Acenaphthene	BDL	UG/L	10	1	8270	07/08	23523
Acenaphthylene	BDL	UG/L	10	1	8270	07/08	23523
Anthracene	BDL	UG/L	10	1	8270	07/08	23523
Benzyl alcohol	BDL	UG/L	10	1	8270	07/08	23523
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/08	23523
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/08	23523
Chrysene	BDL	UG/L	10	1	8270	07/08	23523

002353

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ample Desc: 960610-CO-02A-SLEB04, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006349

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/08	23523
Dibenzofuran	BDL	UG/L	10	1	8270	07/08	23523
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/08	23523
Di-n-butylphthalate	2200	UG/L	10	1	8270	07/08	23523
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/08	23523
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
Diethylphthalate	BDL	UG/L	10	1	8270	07/08	23523
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/08	23523
Dimethylphthalate	BDL	UG/L	10	1	8270	07/08	23523
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/08	23523
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/08	23523
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/08	23523
Fluorene	BDL	UG/L	10	1	8270	07/08	23523
Fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
Hexachloroethane	BDL	UG/L	10	1	8270	07/08	23523
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/08	23523
Isophorone	BDL	UG/L	10	1	8270	07/08	23523
Naphthalene	BDL	UG/L	10	1	8270	07/08	23523
Nitrobenzene	BDL	UG/L	10	1	8270	07/08	23523
Pentachlorophenol	BDL	UG/L	50	1	8270	07/08	23523
Phenol	BDL	UG/L	10	1	8270	07/08	23523
Phenanthrene	BDL	UG/L	10	1	8270	07/08	23523
Pyrene	BDL	UG/L	10	1	8270	07/08	23523

ote 'BDL' = Below Detection Limit

stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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ast Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960610-CO-02A-SLEB04, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006349

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Pyridine	BDL	UG/L	200	1	8270	07/08	23523
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/20	23421
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/20	23421
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/20	23421
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/20	23421
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/20	23421
2-Hexanone	BDL	UG/L	50	1	8260	06/20	23421
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/20	23421
Acetone	BDL	UG/L	50	1	8260	06/20	23421
Acrolein	BDL	UG/L	100	1	8260	06/20	23421
Acrylonitrile	BDL	UG/L	100	1	8260	06/20	23421
Benzene	BDL	UG/L	5	1	8260	06/20	23421
Bromodichloromethane	BDL	UG/L	5	1	8260	06/20	23421
Bromoform	BDL	UG/L	5	1	8260	06/20	23421
Bromomethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/20	23421
Chloroform	BDL	UG/L	5	1	8260	06/20	23421
Chlorobenzene	BDL	UG/L	5	1	8260	06/20	23421
Chloroethane	BDL	UG/L	10	1	8260	06/20	23421
Chloromethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon disulfide	BDL	UG/L	5	1	8260	06/20	23421

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

3030 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/26/96
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ample Desc: 960610-CO-02A-SLEB04, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006349

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/20	23421
Dibromochloromethane	BDL	UG/L	10	1	8260	06/20	23421
Dibromomethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/20	23421
Ethylbenzene	BDL	UG/L	5	1	8260	06/20	23421
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/20	23421
Iodomethane	BDL	UG/L	5	1	8260	06/20	23421
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/20	23421
Methylene chloride	BDL	UG/L	5	1	8260	06/20	23421
o-Xylene	BDL	UG/L	.5	1	8260	06/20	23421
Styrene	BDL	UG/L	5	1	8260	06/20	23421
Trichloroethene	BDL	UG/L	.5	1	8260	06/20	23421
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/20	23421
Tetrachloroethene	BDL	UG/L	5	1	8260	06/20	23421
Toluene	1.1	UG/L	.5	1	8260	06/20	23421
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Vinyl acetate	BDL	UG/L	10	1	8260	06/20	23421
Vinyl chloride	BDL	UG/L	10	1	8260	06/20	23421
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/20	23188

ote 'BDL' = Below Detection Limit

.stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

:tention: Kathy Thalman
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FL-DHRS Cert. No: E84254/84453

ample Desc: 960610-CO-02A-SLEB04, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006349

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

OMMENTS

01 Method blank associated with this sample contained di-n-butylphthalate. Sample result is reported without blank subtraction.

0052

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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Chris Given
Laboratory Director

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Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960610-CO-02A-SL0001 (2-4), Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14777
Date Collected: 06/10/96 11:25
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006350

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.4	1	6010	06/17	23063
Arsenic, Total	14	MG/KG-DW	1.4	10	6020	06/21	23174
Barium, Total	93	MG/KG-DW	1.4	1	6010	06/17	23063
Beryllium, Total	1.6	MG/KG-DW	0.71	1	6010	06/17	23063
Cadmium, Total	1.4	MG/KG-DW	0.71	1	6010	06/17	23063
Chromium, Total	14	MG/KG-DW	1.4	1	6010	06/17	23063
Copper, Total	280	MG/KG-DW	3.6	1	6010	06/17	23063
Mercury, Total	0.17	MG/KG-DW	0.047	1	7471	06/14	23034
Nickel, Total	12	MG/KG-DW	5.7	1	6010	06/17	23063
Lead, Total	90	MG/KG-DW	7.1	1	6010	06/17	23063
Antimony, Total	BDL	MG/KG-DW	7.1	1	6010	06/17	23063
Selenium, Total	BDL	MG/KG-DW	71	1	6010	06/17	23063
Thallium, Total	BDL	MG/KG-DW	71	1	6010	06/17	23063
Zinc, Total	63	MG/KG-DW	2.8	1	6010	06/17	23063
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	940	2	8270	07/11	23602
1,2-Dichlorobenzene	BDL	UG/KG-DW	940	2	8270	07/11	23602
1,3-Dichlorobenzene	BDL	UG/KG-DW	940	2	8270	07/11	23602
1,4-Dichlorobenzene	BDL	UG/KG-DW	940	2	8270	07/11	23602
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	4800	2	8270	07/11	23602
2,4,5-Trichlorophenol	BDL	UG/KG-DW	4800	2	8270	07/11	23602
2,4,6-Trichlorophenol	BDL	UG/KG-DW	940	2	8270	07/11	23602
2,4-Dinitrophenol	BDL	UG/KG-DW	4800	2	8270	07/11	23602
2,4-Dinitrotoluene	BDL	UG/KG-DW	940	2	8270	07/11	23602
2,6-Dichlorophenol	BDL	UG/KG-DW	940	2	8270	07/11	23602
2,6-Dinitrotoluene	BDL	UG/KG-DW	940	2	8270	07/11	23602
2-Chloronaphthalene	BDL	UG/KG-DW	940	2	8270	07/11	23602

092000

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

.stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
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Reviewed and Approved by:

Chris Given
Laboratory Director

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Environmental Testing Services

ANALYSIS REPORT

:tention: Kathy Thalman
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ıst Proj: TF0320.014
ımple Desc: 960610-CO-02A-SL0001 (2-4), Birmingham, AL

ıb ID: 96 0006350

Date of Report: 07/26/96
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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	940	2	8270	07/11	23602
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	940	2	8270	07/11	23602
2-Methylnaphthalene	BDL	UG/KG-DW	940	2	8270	07/11	23602
2-Methylphenol (o-Cresol)	1400	UG/KG-DW	940	2	8270	07/11	23602
2-Nitroaniline	BDL	UG/KG-DW	4800	2	8270	07/11	23602
2-Nitrophenol	BDL	UG/KG-DW	940	2	8270	07/11	23602
3-Methylphenol (m-Cresol)	1700	UG/KG-DW	940	2	8270	07/11	23602
3-Nitroaniline	BDL	UG/KG-DW	4800	2	8270	07/11	23602
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	4800	2	8270	07/11	23602
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	940	2	8270	07/11	23602
4-Chloro-3-methylphenol	BDL	UG/KG-DW	940	2	8270	07/11	23602
4-Chloroaniline	BDL	UG/KG-DW	1900	2	8270	07/11	23602
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	940	2	8270	07/11	23602
4-Methylphenol (p-Cresol)	1700	UG/KG-DW	940	2	8270	07/11	23602
4-Nitroaniline	BDL	UG/KG-DW	4800	2	8270	07/11	23602
4-Nitrophenol	BDL	UG/KG-DW	4800	2	8270	07/11	23602
Acenaphthene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Acenaphthylene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Anthracene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Benzyl alcohol	BDL	UG/KG-DW	940	2	8270	07/11	23602
Benzo(a)anthracene	6700	UG/KG-DW	940	2	8270	07/11	23602
Benzo(a)pyrene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Benzo (b) fluoranthene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Benzo (k) fluoranthene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Benzo (g,h,i) perylene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Chrysene	5300	UG/KG-DW	940	2	8270	07/11	23602
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	940	2	8270	07/11	23602
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	940	2	8270	07/11	23602
Dibenzofuran	BDL	UG/KG-DW	940	2	8270	07/11	23602
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	940	2	8270	07/11	23602

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

.stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

tention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
st Proj: TF0320.014
mple Desc: 960610-CO-02A-SL0001 (2-4), Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14777
Date Collected: 06/10/96 11:25
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

b ID: 96 0006350

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	2700	UG/KG-DW	940	2	8270	07/11	23602
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	4800	2	8270	07/11	23602
2,4-Dichlorophenol	BDL	UG/KG-DW	940	2	8270	07/11	23602
Diethylphthalate	BDL	UG/KG-DW	940	2	8270	07/11	23602
2,4-Dimethylphenol	BDL	UG/KG-DW	940	2	8270	07/11	23602
Dimethylphthalate	BDL	UG/KG-DW	940	2	8270	07/11	23602
n-Nitrosodimethylamine	BDL	UG/KG-DW	940	2	8270	07/11	23602
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	940	2	8270	07/11	23602
Di-n-octylphthalate	BDL	UG/KG-DW	940	2	8270	07/11	23602
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	940	2	8270	07/11	23602
Fluorene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Fluoranthene	4800	UG/KG-DW	940	2	8270	07/11	23602
Hexachlorocyclopentadiene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Hexachlorobutadiene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Hexachlorobenzene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Hexachloroethane	BDL	UG/KG-DW	940	2	8270	07/11	23602
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Isophorone	BDL	UG/KG-DW	940	2	8270	07/11	23602
Naphthalene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Nitrobenzene	BDL	UG/KG-DW	940	2	8270	07/11	23602
Pentachlorophenol	BDL	UG/KG-DW	4800	2	8270	07/11	23602
Phenol	2700	UG/KG-DW	940	2	8270	07/11	23602
Phenanthrene	1400	UG/KG-DW	940	2	8270	07/11	23602
Pyrene	10000	UG/KG-DW	940	2	8270	07/11	23602
Pyridine	BDL	UG/KG-DW	940	2	8270	07/11	23602
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.71	1	8260	06/20	23605
1,1,2-Trichloroethane	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
1,1-Dichloroethane	BDL	UG/KG-DW	7.1	1	8260	06/20	23605

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
1,2,3-Trichloropropane	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
1,2-Dichloroethane	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
1,2-Dichloropropane	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	14	1	8260	06/20	23605
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	71	1	8260	06/20	23605
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	14	1	8260	06/20	23605
2-Hexanone	BDL	UG/KG-DW	71	1	8260	06/20	23605
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	71	1	8260	06/20	23605
Acetone	1200	UG/KG-DW	71	1	8260	06/20	23605
Acrolein	BDL	UG/KG-DW	280	1	8260	06/20	23605
Acrylonitrile	BDL	UG/KG-DW	140	1	8260	06/20	23605
Benzene	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Bromodichloromethane	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Bromoform	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Bromomethane	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Carbon tetrachloride	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Chloroform	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Chlorobenzene	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Chloroethane	BDL	UG/KG-DW	14	1	8260	06/20	23605
Chloromethane	BDL	UG/KG-DW	14	1	8260	06/20	23605
Carbon disulfide	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
cis-1,3-Dichloropropene	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Dichlorodifluoromethane	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Dibromochloromethane	BDL	UG/KG-DW	14	1	8260	06/20	23605
Dibromomethane	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Ethylbenzene	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Ethyl methacrylate	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Iodomethane	BDL	UG/KG-DW	7.1	1	8260	06/20	23605

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Methylene chloride	14	UG/KG-DW	7.1	1	8260	06/20	23605
o-Xylene	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Styrene	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Trichloroethene	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Trichlorofluoromethane	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Tetrachloroethene	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Toluene	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
trans-1,2-Dichloroethene	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
trans-1,3-Dichloropropene	BDL	UG/KG-DW	7.1	1	8260	06/20	23605
Vinyl acetate	BDL	UG/KG-DW	14	1	8260	06/20	23605
Vinyl chloride	BDL	UG/KG-DW	14	1	8260	06/20	23605
ET CHEM							
CHEMICAL							
Cyanide, Total	27	MG/KG-DW	1.4	1	9012	06/21	23187
PHYSICAL							
Percent Solids	70	%	4	1	160.3	06/13	23024

OMMENTS

01 Results for semivolatile organics by method 8270 should be considered estimates due to matrix spike recovery outside the project limits. Surrogate recoveries were in control

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.

03 Results for Styrene, ethylmethacrylate, chloroethane, 2-hexanone, acetone, iodomethane, 4-methyl-2-pentanone, 2-butanone, 1,4-dichloro-2-butene, (conti.)

04 1,2,3-trichloropropane, 1,1,2,2-TCA, vinyl acetate, tetrachloroethene and difluorodichloromethane sould be considered estimates due to spike recoveries.

05 Bromomethane and 1,1,2,2-TCA were detected in the method blank. Sample results were reported without blank correction.

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ab ID: 96 0006351

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.2	1	6010	06/17	23063
Arsenic, Total	13	MG/KG-DW	1.2	10	6020	06/21	23174
Barium, Total	200	MG/KG-DW	1.2	1	6010	06/17	23063
Beryllium, Total	1.6	MG/KG-DW	0.60	1	6010	06/17	23063
Cadmium, Total	BDL	MG/KG-DW	0.60	1	6010	06/17	23063
Chromium, Total	30	MG/KG-DW	1.2	1	6010	06/17	23063
Copper, Total	3.5	MG/KG-DW	3.0	1	6010	06/17	23063
Mercury, Total	BDL	MG/KG-DW	0.040	1	7471	06/14	23034
Nickel, Total	11	MG/KG-DW	4.8	1	6010	06/17	23063
Lead, Total	40	MG/KG-DW	6.0	1	6010	06/17	23063
Antimony, Total	BDL	MG/KG-DW	6.0	1	6010	06/17	23063
Selenium, Total	BDL	MG/KG-DW	60	1	6010	06/17	23063
Thallium, Total	BDL	MG/KG-DW	60	1	6010	06/17	23063
Zinc, Total	36	MG/KG-DW	2.4	1	6010	06/17	23063
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/11	23602
1,2-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/11	23602
1,3-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/11	23602
1,4-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/11	23602
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2000	1	8270	07/11	23602
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2000	1	8270	07/11	23602
2,4,6-Trichlorophenol	BDL	UG/KG-DW	400	1	8270	07/11	23602
2,4-Dinitrophenol	BDL	UG/KG-DW	2000	1	8270	07/11	23602
2,4-Dinitrotoluene	BDL	UG/KG-DW	400	1	8270	07/11	23602
2,6-Dichlorophenol	BDL	UG/KG-DW	400	1	8270	07/11	23602
2,6-Dinitrotoluene	BDL	UG/KG-DW	400	1	8270	07/11	23602
2-Chloronaphthalene	BDL	UG/KG-DW	400	1	8270	07/11	23602

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	400	1	8270	07/11	23602
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	400	1	8270	07/11	23602
2-Methylnaphthalene	BDL	UG/KG-DW	400	1	8270	07/11	23602
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	400	1	8270	07/11	23602
2-Nitroaniline	BDL	UG/KG-DW	2000	1	8270	07/11	23602
2-Nitrophenol	BDL	UG/KG-DW	400	1	8270	07/11	23602
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	400	1	8270	07/11	23602
3-Nitroaniline	BDL	UG/KG-DW	2000	1	8270	07/11	23602
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2000	1	8270	07/11	23602
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	400	1	8270	07/11	23602
4-Chloro-3-methylphenol	BDL	UG/KG-DW	400	1	8270	07/11	23602
4-Chloroaniline	BDL	UG/KG-DW	800	1	8270	07/11	23602
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	400	1	8270	07/11	23602
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	400	1	8270	07/11	23602
4-Nitroaniline	BDL	UG/KG-DW	2000	1	8270	07/11	23602
4-Nitrophenol	BDL	UG/KG-DW	2000	1	8270	07/11	23602
Acenaphthene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Acenaphthylene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Anthracene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Benzyl alcohol	BDL	UG/KG-DW	400	1	8270	07/11	23602
Benzo(a)anthracene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Benzo(a)pyrene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Benzo (b) fluoranthene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Benzo (k) fluoranthene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Benzo (g,h,i) perylene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Chrysene	BDL	UG/KG-DW	400	1	8270	07/11	23602
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	400	1	8270	07/11	23602
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	400	1	8270	07/11	23602
Dibenzofuran	BDL	UG/KG-DW	400	1	8270	07/11	23602
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	400	1	8270	07/11	23602

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	2900	UG/KG-DW	400	1	8270	07/11	23602
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2000	1	8270	07/11	23602
2,4-Dichlorophenol	BDL	UG/KG-DW	400	1	8270	07/11	23602
Diethylphthalate	BDL	UG/KG-DW	400	1	8270	07/11	23602
2,4-Dimethylphenol	BDL	UG/KG-DW	400	1	8270	07/11	23602
Dimethylphthalate	BDL	UG/KG-DW	400	1	8270	07/11	23602
n-Nitrosodimethylamine	BDL	UG/KG-DW	400	1	8270	07/11	23602
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	400	1	8270	07/11	23602
Di-n-octylphthalate	BDL	UG/KG-DW	400	1	8270	07/11	23602
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	400	1	8270	07/11	23602
Fluorene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Fluoranthene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Hexachlorocyclopentadiene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Hexachlorobutadiene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Hexachlorobenzene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Hexachloroethane	BDL	UG/KG-DW	400	1	8270	07/11	23602
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Isophorone	BDL	UG/KG-DW	400	1	8270	07/11	23602
Naphthalene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Nitrobenzene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Pentachlorophenol	BDL	UG/KG-DW	2000	1	8270	07/11	23602
Phenol	BDL	UG/KG-DW	400	1	8270	07/11	23602
Phenanthrene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Pyrene	BDL	UG/KG-DW	400	1	8270	07/11	23602
Pyridine	BDL	UG/KG-DW	400	1	8270	07/11	23602
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
1,1,2,2-Tetrachloroethane	2.4	UG/KG-DW	0.60	1	8260	06/21	23605
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
1,1-Dichloroethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23605

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
1,2-Dichloroethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
1,2-Dichloropropane	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	12	1	8260	06/21	23605
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	60	1	8260	06/21	23605
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	12	1	8260	06/21	23605
2-Hexanone	BDL	UG/KG-DW	60	1	8260	06/21	23605
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	60	1	8260	06/21	23605
Acetone	92	UG/KG-DW	60	1	8260	06/21	23605
Acrolein	BDL	UG/KG-DW	240	1	8260	06/21	23605
Acrylonitrile	BDL	UG/KG-DW	120	1	8260	06/21	23605
Benzene	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Bromodichloromethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Bromoform	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Bromomethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Carbon tetrachloride	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Chloroform	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Chlorobenzene	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Chloroethane	BDL	UG/KG-DW	12	1	8260	06/21	23605
Chloromethane	BDL	UG/KG-DW	12	1	8260	06/21	23605
Carbon disulfide	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Dichlorodifluoromethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Dibromochloromethane	BDL	UG/KG-DW	12	1	8260	06/21	23605
Dibromomethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Ethylbenzene	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Ethyl methacrylate	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Iodomethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23605

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ust Proj: TF0320.014
ample Desc: 960610-CO-02A-SL0001 (16-18), Birmingham, AL

ab ID: 96 0006351

Date of Report: 07/26/96
C-of-C Number: C14777
Date Collected: 06/10/96 14:05
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Methylene chloride	17	UG/KG-DW	6.0	1	8260	06/21	23605
o-Xylene	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Styrene	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Trichloroethene	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Trichlorofluoromethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Tetrachloroethene	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Toluene	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.0	1	8260	06/21	23605
Vinyl acetate	BDL	UG/KG-DW	12	1	8260	06/21	23605
Vinyl chloride	BDL	UG/KG-DW	12	1	8260	06/21	23605
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.2	1	9012	06/21	23187
PHYSICAL							
Percent Solids	83	%	4	1	160.3	06/13	23024

OMMENTS

01 Results for semivolatile organics by method 8270 should be considered estimates due to matrix spike recovery outside the project limits. Surrogate recoveries were in control

ote 'BDL' = Below Detection Limit
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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.

03 Results for Styrene, ethylmethacrylate, chloroethane, 2-hexanone, acetone, iodomethane, 4-methyl-2-pentanone, 2-butanone, 1,4-dichloro-2-butene, (conti.)

04 1,2,3-trichloropropane, 1,1,2,2-TCA, vinyl acetate, tetrachloroethene and difluorodichloromethane sould be considered estimates due to spike recoveries.

05 Bromomethane and 1,1,2,2-TCA were detected in the method blank. Sample results were reported without blank correction.

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Unit followed by 'DW' signifies Results in Dry Weight.

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.3	1	6010	06/17	23063
Arsenic, Total	24	MG/KG-DW	1.3	10	6020	06/21	23174
Barium, Total	110	MG/KG-DW	1.3	1	6010	06/17	23063
Beryllium, Total	1.7	MG/KG-DW	0.67	1	6010	06/17	23063
Cadmium, Total	0.80	MG/KG-DW	0.67	1	6010	06/17	23063
Chromium, Total	7.1	MG/KG-DW	1.3	1	6010	06/17	23063
Copper, Total	52	MG/KG-DW	3.3	1	6010	06/17	23063
Mercury, Total	BDL	MG/KG-DW	0.044	1	7471	06/14	23034
Nickel, Total	31	MG/KG-DW	5.3	1	6010	06/17	23063
Lead, Total	29	MG/KG-DW	6.7	1	6010	06/17	23063
Antimony, Total	BDL	MG/KG-DW	6.7	1	6010	06/17	23063
Selenium, Total	BDL	MG/KG-DW	67	1	6010	06/17	23063
Thallium, Total	BDL	MG/KG-DW	67	1	6010	06/17	23063
Zinc, Total	950	MG/KG-DW	2.7	1	6010	06/17	23063
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	440	1	8270	07/12	23602
1,2-Dichlorobenzene	BDL	UG/KG-DW	440	1	8270	07/12	23602
1,3-Dichlorobenzene	BDL	UG/KG-DW	440	1	8270	07/12	23602
1,4-Dichlorobenzene	BDL	UG/KG-DW	440	1	8270	07/12	23602
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2300	1	8270	07/12	23602
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2300	1	8270	07/12	23602
2,4,6-Trichlorophenol	BDL	UG/KG-DW	440	1	8270	07/12	23602
2,4-Dinitrophenol	BDL	UG/KG-DW	2300	1	8270	07/12	23602
2,4-Dinitrotoluene	BDL	UG/KG-DW	440	1	8270	07/12	23602
2,6-Dichlorophenol	BDL	UG/KG-DW	440	1	8270	07/12	23602
2,6-Dinitrotoluene	BDL	UG/KG-DW	440	1	8270	07/12	23602
2-Chloronaphthalene	BDL	UG/KG-DW	440	1	8270	07/12	23602

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	440	1	8270	07/12	23602
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	440	1	8270	07/12	23602
2-Methylnaphthalene	BDL	UG/KG-DW	440	1	8270	07/12	23602
2-Methylphenol (o-Cresol)	850	UG/KG-DW	440	1	8270	07/12	23602
2-Nitroaniline	BDL	UG/KG-DW	2300	1	8270	07/12	23602
2-Nitrophenol	BDL	UG/KG-DW	440	1	8270	07/12	23602
3-Methylphenol (m-Cresol)	1200	UG/KG-DW	440	1	8270	07/12	23602
3-Nitroaniline	BDL	UG/KG-DW	2300	1	8270	07/12	23602
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2300	1	8270	07/12	23602
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	440	1	8270	07/12	23602
4-Chloro-3-methylphenol	BDL	UG/KG-DW	440	1	8270	07/12	23602
4-Chloroaniline	BDL	UG/KG-DW	880	1	8270	07/12	23602
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	440	1	8270	07/12	23602
4-Methylphenol (p-Cresol)	1200	UG/KG-DW	440	1	8270	07/12	23602
4-Nitroaniline	BDL	UG/KG-DW	2300	1	8270	07/12	23602
4-Nitrophenol	BDL	UG/KG-DW	2300	1	8270	07/12	23602
Acenaphthene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Acenaphthylene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Anthracene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Benzyl alcohol	BDL	UG/KG-DW	440	1	8270	07/12	23602
Benzo(a)anthracene	3900	UG/KG-DW	440	1	8270	07/12	23602
Benzo(a)pyrene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Benzo (b) fluoranthene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Benzo (k) fluoranthene	4000	UG/KG-DW	440	1	8270	07/12	23602
Benzo (g,h,i) perylene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Chrysene	2900	UG/KG-DW	440	1	8270	07/12	23602
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	440	1	8270	07/12	23602
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	440	1	8270	07/12	23602
Dibenzofuran	BDL	UG/KG-DW	440	1	8270	07/12	23602
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	440	1	8270	07/12	23602

0002

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b ID: 96 0006352

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	1500	UG/KG-DW	440	1	8270	07/12	23602
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2300	1	8270	07/12	23602
2,4-Dichlorophenol	BDL	UG/KG-DW	440	1	8270	07/12	23602
Diethylphthalate	BDL	UG/KG-DW	440	1	8270	07/12	23602
2,4-Dimethylphenol	BDL	UG/KG-DW	440	1	8270	07/12	23602
Dimethylphthalate	BDL	UG/KG-DW	440	1	8270	07/12	23602
n-Nitrosodimethylamine	BDL	UG/KG-DW	440	1	8270	07/12	23602
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	440	1	8270	07/12	23602
Di-n-octylphthalate	BDL	UG/KG-DW	440	1	8270	07/12	23602
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	440	1	8270	07/12	23602
Fluorene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Fluoranthene	5500	UG/KG-DW	440	1	8270	07/12	23602
Hexachlorocyclopentadiene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Hexachlorobutadiene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Hexachlorobenzene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Hexachloroethane	BDL	UG/KG-DW	440	1	8270	07/12	23602
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Isophorone	BDL	UG/KG-DW	440	1	8270	07/12	23602
Naphthalene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Nitrobenzene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Pentachlorophenol	BDL	UG/KG-DW	2300	1	8270	07/12	23602
Phenol	1300	UG/KG-DW	440	1	8270	07/12	23602
Phenanthrene	BDL	UG/KG-DW	440	1	8270	07/12	23602
Pyrene	7100	UG/KG-DW	440	1	8270	07/12	23602
Pyridine	BDL	UG/KG-DW	440	1	8270	07/12	23602
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.67	1	8260	06/21	23605
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
1,1-Dichloroethane	BDL	UG/KG-DW	6.7	1	8260	06/21	23605

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
1,2-Dichloroethane	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
1,2-Dichloropropane	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	13	1	8260	06/21	23605
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	67	1	8260	06/21	23605
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	13	1	8260	06/21	23605
2-Hexanone	BDL	UG/KG-DW	67	1	8260	06/21	23605
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	67	1	8260	06/21	23605
Acetone	BDL	UG/KG-DW	67	1	8260	06/21	23605
Acrolein	BDL	UG/KG-DW	270	1	8260	06/21	23605
Acrylonitrile	BDL	UG/KG-DW	130	1	8260	06/21	23605
Benzene	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Bromodichloromethane	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Bromoform	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Bromomethane	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Carbon tetrachloride	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Chloroform	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Chlorobenzene	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Chloroethane	BDL	UG/KG-DW	13	1	8260	06/21	23605
Chloromethane	BDL	UG/KG-DW	13	1	8260	06/21	23605
Carbon disulfide	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Dichlorodifluoromethane	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Dibromochloromethane	BDL	UG/KG-DW	13	1	8260	06/21	23605
Dibromomethane	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Ethylbenzene	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Ethyl methacrylate	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Iodomethane	BDL	UG/KG-DW	6.7	1	8260	06/21	23605

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Unit followed by 'DW' signifies Results in Dry Weight.

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Methylene chloride	43	UG/KG-DW	6.7	1	8260	06/21	23605
o-Xylene	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Styrene	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Trichloroethene	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Trichlorofluoromethane	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Tetrachloroethene	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Toluene	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.7	1	8260	06/21	23605
Vinyl acetate	BDL	UG/KG-DW	13	1	8260	06/21	23605
Vinyl chloride	BDL	UG/KG-DW	13	1	8260	06/21	23605
ET CHEM							
CHEMICAL							
Cyanide, Total	13	MG/KG-DW	1.3	1	9012	06/21	23187
PHYSICAL							
Percent Solids	75	%	4	1	160.3	06/13	23024

92000

OMMENTS

01 Results for semivolatile organics by method 8270 should be considered estimates due to matrix spike recovery outside the project limits. Surrogate recoveries were in control

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.

03 Results for Styrene, ethylmethacrylate, chloroethane, 2-hexanone, acetone, iodomethane, 4-methyl-2-pentanone, 2-butanone, 1,4-dichloro-2-butene, (conti.)

04 1,2,3-trichloropropane, 1,1,2,2-TCA, vinyl acetate, tetrachloroethene and difluorodichloromethane sould be considered estimates due to spike recoveries.

05 Bromomethane and 1,1,2,2-TCA were detected in the method blank. Sample results were reported without blank correction.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960610-CO-01A-SL0004 (2-4), Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14777
Date Collected: 06/10/96 15:55
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006353

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.2	1	6010	06/17	23063
Arsenic, Total	19	MG/KG-DW	1.2	10	6020	06/21	23174
Barium, Total	250	MG/KG-DW	1.2	1	6010	06/17	23063
Beryllium, Total	2.8	MG/KG-DW	0.62	1	6010	06/17	23063
Cadmium, Total	3.2	MG/KG-DW	0.62	1	6010	06/17	23063
Chromium, Total	14	MG/KG-DW	1.2	1	6010	06/17	23063
Copper, Total	31	MG/KG-DW	3.1	1	6010	06/17	23063
Mercury, Total	BDL	MG/KG-DW	0.041	1	7471	06/14	23034
Nickel, Total	8.5	MG/KG-DW	5.0	1	6010	06/17	23063
Lead, Total	39	MG/KG-DW	6.2	1	6010	06/17	23063
Antimony, Total	BDL	MG/KG-DW	6.2	1	6010	06/17	23063
Selenium, Total	BDL	MG/KG-DW	62	1	6010	06/17	23063
Thallium, Total	BDL	MG/KG-DW	62	1	6010	06/17	23063
Zinc, Total	78	MG/KG-DW	2.5	1	6010	06/17	23063
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23602
1,2-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23602
1,3-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23602
1,4-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23602
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23602
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23602
2,4,6-Trichlorophenol	BDL	UG/KG-DW	410	1	8270	07/12	23602
2,4-Dinitrophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23602
2,4-Dinitrotoluene	BDL	UG/KG-DW	410	1	8270	07/12	23602
2,6-Dichlorophenol	BDL	UG/KG-DW	410	1	8270	07/12	23602
2,6-Dinitrotoluene	BDL	UG/KG-DW	410	1	8270	07/12	23602
2-Chloronaphthalene	BDL	UG/KG-DW	410	1	8270	07/12	23602

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Unit followed by 'DW' signifies Results in Dry Weight.

.stribution of Report:
harles A. Jones - Sloss Industries

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Laboratory Director

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	410	1	8270	07/12	23602
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	410	1	8270	07/12	23602
2-Methylnaphthalene	BDL	UG/KG-DW	410	1	8270	07/12	23602
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	410	1	8270	07/12	23602
2-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/12	23602
2-Nitrophenol	BDL	UG/KG-DW	410	1	8270	07/12	23602
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	410	1	8270	07/12	23602
3-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/12	23602
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2100	1	8270	07/12	23602
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	410	1	8270	07/12	23602
4-Chloro-3-methylphenol	BDL	UG/KG-DW	410	1	8270	07/12	23602
4-Chloroaniline	BDL	UG/KG-DW	820	1	8270	07/12	23602
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	410	1	8270	07/12	23602
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	410	1	8270	07/12	23602
4-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/12	23602
4-Nitrophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23602
Acenaphthene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Acenaphthylene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Anthracene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Benzyl alcohol	BDL	UG/KG-DW	410	1	8270	07/12	23602
Benzo(a)anthracene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Benzo(a)pyrene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Benzo (b) fluoranthene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Benzo (k) fluoranthene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Benzo (g,h,i) perylene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Chrysene	BDL	UG/KG-DW	410	1	8270	07/12	23602
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	410	1	8270	07/12	23602
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	410	1	8270	07/12	23602
Dibenzofuran	BDL	UG/KG-DW	410	1	8270	07/12	23602
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	410	1	8270	07/12	23602

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

ıstribution of Report:
ıarles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

tention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
st Proj: TF0320.014
mple Desc: 960610-CO-01A-SL0004 (2-4), Birmingham, AL

b ID: 96 0006353

Date of Report: 07/26/96
C-of-C Number: C14777
Date Collected: 06/10/96 15:55
Collected By: CST
Date Received: 06/11/96 10:00
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	1200	UG/KG-DW	410	1	8270	07/12	23602
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2100	1	8270	07/12	23602
2,4-Dichlorophenol	BDL	UG/KG-DW	410	1	8270	07/12	23602
Diethylphthalate	BDL	UG/KG-DW	410	1	8270	07/12	23602
2,4-Dimethylphenol	BDL	UG/KG-DW	410	1	8270	07/12	23602
Dimethylphthalate	BDL	UG/KG-DW	410	1	8270	07/12	23602
n-Nitrosodimethylamine	BDL	UG/KG-DW	410	1	8270	07/12	23602
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	410	1	8270	07/12	23602
Di-n-octylphthalate	BDL	UG/KG-DW	410	1	8270	07/12	23602
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	410	1	8270	07/12	23602
Fluorene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Fluoranthene	480	UG/KG-DW	410	1	8270	07/12	23602
Hexachlorocyclopentadiene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Hexachlorobutadiene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Hexachlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Hexachloroethane	BDL	UG/KG-DW	410	1	8270	07/12	23602
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Isophorone	BDL	UG/KG-DW	410	1	8270	07/12	23602
Naphthalene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Nitrobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Pentachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23602
Phenol	BDL	UG/KG-DW	410	1	8270	07/12	23602
Phenanthrene	BDL	UG/KG-DW	410	1	8270	07/12	23602
Pyrene	660	UG/KG-DW	410	1	8270	07/12	23602
Pyridine	BDL	UG/KG-DW	410	1	8270	07/12	23602
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.62	1	8260	06/21	23605
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
1,1-Dichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23605

te 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
arles A. Jones - Sloss Industries

Respectfully Submitted
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Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

tention: Kathy Thalman
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ıb ID: 96 0006353

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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
1,2-Dichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
1,2-Dichloropropane	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	12	1	8260	06/21	23605
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	62	1	8260	06/21	23605
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	12	1	8260	06/21	23605
2-Hexanone	BDL	UG/KG-DW	62	1	8260	06/21	23605
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	62	1	8260	06/21	23605
Acetone	980	UG/KG-DW	62	1	8260	06/21	23605
Acrolein	BDL	UG/KG-DW	250	1	8260	06/21	23605
Acrylonitrile	BDL	UG/KG-DW	120	1	8260	06/21	23605
Benzene	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Bromodichloromethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Bromoform	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Bromomethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Carbon tetrachloride	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Chloroform	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Chlorobenzene	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Chloroethane	BDL	UG/KG-DW	12	1	8260	06/21	23605
Chloromethane	BDL	UG/KG-DW	12	1	8260	06/21	23605
Carbon disulfide	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Dichlorodifluoromethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Dibromochloromethane	BDL	UG/KG-DW	12	1	8260	06/21	23605
Dibromomethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Ethylbenzene	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Ethyl methacrylate	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Iodomethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23605

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Unit followed by 'DW' signifies Results in Dry Weight.

ıstribution of Report:
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Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
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FL-DEP CompQAP: 900359G

ab ID: 96 0006353

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Methylene chloride	55	UG/KG-DW	6.2	1	8260	06/21	23605
o-Xylene	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Styrene	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Trichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Trichlorofluoromethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Tetrachloroethene	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Toluene	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.2	1	8260	06/21	23605
Vinyl acetate	BDL	UG/KG-DW	12	1	8260	06/21	23605
Vinyl chloride	BDL	UG/KG-DW	12	1	8260	06/21	23605
ET CHEM							
CHEMICAL							
Cyanide, Total	7.8	MG/KG-DW	1.2	1	9012	06/21	23187
PHYSICAL							
Percent Solids	80	%	.01	1	160.3	06/14	23040

OMMENTS

01 Results for semivolatile organics by method 8270 should be considered estimates due to matrix spike recovery outside the project limits. Surrogate recoveries were in control

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

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Laboratory Director

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Environmental Testing Services

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Tampa FL 33618
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FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

b ID: 96 0006353

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.

03 Results for Styrene, ethylmethacrylate, chloroethane, 2-hexanone, acetone, iodomethane, 4-methyl-2-pentanone, 2-butanone, 1,4-dichloro-2-butene, (conti.)

04 1,2,3-trichloropropane, 1,1,2,2-TCA, vinyl acetate, tetrachloroethene and difluorodichloromethane sould be considered estimates due to spike recoveries.

05 Bromomethane and 1,1,2,2-TCA were detected in the method blank. Sample results were reported without blank correction.

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Unit followed by 'DW' signifies Results in Dry Weight.

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Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

ANALYSIS REPORT

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/31/96 SAMPLE CUSTODY REPORT Page: 1

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14776

Lab ID : 96 0006344 Collected: 06/08/96 00:00 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960608-CO-01A-TB0006, Birmingham, AL

Analysis Procedures	Det Date Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
8260	06/19/96 23:36	HLS	14	days	11 Days 23 Hr 35 Mn	N/A

Respectfully Submitted
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Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/31/96 SAMPLE CUSTODY REPORT

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14776

Lab ID : 96 0006345 Collected: 06/08/96 12:30 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960608-CO-01A-FB0003, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3015	06/12/96	11:53	irw	179	days	3 Days 23 Hr 23 Mn	N/A
3510BNA	06/14/96	13:30	kbh	7	days	6 Days 1 Hr 0 Mn	N/A
7470 Prep	06/12/96	09:30	dsb	27	days	3 Days 21 Hr 0 Mn	N/A
9010 PrepS	06/13/96	10:00	ejp	14	days	4 Days 21 Hr 29 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Cu-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Cr-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Ag-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
As-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Ba-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Be-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Cu-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Zn-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Sb-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Tl-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Pb-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Ni-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Hg/7470	06/13/96	12:13	dsb	28	days	1 Days 2 Hr 42 Mn	N/A
Se-GF/7740	06/19/96	19:04	jmn	180	days	7 Days 7 Hr 11 Mn	N/A
8260	06/20/96	00:27	HLS	14	days	11 Days 11 Hr 57 Mn	N/A
8270	07/08/96	17:40	SCL	40	days	24 Days 4 Hr 9 Mn	N/A
CN-T/9012	06/17/96	10:30	ejp	14	days	4 Days 0 Hr 29 Mn	N/A

Respectfully Submitted
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Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

Report Date: 07/31/96 SAMPLE CUSTODY REPORT

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14776

Lab ID : 96 0006346 Collected: 06/08/96 12:45 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960608-CO-01A-SLEB03, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3015	06/12/96	11:53	irw	179	days	3 Days 23 Hr 8 Mn	N/A
3510BNA	06/14/96	19:00	kjk	7	days	6 Days 6 Hr 15 Mn	N/A
7470 Prep	06/12/96	09:30	dsb	27	days	3 Days 20 Hr 44 Mn	N/A
9010 PrepS	06/13/96	15:00	ejp	14	days	5 Days 2 Hr 15 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Cd-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Cr-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Ag-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
As-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Ba-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Be-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Cu-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Zn-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Sb-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Tl-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Pb-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Ni-MS/6020	06/17/96	11:59	jmn	180	days	5 Days 0 Hr 6 Mn	N/A
Hg/7470	06/13/96	12:13	dsb	28	days	1 Days 2 Hr 42 Mn	N/A
Se-GF/7740	06/19/96	19:04	jmn	180	days	7 Days 7 Hr 11 Mn	N/A
8260	06/20/96	14:54	HLS	14	days	12 Days 2 Hr 8 Mn	N/A
8270	07/08/96	19:37	SCL	40	days	23 Days 0 Hr 36 Mn	N/A
CN-T/9012	06/17/96	10:30	ejp	14	days	3 Days 19 Hr 30 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

ANALYSIS REPORT

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 1

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14749

Lab ID : 96 0006240 Collected: 06/07/96 00:00 Received: 06/08/96 11:30

Cust Proj No: TF0320.014
Smpl Desc: 960607-CO-12-TB0004, Birmingham, AL

Analysis Procedures	Det Date Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
8260	06/13/96 00:30	HLS	14	days	6 Days 0 Hr 29 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14749

Lab ID : 96 0006241 Collected: 06/07/96 10:45 Received: 06/08/96 11:30

Cust Proj No: TF0320.014
Smpl Desc: 960607-CO-12-SL0001 (0.5-1.5), Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3051	06/11/96	08:59	irw	179	days	3 Days 22 Hr 14 Mn	N/A
3550/8270	06/11/96	20:25	srs	14	days	4 Days 9 Hr 40 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	6 Days 23 Hr 30 Mn	N/A
9010 PrepS	06/18/96	12:00	ejp	14	days	11 Days 1 Hr 14 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
% Solids/160.3	06/11/96	10:15	rfb	7	days	3 Days 23 Hr 30 Mn	N/A
Cr/6010	06/13/96	10:51	jmn	180	days	6 Days 0 Hr 6 Mn	N/A
Cu/6010	06/13/96	10:51	jmn	180	days	6 Days 0 Hr 6 Mn	N/A
Be/6010	06/13/96	10:51	jmn	180	days	6 Days 0 Hr 6 Mn	N/A
Ag/6010	06/13/96	10:51	jmn	180	days	6 Days 0 Hr 6 Mn	N/A
Ba/6010	06/13/96	10:51	jmn	180	days	6 Days 0 Hr 6 Mn	N/A
Cd/6010	06/13/96	10:51	jmn	180	days	6 Days 0 Hr 6 Mn	N/A
Zn/6010	06/13/96	10:51	jmn	180	days	6 Days 0 Hr 6 Mn	N/A
Sb/6010	06/13/96	10:51	jmn	180	days	6 Days 0 Hr 6 Mn	N/A
Pb/6010	06/13/96	10:51	jmn	180	days	6 Days 0 Hr 6 Mn	N/A
Tl/6010	06/13/96	10:51	jmn	180	days	6 Days 0 Hr 6 Mn	N/A
Ni/6010	06/13/96	10:51	jmn	180	days	6 Days 0 Hr 6 Mn	N/A
Se/6010	06/13/96	10:51	jmn	180	days	6 Days 0 Hr 6 Mn	N/A
As-MS/6020	06/13/96	16:32	jmn	180	days	6 Days 5 Hr 46 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	7 Days 4 Hr 23 Mn	N/A
8260	06/10/96	14:30	HLS	14	days	3 Days 3 Hr 45 Mn	N/A
8270	07/08/96	22:11	SCL	40	days	31 Days 11 Hr 26 Mn	N/A
CN-T/9012	06/20/96	18:00	ejp	14	days	13 Days 7 Hr 14 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 3

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14749

Lab ID : 96 0006242 Collected: 06/07/96 11:00 Received: 06/08/96 11:30

Cust Proj No: TF0320.014
Smpl Desc: 960607-CO-12-SL0002 MS/MSD(0.5-1.5), Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3051	06/11/96	08:59	irw	179	days	3 Days 21 Hr 58 Mn	N/A
3550/8270	06/11/96	20:25	srs	14	days	4 Days 9 Hr 24 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	6 Days 23 Hr 15 Mn	N/A
9010 PrepS	06/18/96	12:00	ejp	14	days	11 Days 1 Hr 0 Mn	N/A

ysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
% Solids/160.3	06/11/96	10:15	rfb	7	days	3 Days 23 Hr 15 Mn	N/A
Cr/6010	06/13/96	10:51	jmn	180	days	5 Days 23 Hr 51 Mn	N/A
Cu/6010	06/13/96	10:51	jmn	180	days	5 Days 23 Hr 51 Mn	N/A
Be/6010	06/13/96	10:51	jmn	180	days	5 Days 23 Hr 51 Mn	N/A
Ag/6010	06/13/96	10:51	jmn	180	days	5 Days 23 Hr 51 Mn	N/A
Ba/6010	06/13/96	10:51	jmn	180	days	5 Days 23 Hr 51 Mn	N/A
Cd/6010	06/13/96	10:51	jmn	180	days	5 Days 23 Hr 51 Mn	N/A
Zn/6010	06/13/96	10:51	jmn	180	days	5 Days 23 Hr 51 Mn	N/A
Sb/6010	06/13/96	10:51	jmn	180	days	5 Days 23 Hr 51 Mn	N/A
Pb/6010	06/13/96	10:51	jmn	180	days	5 Days 23 Hr 51 Mn	N/A
Tl/6010	06/13/96	10:51	jmn	180	days	5 Days 23 Hr 51 Mn	N/A
Ni/6010	06/13/96	10:51	jmn	180	days	5 Days 23 Hr 51 Mn	N/A
Se/6010	06/13/96	10:51	jmn	180	days	5 Days 23 Hr 51 Mn	N/A
As-MS/6020	06/13/96	16:32	jmn	180	days	6 Days 5 Hr 32 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	7 Days 4 Hr 9 Mn	N/A
8260	06/10/96	15:36	HLS	14	days	3 Days 4 Hr 36 Mn	N/A
8270	07/08/96	22:50	SCL	40	days	31 Days 11 Hr 50 Mn	N/A
CN-T/9012	06/20/96	18:00	ejp	14	days	13 Days 7 Hr 0 Mn	N/A

Respectfully Submitted
Center For c.
Reviewed and Approved by:

Chris Given
Laboratory Director

000289

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14749

Lab ID : 96 0006243 Collected: 06/07/96 00:00 Received: 06/08/96 11:30

Cust Proj No: TF0320.014
Smpl Desc: 960607-CO-12-SL9002, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3051	06/11/96	08:59	irw	179	days	4 Days 8 Hr 59 Mn	N/A
3550/8270	06/11/96	20:25	srs	14	days	4 Days 20 Hr 24 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	7 Days 10 Hr 14 Mn	N/A
9010 PrepS	06/18/96	12:00	ejp	14	days	11 Days 12 Hr 0 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
% Solids/160.3	06/11/96	10:15	rfb	7	days	4 Days 10 Hr 14 Mn	N/A
Cr/6010	06/13/96	10:51	jmn	180	days	6 Days 10 Hr 50 Mn	N/A
Cu/6010	06/13/96	10:51	jmn	180	days	6 Days 10 Hr 50 Mn	N/A
Be/6010	06/13/96	10:51	jmn	180	days	6 Days 10 Hr 50 Mn	N/A
Ag/6010	06/13/96	10:51	jmn	180	days	6 Days 10 Hr 50 Mn	N/A
Ba/6010	06/13/96	10:51	jmn	180	days	6 Days 10 Hr 50 Mn	N/A
Cd/6010	06/13/96	10:51	jmn	180	days	6 Days 10 Hr 50 Mn	N/A
Zn/6010	06/13/96	10:51	jmn	180	days	6 Days 10 Hr 50 Mn	N/A
Sb/6010	06/13/96	10:51	jmn	180	days	6 Days 10 Hr 50 Mn	N/A
Pb/6010	06/13/96	10:51	jmn	180	days	6 Days 10 Hr 50 Mn	N/A
Tl/6010	06/13/96	10:51	jmn	180	days	6 Days 10 Hr 50 Mn	N/A
Ni/6010	06/13/96	10:51	jmn	180	days	6 Days 10 Hr 50 Mn	N/A
Se/6010	06/13/96	10:51	jmn	180	days	6 Days 10 Hr 50 Mn	N/A
As-MS/6020	06/13/96	16:32	jmn	180	days	6 Days 16 Hr 32 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	7 Days 15 Hr 9 Mn	N/A
8260	06/10/96	16:36	HLS	14	days	3 Days 16 Hr 36 Mn	N/A
8270	07/08/96	23:28	SCL	40	days	31 Days 23 Hr 28 Mn	N/A
CN-T/9012	06/20/96	18:00	ejp	14	days	13 Days 18 Hr 0 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 5

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14749

Lab ID : 96 0006244 Collected: 06/07/96 14:15 Received: 06/08/96 11:30

Cust Proj No: TF0320.014
Smpl Desc: 960607-CO-02A-PW0001, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3015	06/10/96	11:34	dsb	179	days	2 Days 21 Hr 18 Mn	N/A
3510BNA	06/11/96	16:00	kbh	7	days	4 Days 1 Hr 45 Mn	N/A
7470 Prep	06/12/96	09:30	dsb	27	days	4 Days 19 Hr 14 Mn	N/A
9010 PrepS	06/13/96	10:00	ejp	14	days	5 Days 19 Hr 45 Mn	N/A

lysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Se-GFdis/270.2	06/19/96	19:04	jmn	180	days	12 Days 4 Hr 48 Mn	N/A
Zn-MS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Sb-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Pb-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Pb-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Ni-MS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Ni-disMS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Tl-disMS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Tl-MS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Zn-disMS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Sb-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Cd-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Cd-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Be-MS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Ag-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Ag-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
As-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
As-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Ba-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Ba-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Cu-MS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Cu-disMS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Be-disMS/6020	06/13/96	12:20	jmn	180	days	5 Days 22 Hr 5 Mn	N/A
Cr-MS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A
Cr-disMS/6020	06/12/96	14:01	jmn	180	days	4 Days 23 Hr 46 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

000291

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 6

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14749

Hg-dis/7470	06/13/96 13:02	dsb	28 days	5 Days 22 Hr 47 Mn	N/A
Hg/7470	06/13/96 12:13	dsb	28 days	5 Days 21 Hr 58 Mn	N/A
Se-GF/7740	06/19/96 19:04	jmn	180 days	12 Days 4 Hr 48 Mn	N/A
8260	06/19/96 21:53	HLS	14 days	12 Days 7 Hr 38 Mn	N/A
8270	07/03/96 03:16	SCL	40 days	25 Days 13 Hr 0 Mn	N/A
CN-T/9012	06/17/96 10:30	ejp	14 days	9 Days 20 Hr 15 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

ANALYSIS REPORT

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 1

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14775

Lab ID : 96 0006336 Collected: 06/08/96 00:00 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960608-CO-01A-TB0005, Birmingham, AL

Analysis Procedures	Det Date Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
8260	06/19/96 22:45	HLS	14	days	11 Days 22 Hr 45 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 2

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14775

Lab ID : 96 0006337 Collected: 06/08/96 13:15 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960608-CO-01A-SL0001 (0.-0.1), Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3050	06/12/96	10:30	dsb	179	days	3 Days 21 Hr 15 Mn	N/A
3550/8270	06/20/96	18:45	kjk	14	days	12 Days 5 Hr 30 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	5 Days 21 Hr 0 Mn	N/A
9010 PrepS	06/19/96	10:00	ejp	14	days	10 Days 20 Hr 44 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
% Solids/160.3	06/13/96	13:30	rfb	7	days	5 Days 0 Hr 15 Mn	N/A
Cr/6010	06/17/96	10:20	jmn	180	days	8 Days 21 Hr 4 Mn	N/A
Cu/6010	06/17/96	10:20	jmn	180	days	8 Days 21 Hr 4 Mn	N/A
Be/6010	06/17/96	10:20	jmn	180	days	8 Days 21 Hr 4 Mn	N/A
Ag/6010	06/17/96	10:20	jmn	180	days	8 Days 21 Hr 4 Mn	N/A
Ba/6010	06/17/96	10:20	jmn	180	days	8 Days 21 Hr 4 Mn	N/A
Cd/6010	06/17/96	10:20	jmn	180	days	8 Days 21 Hr 4 Mn	N/A
Zn/6010	06/17/96	10:20	jmn	180	days	8 Days 21 Hr 4 Mn	N/A
Sb/6010	06/17/96	10:20	jmn	180	days	8 Days 21 Hr 4 Mn	N/A
Pb/6010	06/17/96	10:20	jmn	180	days	8 Days 21 Hr 4 Mn	N/A
Tl/6010	06/17/96	10:20	jmn	180	days	8 Days 21 Hr 4 Mn	N/A
Ni/6010	06/17/96	10:20	jmn	180	days	8 Days 21 Hr 4 Mn	N/A
Se/6010	06/17/96	10:20	jmn	180	days	8 Days 21 Hr 4 Mn	N/A
As-MS/6020	06/24/96	11:15	jmn	180	days	15 Days 22 Hr 0 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	6 Days 1 Hr 54 Mn	N/A
8260	06/12/96	23:50	HLS	14	days	4 Days 10 Hr 34 Mn	N/A
8270	07/11/96	17:25	HLS	40	days	33 Days 4 Hr 9 Mn	N/A
CN-T/9012	06/20/96	18:00	ejp	14	days	12 Days 4 Hr 45 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 3

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14775

Lab ID : 96 0006338 Collected: 06/08/96 13:30 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960608-CO-01A-SL0002 MS/MSD (0.-0.1), Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3050	06/12/96	10:30	dsb	179	days	3 Days 21 Hr 0 Mn	N/A
3550/8270	06/20/96	18:45	kjk	14	days	12 Days 5 Hr 15 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	5 Days 20 Hr 44 Mn	N/A
9010 PrepS	06/14/96	11:30	ejp	14	days	5 Days 22 Hr 0 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Solids/160.3	06/13/96	13:30	rfb	7	days	5 Days 0 Hr 0 Mn	N/A
Cr/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 50 Mn	N/A
Cu/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 50 Mn	N/A
Be/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 50 Mn	N/A
Ag/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 50 Mn	N/A
Ba/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 50 Mn	N/A
Cd/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 50 Mn	N/A
Zn/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 50 Mn	N/A
Sb/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 50 Mn	N/A
Pb/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 50 Mn	N/A
Tl/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 50 Mn	N/A
Ni/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 50 Mn	N/A
Se/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 50 Mn	N/A
As-MS/6020	06/21/96	08:05	jmn	180	days	12 Days 18 Hr 35 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	6 Days 1 Hr 39 Mn	N/A
8260	06/13/96	00:44	HLS	14	days	4 Days 11 Hr 14 Mn	N/A
8270	07/11/96	11:06	HLS	40	days	32 Days 21 Hr 36 Mn	N/A
CN-T/9012	06/20/96	18:00	ejp	14	days	12 Days 4 Hr 30 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14775

Lab ID : 96 0006339 Collected: 06/08/96 13:45 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960608-CO-01A-SL0003 (0.-0.1), Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3050	06/12/96	10:30	dsb	179	days	3 Days 20 Hr 44 Mn	N/A
3550/8270	06/20/96	18:45	kjk	14	days	12 Days 4 Hr 59 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	5 Days 20 Hr 30 Mn	N/A
9010 PrepS	06/19/96	10:00	ejp	14	days	10 Days 20 Hr 15 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
% Solids/160.3	06/13/96	13:30	rfb	7	days	4 Days 23 Hr 44 Mn	N/A
Cr/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 35 Mn	N/A
Cu/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 35 Mn	N/A
Be/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 35 Mn	N/A
Ag/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 35 Mn	N/A
Ba/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 35 Mn	N/A
Cd/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 35 Mn	N/A
Zn/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 35 Mn	N/A
Sb/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 35 Mn	N/A
Pb/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 35 Mn	N/A
Tl/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 35 Mn	N/A
Ni/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 35 Mn	N/A
Se/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 35 Mn	N/A
As-MS/6020	06/21/96	08:05	jmn	180	days	12 Days 18 Hr 20 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	6 Days 1 Hr 23 Mn	N/A
8260	06/13/96	03:20	HLS	14	days	4 Days 13 Hr 34 Mn	N/A
8270	07/11/96	14:16	HLS	40	days	33 Days 0 Hr 31 Mn	N/A
CN-T/9012	06/20/96	18:00	ejp	14	days	12 Days 4 Hr 14 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14775

Lab ID : 96 0006340 Collected: 06/08/96 14:15 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960608-CO-01B-SL0001 (0.-0.1), Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3050	06/12/96	10:30	dsb	179	days	3 Days 20 Hr 15 Mn	N/A
3550/8270	06/20/96	18:45	kjk	14	days	12 Days 4 Hr 30 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	5 Days 19 Hr 59 Mn	N/A
9010 PrepS	06/19/96	10:00	ejp	14	days	10 Days 19 Hr 45 Mn	N/A

lysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
% Solids/160.3	06/13/96	13:30	rfb	7	days	4 Days 23 Hr 15 Mn	N/A
Cr/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 5 Mn	N/A
Cu/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 5 Mn	N/A
Be/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 5 Mn	N/A
Ag/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 5 Mn	N/A
Ba/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 5 Mn	N/A
Cd/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 5 Mn	N/A
Zn/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 5 Mn	N/A
Sb/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 5 Mn	N/A
Pb/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 5 Mn	N/A
Tl/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 5 Mn	N/A
Ni/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 5 Mn	N/A
Se/6010	06/17/96	10:20	jmn	180	days	8 Days 20 Hr 5 Mn	N/A
As-MS/6020	06/21/96	08:05	jmn	180	days	12 Days 17 Hr 50 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	6 Days 0 Hr 54 Mn	N/A
8260	06/18/96	18:42	HLS	14	days	10 Days 4 Hr 27 Mn	N/A
8270	07/11/96	19:31	HLS	40	days	33 Days 5 Hr 15 Mn	N/A
CN-T/9012	06/20/96	18:00	ejp	14	days	12 Days 3 Hr 45 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 6

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14775

Lab ID : 96 0006341 Collected: 06/08/96 14:30 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960608-CO-01B-SL0002 (0.-0.1), Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3050	06/12/96	10:30	dsb	179	days	3 Days 19 Hr 59 Mn	N/A
3550/8270	06/20/96	18:45	kjk	14	days	12 Days 4 Hr 14 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	5 Days 19 Hr 45 Mn	N/A
9010 PrepS	06/19/96	10:00	ejp	14	days	10 Days 19 Hr 30 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
% Solids/160.3	06/13/96	13:30	rfb	7	days	4 Days 22 Hr 59 Mn	N/A
Cr/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 50 Mn	N/A
Cu/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 50 Mn	N/A
Be/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 50 Mn	N/A
Ag/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 50 Mn	N/A
Ba/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 50 Mn	N/A
Cd/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 50 Mn	N/A
Zn/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 50 Mn	N/A
Sb/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 50 Mn	N/A
Pb/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 50 Mn	N/A
Tl/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 50 Mn	N/A
Ni/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 50 Mn	N/A
Se/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 50 Mn	N/A
As-MS/6020	06/21/96	08:05	jmn	180	days	12 Days 17 Hr 35 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	6 Days 0 Hr 38 Mn	N/A
8260	06/18/96	19:38	HLS	14	days	10 Days 5 Hr 8 Mn	N/A
8270	07/10/96	21:20	HLS	40	days	32 Days 6 Hr 49 Mn	N/A
CN-T/9012	06/20/96	18:00	ejp	14	days	12 Days 3 Hr 29 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 7

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14775

Lab ID : 96 0006342 Collected: 06/08/96 14:45 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960608-CO-01B-SL0003 (0.-0.1), Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3050	06/12/96	10:30	dsb	179	days	3 Days 19 Hr 45 Mn	N/A
3550/8270	06/20/96	18:45	kjk	14	days	12 Days 4 Hr 0 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	5 Days 19 Hr 30 Mn	N/A
9010 PrepS	06/19/96	10:00	ejp	14	days	10 Days 19 Hr 14 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
% Solids/160.3	06/13/96	13:30	rfb	7	days	4 Days 22 Hr 45 Mn	N/A
Cr/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 34 Mn	N/A
Cu/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 34 Mn	N/A
Be/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 34 Mn	N/A
Ag/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 34 Mn	N/A
Ba/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 34 Mn	N/A
Cd/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 34 Mn	N/A
Zn/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 34 Mn	N/A
Sb/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 34 Mn	N/A
Pb/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 34 Mn	N/A
Tl/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 34 Mn	N/A
Ni/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 34 Mn	N/A
Se/6010	06/17/96	10:20	jmn	180	days	8 Days 19 Hr 34 Mn	N/A
As-MS/6020	06/21/96	08:05	jmn	180	days	12 Days 17 Hr 19 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	6 Days 0 Hr 24 Mn	N/A
8260	06/18/96	20:32	HLS	14	days	10 Days 5 Hr 46 Mn	N/A
8270	07/11/96	15:19	HLS	40	days	33 Days 0 Hr 33 Mn	N/A
CN-T/9012	06/20/96	18:00	ejp	14	days	12 Days 3 Hr 15 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14775

Lab ID : 96 0006343 Collected: 06/08/96 00:00 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960608-CO-01A-SL9002, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3050	06/12/96	10:30	dsb	179	days	4 Days 10 Hr 30 Mn	N/A
3550/8270	06/20/96	18:45	kjk	14	days	12 Days 18 Hr 45 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	6 Days 10 Hr 14 Mn	N/A
9010 PrepS	06/19/96	10:00	ejp	14	days	11 Days 10 Hr 0 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
% Solids/160.3	06/13/96	13:30	rfb	7	days	5 Days 13 Hr 30 Mn	N/A
Cr/6010	06/17/96	10:20	jmn	180	days	9 Days 10 Hr 20 Mn	N/A
Cu/6010	06/17/96	10:20	jmn	180	days	9 Days 10 Hr 20 Mn	N/A
Be/6010	06/17/96	10:20	jmn	180	days	9 Days 10 Hr 20 Mn	N/A
Ag/6010	06/17/96	10:20	jmn	180	days	9 Days 10 Hr 20 Mn	N/A
Ba/6010	06/17/96	10:20	jmn	180	days	9 Days 10 Hr 20 Mn	N/A
Cd/6010	06/17/96	10:20	jmn	180	days	9 Days 10 Hr 20 Mn	N/A
Zn/6010	06/17/96	10:20	jmn	180	days	9 Days 10 Hr 20 Mn	N/A
Sb/6010	06/17/96	10:20	jmn	180	days	9 Days 10 Hr 20 Mn	N/A
Pb/6010	06/17/96	10:20	jmn	180	days	9 Days 10 Hr 20 Mn	N/A
Tl/6010	06/17/96	10:20	jmn	180	days	9 Days 10 Hr 20 Mn	N/A
Ni/6010	06/17/96	10:20	jmn	180	days	9 Days 10 Hr 20 Mn	N/A
Se/6010	06/17/96	10:20	jmn	180	days	9 Days 10 Hr 20 Mn	N/A
As-MS/6020	06/21/96	08:05	jmn	180	days	13 Days 8 Hr 5 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	6 Days 15 Hr 9 Mn	N/A
8260	06/20/96	22:31	HLS	14	days	12 Days 22 Hr 30 Mn	N/A
8270	07/11/96	18:28	HLS	40	days	33 Days 18 Hr 27 Mn	N/A
CN-T/9012	06/20/96	18:00	ejp	14	days	12 Days 18 Hr 0 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

ANALYSIS REPORT

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 1

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14777

Lab ID : 96 0006347 Collected: 06/10/96 00:00 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960610-CO-02A-TB0007, Birmingham, AL

Analysis Procedures	Det Date Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
8260	06/20/96 15:50	HLS	14	days	10 Days 15 Hr 49 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 2

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14777

Lab ID : 96 0006348 Collected: 06/10/96 10:15 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960610-CO-02A-FB0004, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3015	06/12/96	11:53	irw	179	days	2 Days 1 Hr 38 Mn	N/A
3510BNA	06/14/96	13:30	kbh	7	days	4 Days 3 Hr 15 Mn	N/A
7470 Prep	06/12/96	09:30	dsb	27	days	1 Days 23 Hr 15 Mn	N/A
9010 PrepS	06/19/96	16:30	ejp	14	days	9 Days 6 Hr 15 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Cd-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 43 Mn	N/A
Cr-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 43 Mn	N/A
Ag-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 43 Mn	N/A
As-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 43 Mn	N/A
Ba-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 43 Mn	N/A
Be-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 43 Mn	N/A
Cu-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 43 Mn	N/A
Zn-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 43 Mn	N/A
Sb-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 43 Mn	N/A
Tl-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 43 Mn	N/A
Pb-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 43 Mn	N/A
Ni-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 43 Mn	N/A
Hg/7470	06/13/96	12:13	dsb	28	days	3 Days 1 Hr 57 Mn	N/A
Se-GF/7740	06/19/96	19:04	jmn	180	days	9 Days 8 Hr 48 Mn	N/A
8260	06/20/96	16:43	HLS	14	days	10 Days 6 Hr 27 Mn	N/A
8270	07/08/96	18:19	SCL	40	days	28 Days 8 Hr 3 Mn	N/A
CN-T/9012	06/20/96	18:30	ejp	14	days	10 Days 8 Hr 15 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 3

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14777

Lab ID : 96 0006349 Collected: 06/10/96 10:45 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960610-CO-02A-SLEB04, Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3015	06/12/96	11:53	irw	179	days	2 Days 1 Hr 7 Mn	N/A
3510BNA	06/14/96	19:00	kjk	7	days	4 Days 8 Hr 15 Mn	N/A
7470 Prep	06/12/96	09:30	dsb	27	days	1 Days 22 Hr 45 Mn	N/A
9010 PrepS	06/19/96	16:30	ejp	14	days	9 Days 5 Hr 44 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
Cu-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 14 Mn	N/A
Cr-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 14 Mn	N/A
Ag-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 14 Mn	N/A
As-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 14 Mn	N/A
Ba-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 14 Mn	N/A
Be-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 14 Mn	N/A
Cu-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 14 Mn	N/A
Zn-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 14 Mn	N/A
Sb-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 14 Mn	N/A
Tl-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 14 Mn	N/A
Pb-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 14 Mn	N/A
Ni-MS/6020	06/17/96	11:59	jmn	180	days	7 Days 1 Hr 14 Mn	N/A
Hg/7470	06/13/96	12:13	dsb	28	days	3 Days 1 Hr 27 Mn	N/A
Se-GF/7740	06/19/96	19:04	jmn	180	days	9 Days 8 Hr 19 Mn	N/A
8260	06/20/96	17:36	HLS	14	days	10 Days 6 Hr 51 Mn	N/A
8270	07/08/96	20:16	SCL	40	days	28 Days 9 Hr 31 Mn	N/A
CN-T/9012	06/20/96	18:30	ejp	14	days	10 Days 7 Hr 45 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14777

Lab ID : 96 0006350 Collected: 06/10/96 11:25 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960610-CO-02A-SL0001 (2-4), Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3050	06/12/96	10:30	dsb	179	days	1 Days 23 Hr 5 Mn	N/A
3550/8270	06/20/96	18:45	kjk	14	days	10 Days 7 Hr 20 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	3 Days 22 Hr 50 Mn	N/A
9010 PrepS	06/20/96	12:00	ejp	14	days	10 Days 0 Hr 35 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
%solids/160.3	06/13/96	13:30	rfb	28	days	3 Days 2 Hr 5 Mn	N/A
Cr/6010	06/17/96	10:20	jmn	180	days	6 Days 22 Hr 54 Mn	N/A
Cu/6010	06/17/96	10:20	jmn	180	days	6 Days 22 Hr 54 Mn	N/A
Be/6010	06/17/96	10:20	jmn	180	days	6 Days 22 Hr 54 Mn	N/A
Ag/6010	06/17/96	10:20	jmn	180	days	6 Days 22 Hr 54 Mn	N/A
Ba/6010	06/17/96	10:20	jmn	180	days	6 Days 22 Hr 54 Mn	N/A
Cd/6010	06/17/96	10:20	jmn	180	days	6 Days 22 Hr 54 Mn	N/A
Zn/6010	06/17/96	10:20	jmn	180	days	6 Days 22 Hr 54 Mn	N/A
Sb/6010	06/17/96	10:20	jmn	180	days	6 Days 22 Hr 54 Mn	N/A
Pb/6010	06/17/96	10:20	jmn	180	days	6 Days 22 Hr 54 Mn	N/A
Tl/6010	06/17/96	10:20	jmn	180	days	6 Days 22 Hr 54 Mn	N/A
Ni/6010	06/17/96	10:20	jmn	180	days	6 Days 22 Hr 54 Mn	N/A
Se/6010	06/17/96	10:20	jmn	180	days	6 Days 22 Hr 54 Mn	N/A
As-MS/6020	06/21/96	08:05	jmn	180	days	10 Days 20 Hr 39 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	4 Days 3 Hr 44 Mn	N/A
8260	06/20/96	23:25	HLS	14	days	10 Days 12 Hr 0 Mn	N/A
8270	07/11/96	20:34	HLS	40	days	31 Days 9 Hr 9 Mn	N/A
CN-T/9012	06/21/96	18:00	ejp	14	days	11 Days 6 Hr 35 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 5

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14777

Lab ID : 96 0006351 Collected: 06/10/96 14:05 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960610-CO-02A-SL0001 (16-18), Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3050	06/12/96	10:30	dsb	179	days	1 Days 20 Hr 24 Mn	N/A
3550/8270	06/20/96	18:45	kjk	14	days	10 Days 4 Hr 39 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	3 Days 20 Hr 10 Mn	N/A
9010 PrepS	06/20/96	16:30	ejp	14	days	10 Days 2 Hr 24 Mn	N/A

lysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
olids/160.3	06/13/96	13:30	rfb	28	days	2 Days 23 Hr 24 Mn	N/A
Cr/6010	06/17/96	10:20	jmn	180	days	6 Days 20 Hr 15 Mn	N/A
Cu/6010	06/17/96	10:20	jmn	180	days	6 Days 20 Hr 15 Mn	N/A
Be/6010	06/17/96	10:20	jmn	180	days	6 Days 20 Hr 15 Mn	N/A
Ag/6010	06/17/96	10:20	jmn	180	days	6 Days 20 Hr 15 Mn	N/A
Ba/6010	06/17/96	10:20	jmn	180	days	6 Days 20 Hr 15 Mn	N/A
Cd/6010	06/17/96	10:20	jmn	180	days	6 Days 20 Hr 15 Mn	N/A
Zn/6010	06/17/96	10:20	jmn	180	days	6 Days 20 Hr 15 Mn	N/A
Sb/6010	06/17/96	10:20	jmn	180	days	6 Days 20 Hr 15 Mn	N/A
Pb/6010	06/17/96	10:20	jmn	180	days	6 Days 20 Hr 15 Mn	N/A
Tl/6010	06/17/96	10:20	jmn	180	days	6 Days 20 Hr 15 Mn	N/A
Ni/6010	06/17/96	10:20	jmn	180	days	6 Days 20 Hr 15 Mn	N/A
Se/6010	06/17/96	10:20	jmn	180	days	6 Days 20 Hr 15 Mn	N/A
As-MS/6020	06/21/96	08:05	jmn	180	days	10 Days 18 Hr 0 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	4 Days 1 Hr 3 Mn	N/A
8260	06/21/96	00:19	HLS	14	days	10 Days 10 Hr 14 Mn	N/A
8270	07/11/96	16:22	HLS	40	days	31 Days 2 Hr 17 Mn	N/A
CN-T/9012	06/21/96	18:00	ejp	14	days	11 Days 3 Hr 54 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 6

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14777

Lab ID : 96 0006352 Collected: 06/10/96 15:00 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960610-CO-02A-SL0002 (2-4), Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3050	06/12/96	10:30	dsb	179	days	1 Days 19 Hr 30 Mn	N/A
3550/8270	06/20/96	18:45	kjk	14	days	10 Days 3 Hr 45 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	3 Days 19 Hr 14 Mn	N/A
9010 PrepS	06/20/96	16:30	ejp	14	days	10 Days 1 Hr 30 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
%solids/160.3	06/13/96	13:30	rfb	28	days	2 Days 22 Hr 30 Mn	N/A
Cr/6010	06/17/96	10:20	jmn	180	days	6 Days 19 Hr 20 Mn	N/A
Cu/6010	06/17/96	10:20	jmn	180	days	6 Days 19 Hr 20 Mn	N/A
Be/6010	06/17/96	10:20	jmn	180	days	6 Days 19 Hr 20 Mn	N/A
Ag/6010	06/17/96	10:20	jmn	180	days	6 Days 19 Hr 20 Mn	N/A
Ba/6010	06/17/96	10:20	jmn	180	days	6 Days 19 Hr 20 Mn	N/A
Cd/6010	06/17/96	10:20	jmn	180	days	6 Days 19 Hr 20 Mn	N/A
Zn/6010	06/17/96	10:20	jmn	180	days	6 Days 19 Hr 20 Mn	N/A
Sb/6010	06/17/96	10:20	jmn	180	days	6 Days 19 Hr 20 Mn	N/A
Pb/6010	06/17/96	10:20	jmn	180	days	6 Days 19 Hr 20 Mn	N/A
Tl/6010	06/17/96	10:20	jmn	180	days	6 Days 19 Hr 20 Mn	N/A
Ni/6010	06/17/96	10:20	jmn	180	days	6 Days 19 Hr 20 Mn	N/A
Se/6010	06/17/96	10:20	jmn	180	days	6 Days 19 Hr 20 Mn	N/A
As-MS/6020	06/21/96	08:05	jmn	180	days	10 Days 17 Hr 5 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	4 Days 0 Hr 9 Mn	N/A
8260	06/21/96	01:11	HLS	14	days	10 Days 10 Hr 11 Mn	N/A
8270	07/12/96	12:53	HLS	40	days	31 Days 21 Hr 53 Mn	N/A
CN-T/9012	06/21/96	18:00	ejp	14	days	11 Days 3 Hr 0 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
SM Environmental Testing Services

Report Date: 07/26/96 SAMPLE CUSTODY REPORT Page: 7

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Chain of Custody Number: C14777

Lab ID : 96 0006353 Collected: 06/10/96 15:55 Received: 06/11/96 10:00

Cust Proj No: TF0320.014
Smpl Desc: 960610-CO-01A-SL0004 (2-4), Birmingham, AL

Prep Procedures	Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
3050	06/12/96	10:30	dsb	179	days	1 Days 18 Hr 35 Mn	N/A
3550/8270	06/20/96	18:45	kjk	14	days	10 Days 2 Hr 50 Mn	N/A
7471 Prep	06/14/96	10:15	dsb	27	days	3 Days 18 Hr 20 Mn	N/A
9010 PrepS	06/20/96	16:30	ejp	14	days	10 Days 0 Hr 35 Mn	N/A

Analysis Procedures	Det Date	Time	Ast	AlwHT	Unit	Actual Hold Time	Exceeded Hold Time
%Solids/160.3	06/14/96	15:30	rfb	28	days	3 Days 23 Hr 35 Mn	N/A
Cr/6010	06/17/96	10:20	jmn	180	days	6 Days 18 Hr 24 Mn	N/A
Cu/6010	06/17/96	10:20	jmn	180	days	6 Days 18 Hr 24 Mn	N/A
Be/6010	06/17/96	10:20	jmn	180	days	6 Days 18 Hr 24 Mn	N/A
Ag/6010	06/17/96	10:20	jmn	180	days	6 Days 18 Hr 24 Mn	N/A
Ba/6010	06/17/96	10:20	jmn	180	days	6 Days 18 Hr 24 Mn	N/A
Cd/6010	06/17/96	10:20	jmn	180	days	6 Days 18 Hr 24 Mn	N/A
Zn/6010	06/17/96	10:20	jmn	180	days	6 Days 18 Hr 24 Mn	N/A
Sb/6010	06/17/96	10:20	jmn	180	days	6 Days 18 Hr 24 Mn	N/A
Pb/6010	06/17/96	10:20	jmn	180	days	6 Days 18 Hr 24 Mn	N/A
Tl/6010	06/17/96	10:20	jmn	180	days	6 Days 18 Hr 24 Mn	N/A
Ni/6010	06/17/96	10:20	jmn	180	days	6 Days 18 Hr 24 Mn	N/A
Se/6010	06/17/96	10:20	jmn	180	days	6 Days 18 Hr 24 Mn	N/A
As-MS/6020	06/21/96	08:05	jmn	180	days	10 Days 16 Hr 9 Mn	N/A
Hg/7471	06/14/96	15:09	dsb	28	days	3 Days 23 Hr 14 Mn	N/A
8260	06/21/96	02:05	HLS	14	days	10 Days 10 Hr 9 Mn	N/A
8270	07/12/96	13:56	HLS	40	days	31 Days 22 Hr 0 Mn	N/A
CN-T/9012	06/21/96	18:00	ejp	14	days	11 Days 2 Hr 5 Mn	N/A

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

port Date: 07/26/96 QUALITY CONTROL REPORT BY LAB PROJECT NUMBER

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Project Number: 9606124

****
->> S P I K E A C C U R A C Y D A T A <<---
****

QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23006	cr	6010	29.2	133	100	104	130	70		06/13/96	jmn	96	0006243
23006	Ag	6010	0	8	10	80	130	70		06/13/96	jmn	96	0006243
23006	Pb	6010	30	107	100	77	130	70		06/13/96	jmn	96	0006243
23006	Zn	6010	28.3	115	100	87	130	70		06/13/96	jmn	96	0006243
23006	Be	6010	1.4	18.8	20	87	130	70		06/13/96	jmn	96	0006243
23006	Se	6010	0	71.7	100	72	130	70		06/13/96	jmn	96	0006243
23006	Tl	6010	0	89.5	100	90	130	70		06/13/96	jmn	96	0006243
23006	Ni	6010	7.1	92.9	100	86	130	70		06/13/96	jmn	96	0006243
23006	Cd	6010	0	33	40	83	130	70		06/13/96	jmn	96	0006243
23006	Cu	6010	5.8	92.9	100	87	130	70		06/13/96	jmn	96	0006243
23006	Ba	6010	78	167.9	100	90	130	70		06/13/96	jmn	96	0006243
23006	Sb	6010	0	15.3	100	15	130	70	*	06/13/96	jmn	96	0006243
23019	As-MS	6020	8.9	111	100	102	130	70		06/13/96	jmn	96	0006243
23034	Hg	7471	.065	.489	.4	106	130	70		06/14/96	dsb	96	0006243
23063	Sb	6010	0	76	100	76	130	70		06/17/96	jmn	96	0006343
23063	Se	6010	0	92.4	100	92	130	70		06/17/96	jmn	96	0006343
23063	Cr	6010	1.3	95.3	100	94	130	70		06/17/96	jmn	96	0006343
23063	Pb	6010	0	105	100	105	130	70		06/17/96	jmn	96	0006343
23063	Cd	6010	0	38.5	40	96	130	70		06/17/96	jmn	96	0006343
23063	Ba	6010	17.5	111.7	100	94	130	70		06/17/96	jmn	96	0006343
23063	Ag	6010	0	9.5	10	95	130	70		06/17/96	jmn	96	0006343
23063	Cu	6010	6.1	98.1	100	92	130	70		06/17/96	jmn	96	0006343
23063	Ni	6010	6.3	97.2	100	91	130	70		06/17/96	jmn	96	0006343
23063	Zn	6010	18.7	114	100	95	130	70		06/17/96	jmn	96	0006343
23063	Tl	6010	0	90.1	100	90	130	70		06/17/96	jmn	96	0006343
23063	Be	6010	0	18.7	20	94	130	70		06/17/96	jmn	96	0006343
23174	As-MS	6020	.7	10.7	10	100	130	70		06/21/96	jmn	96	0006343
23175	As-MS	6020	1.4	12.6	10	112	130	70		06/24/96	jmn	96	0006337
23187	CN-T	9012	0	19.77	19.94	99	125	75		06/20/96	ejp	96	0006338
23523	14dcbsb	8270	0	3229.13	5000	65	112	46		07/09/96	SCL	96	0006242
23523	Phenolb	8270	0	4351.00	5000	87	112	37		07/09/96	SCL	96	0006242
23523	4nitpheb	8270	0	4232.21	5000	85	130	10		07/09/96	SCL	96	0006242
23523	PCPb	8270	0	1843.11	5000	37	107	10		07/09/96	SCL	96	0006242
23523	Pyreneb	8270	0	5426.27	3333	163	139	33	*	07/09/96	SCL	96	0006242

Report Date: 07/26/96 QUALITY CONTROL REPORT BY LAB PROJECT NUMBER Page: 2

Kathy Thalman
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14497 North Dale Mabry
Suite 115
Tampa FL 33618

Project Number: 9606124

****
->> S P I K E A C C U R A C Y D A T A continued <<---
****

QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23523	4cl3mepb	8270	0	4227.83	5000	85	112	38		07/09/96	SCL	96	0006242
23523	nNdpamnb	8270	0	2673.18	3333	80	150	30		07/09/96	SCL	96	0006242
23523	Acenaphb	8270	0	2726.45	3333	82	108	51		07/09/96	SCL	96	0006242
23523	124tcbsb	8270	0	3408.27	3333	102	107	48		07/09/96	SCL	96	0006242
23523	24Dintob	8270	0	2855.66	3333	86	111	35		07/09/96	SCL	96	0006242
23523	2Clphenb	8270	0	4467.51	5000	89	105	45		07/09/96	SCL	96	0006242
23602	4Cl3mepb	8270	0	2397.14	5000	48	112	38		07/10/96	HLS	96	0006338
23602	2Clphenb	8270	0	2088.55	5000	42	105	45	*	07/10/96	HLS	96	0006338
23602	24Dintob	8270	0	1467.45	3333	44	111	35		07/10/96	HLS	96	0006338
23602	Dipropam	8270	0	1765.37	3333	53	140	27		07/10/96	HLS	96	0006338
23602	4Nitpheb	8270	0	2422.01	5000	48	130	10		07/10/96	HLS	96	0006338
23602	Acenaphb	8270	0	1270.84	3333	38	108	51	*	07/10/96	HLS	96	0006338
23602	PCPb	8270	0	637.87	5000	13	107	10		07/10/96	HLS	96	0006338
23602	Phenolb	8270	0	2163.04	5000	43	112	37		07/10/96	HLS	96	0006338
23602	Pyreneb	8270	0	1191.11	3333	36	139	33		07/10/96	HLS	96	0006338
23602	124TCBsb	8270	0	1309.06	3333	39	107	48	*	07/10/96	HLS	96	0006338
23602	14DCBsb	8270	0	1208.52	3333	36	112	46	*	07/10/96	HLS	96	0006338
23605	Vinylclb	8260	0	64.757	50	130	251	10		06/20/96	HLS	96	0006353
23605	oXyleneb	8260	0	74.06	50	148	150	50		06/20/96	HLS	96	0006353
23605	Styreneb	8260	0	31.343	50	63	101	89	*	06/20/96	HLS	96	0006353
23605	TCEb	8260	0	41.224	50	82	140	43		06/20/96	HLS	96	0006353
23605	Dibrmthb	8260	0	32.668	50	65	150	50		06/20/96	HLS	96	0006353
23605	EDBb	8260	0	45.928	50	92	153	86		06/20/96	HLS	96	0006353
23605	Ethbenzb	8260	0	74.948	50	150	162	37		06/20/96	HLS	96	0006353
23605	ethylmab	8260	0	101.788	100	102	87	47	*	06/20/96	HLS	96	0006353
23605	iodomthb	8260	0	100.049	100	100	105	77		06/20/96	HLS	96	0006353
23605	Brmethb	8260	0	44.182	50	88	242	10		06/20/96	HLS	96	0006353
23605	Carbtetb	8260	0	62.368	50	125	140	70		06/20/96	HLS	96	0006353
23605	Chlformb	8260	0	58.828	50	118	138	51		06/20/96	HLS	96	0006353
23605	Clbenzb	8260	0	46.34	50	93	138	54		06/20/96	HLS	96	0006353
23605	Clethanb	8260	0	71.772	50	144	136	44	*	06/20/96	HLS	96	0006353
23605	2Hexanob	8260	0	129.854	100	130	86	22	*	06/20/96	HLS	96	0006353
23605	4Me2Penb	8260	0	121.966	100	122	125	64		06/20/96	HLS	96	0006353
23605	Acetoneb	8260	784.467	2369.28	1000	158	92	29	*	06/20/96	HLS	96	0006353

000309

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Project Number: 9606124

****
->> S P I K E A C C U R A C Y D A T A continued <<---
****

C Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23605	Acrolenb	8260	0	1294.46	1000	129	164	22		06/20/96	HLS	96	0006353
23605	Acrylonb	8260	0	940.037	1000	94	145	61		06/20/96	HLS	96	0006353
23605	14dc2beb	8260	0	15.894	100	16	178	79	*	06/20/96	HLS	96	0006353
23605	2Butanob	8260	0	106.926	100	107	111	10		06/20/96	HLS	96	0006353
23605	2Ceve	8260	0	42.141	100	42	184	10		06/20/96	HLS	96	0006353
23605	12DCAb	8260	0	45.313	50	91	155	49		06/20/96	HLS	96	0006353
23605	12Dcprob	8260	0	63.402	50	127	210	10		06/20/96	HLS	96	0006353
23605	11DCAb	8260	0	64.828	50	130	155	59		06/20/96	HLS	96	0006353
23605	11DCEb	8260	0	62.149	50	124	161	36		06/20/96	HLS	96	0006353
23605	123Tclpb	8260	0	144.338	50	289	105	43	*	06/20/96	HLS	96	0006353
23605	111TCAb	8260	0	67.223	50	134	162	52		06/20/96	HLS	96	0006353
23605	1122TCAb	8260	0	133.802	50	268	157	46	*	06/20/96	HLS	96	0006353
23605	112TCAb	8260	0	51.174	50	102	150	52		06/20/96	HLS	96	0006353
23605	Tclflmtb	8260	0	74.987	50	150	181	17		06/20/96	HLS	96	0006353
23605	Tetcletb	8260	0	177.471	50	355	148	64	*	06/20/96	HLS	96	0006353
23605	Tolueneb	8260	0	44.221	50	88	141	51		06/20/96	HLS	96	0006353
23605	tr12DCEb	8260	0	37.866	50	76	156	54		06/20/96	HLS	96	0006353
23605	tr13dcpb	8260	0	13.131	50	26	183	17		06/20/96	HLS	96	0006353
23605	Vinylace	8260	0	11.896	100	12	150	50	*	06/20/96	HLS	96	0006353
23605	mpXylenb	8260	0	66.603	50	133	150	50		06/20/96	HLS	96	0006353
23605	Mthenecb	8260	43.943	70.116	50	52	221	10		06/20/96	HLS	96	0006353
23605	Clmthanb	8260	0	62.37	50	125	273	10		06/20/96	HLS	96	0006353
23605	Crbndisb	8260	0	77.577	100	78	244	35		06/20/96	HLS	96	0006353
23605	cs13dcpb	8260	0	21.689	50	43	227	10		06/20/96	HLS	96	0006353
23605	Dcldflmb	8260	0	80.229	50	160	150	50	*	06/20/96	HLS	96	0006353
23605	Dibrclmb	8260	0	62.823	50	126	140	53		06/20/96	HLS	96	0006353
23605	Benzeneb	8260	0	57.395	50	115	150	48		06/20/96	HLS	96	0006353
23605	Brdiclmb	8260	0	48.724	50	97	155	35		06/20/96	HLS	96	0006353
23605	Brformb	8260	0	41.995	50	84	169	45		06/20/96	HLS	96	0006353
23674	tr12DCEb	8260	0	54.47	50	109	156	54		06/10/96	HLS	96	0006242
23674	tr13dcpb	8260	0	40.433	50	81	183	17		06/10/96	HLS	96	0006242
23674	Vinylace	8260	0	43.782	100	44	150	50	*	06/10/96	HLS	96	0006242
23674	111TCAb	8260	0	57.257	50	115	162	52		06/10/96	HLS	96	0006242
23674	1122TCAb	8260	0	57.856	50	116	157	46		06/10/96	HLS	96	0006242

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->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23674	112TCAb	8260	0	46.814	50	94	150	52		06/10/96	HLS	96	0006242
23674	Vinylclb	8260	0	51.643	50	103	251	10		06/10/96	HLS	96	0006242
23674	11DCAb	8260	0	56.043	50	112	155	59		06/10/96	HLS	96	0006242
23674	11DCEb	8260	0	50.166	50	100	161	36		06/10/96	HLS	96	0006242
23674	123Tclpb	8260	0	59.88	50	120	105	43	*	06/10/96	HLS	96	0006242
23674	2Hexanob	8260	0	99.147	100	99	86	22	*	06/10/96	HLS	96	0006242
23674	4Me2Penb	8260	0	95.206	100	95	125	64		06/10/96	HLS	96	0006242
23674	12Dcprob	8260	0	50.08	50	100	210	10		06/10/96	HLS	96	0006242
23674	12DCAb	8260	0	47.091	50	94	155	49		06/10/96	HLS	96	0006242
23674	Brmethb	8260	0	43.172	50	86	242	10		06/10/96	HLS	96	0006242
23674	Carbtetb	8260	0	47.026	50	94	140	70		06/10/96	HLS	96	0006242
23674	Chlformb	8260	0	55.117	50	110	138	51		06/10/96	HLS	96	0006242
23674	Tclflmtb	8260	0	56.146	50	112	181	17		06/10/96	HLS	96	0006242
23674	Tetcletb	8260	0	51.696	50	103	148	64		06/10/96	HLS	96	0006242
23674	Tolueneb	8260	0	49.45	50	99	141	51		06/10/96	HLS	96	0006242
23674	mpXyleneb	8260	0	52.002	50	104	150	50		06/10/96	HLS	96	0006242
23674	Mthenecb	8260	0	52.155	50	104	221	10		06/10/96	HLS	96	0006242
23674	Dcldflmb	8260	0	48.236	50	96	150	50		06/10/96	HLS	96	0006242
23674	Dibrclmb	8260	0	48.592	50	97	140	53		06/10/96	HLS	96	0006242
23674	Acetoneb	8260	134.925	2234.98	1000	210	92	29	*	06/10/96	HLS	96	0006242
23674	Benzeneb	8260	0	55.175	50	110	150	48		06/10/96	HLS	96	0006242
23674	Brdiclmb	8260	0	48.756	50	98	155	35		06/10/96	HLS	96	0006242
23674	Brformb	8260	0	42.989	50	86	169	45		06/10/96	HLS	96	0006242
23674	Clbenzb	8260	0	49.525	50	99	138	54		06/10/96	HLS	96	0006242
23674	Clethanb	8260	0	55.777	50	112	136	44		06/10/96	HLS	96	0006242
23674	Clmthanb	8260	0	49.778	50	100	273	10		06/10/96	HLS	96	0006242
23674	Crbndisb	8260	0	100.402	100	100	244	35		06/10/96	HLS	96	0006242
23674	cs13dcpb	8260	0	41.776	50	84	227	10		06/10/96	HLS	96	0006242
23674	Dibrmthb	8260	0	43.936	50	88	150	50		06/10/96	HLS	96	0006242
23674	EDBb	8260	0	47.293	50	95	153	86		06/10/96	HLS	96	0006242
23674	Ethbenzb	8260	0	56.507	50	113	162	37		06/10/96	HLS	96	0006242
23674	oXyleneb	8260	0	53.094	50	106	150	50		06/10/96	HLS	96	0006242
23674	Styreneb	8260	0	46.391	50	93	101	89		06/10/96	HLS	96	0006242
23674	TCEb	8260	0	49.484	50	99	140	43		06/10/96	HLS	96	0006242

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-->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23674	2Butanob	8260	0	115.884	100	116	111	10	*	06/10/96	HLS	96	0006242
23674	2Ceve	8260	0	116.322	100	116	184	10		06/10/96	HLS	96	0006242
23675	111TCAb	8260	0	109.129	50	218	162	52	*	06/12/96	HLS	96	0006338
23675	1122TCAb	8260	0	213.896	50	428	157	46	*	06/12/96	HLS	96	0006338
23675	112TCAb	8260	0	67.955	50	136	150	52		06/12/96	HLS	96	0006338
23675	11DCAb	8260	0	92.2	50	184	155	59	*	06/12/96	HLS	96	0006338
23675	11DCEb	8260	0	80.707	50	161	161	36		06/12/96	HLS	96	0006338
23675	123Tclpb	8260	0	0	50	1	105	43	*	06/12/96	HLS	96	0006338
23675	12DCAb	8260	0	66.039	50	132	155	49		06/12/96	HLS	96	0006338
23675	12Dcprob	8260	0	103.503	50	207	210	10		06/12/96	HLS	96	0006338
23675	14dc2beb	8260	0	0	100	1	178	79	*	06/12/96	HLS	96	0006338
23675	2Butanob	8260	0	179.697	100	180	111	10	*	06/12/96	HLS	96	0006338
23675	2Ceve	8260	0	24.517	100	25	184	10		06/12/96	HLS	96	0006338
23675	2Hexanob	8260	0	236.318	100	236	86	22	*	06/12/96	HLS	96	0006338
23675	4Me2Penb	8260	0	189.805	100	190	125	64	*	06/12/96	HLS	96	0006338
23675	Acetoneb	8260	0	2436.62	1000	244	92	29	*	06/12/96	HLS	96	0006338
23675	oXyleneb	8260	0	78.928	50	158	150	50	*	06/12/96	HLS	96	0006338
23675	Acrolenb	8260	0	603.863	1000	60	164	22		06/12/96	HLS	96	0006338
23675	Acrylonb	8260	0	1678.25	1000	168	145	61	*	06/12/96	HLS	96	0006338
23675	Benzeneb	8260	0	67.981	50	136	150	48		06/12/96	HLS	96	0006338
23675	Brdiclmb	8260	0	66.464	50	133	155	35		06/12/96	HLS	96	0006338
23675	Brformb	8260	0	86.181	50	172	169	45	*	06/12/96	HLS	96	0006338
23675	Brmethb	8260	0	84.935	50	170	242	10		06/12/96	HLS	96	0006338
23675	Carbtetb	8260	0	123.557	50	247	140	70	*	06/12/96	HLS	96	0006338
23675	Chlformb	8260	0	79.001	50	158	138	51	*	06/12/96	HLS	96	0006338
23675	Clbenzb	8260	0	48.445	50	97	138	54		06/12/96	HLS	96	0006338
23675	Clethanb	8260	0	118.045	50	236	136	44	*	06/12/96	HLS	96	0006338
23675	Clmthanb	8260	0	134.201	50	268	273	10		06/12/96	HLS	96	0006338
23675	Crbndisb	8260	0	109.859	100	110	244	35		06/12/96	HLS	96	0006338
23675	cs13dcpb	8260	0	19.258	50	39	227	10		06/12/96	HLS	96	0006338
23675	Dcldflmb	8260	0	137.103	50	274	150	50	*	06/12/96	HLS	96	0006338
23675	Dibrclmb	8260	0	123.407	50	247	140	53	*	06/12/96	HLS	96	0006338
23675	Dibrmthb	8260	0	49.879	50	100	150	50		06/12/96	HLS	96	0006338
23675	EDBb	8260	0	58.097	50	116	153	86		06/12/96	HLS	96	0006338

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->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23675	Ethbenzb	8260	0	92.394	50	185	162	37	*	06/12/96	HLS	96	0006338
23675	ethylmab	8260	0	21.087	100	21	87	47	*	06/12/96	HLS	96	0006338
23675	iodomthb	8260	0	144.253	100	144	105	77	*	06/12/96	HLS	96	0006338
23675	mpXylenb	8260	0	72.513	50	145	150	50		06/12/96	HLS	96	0006338
23675	Mthenecb	8260	0	97.863	50	196	221	10		06/12/96	HLS	96	0006338
23675	Styreneb	8260	0	20.989	50	42	101	89	*	06/12/96	HLS	96	0006338
23675	TCEb	8260	0	41.695	50	83	140	43		06/12/96	HLS	96	0006338
23675	Tclflmtb	8260	0	124.896	50	250	181	17	*	06/12/96	HLS	96	0006338
23675	Tetcletb	8260	0	254.209	50	508	148	64	*	06/12/96	HLS	96	0006338
23675	Tolueneb	8260	0	39.501	50	79	141	51		06/12/96	HLS	96	0006338
23675	tr12DCEb	8260	0	51.063	50	102	156	54		06/12/96	HLS	96	0006338
23675	tr13dcpb	8260	0	13.173	50	26	183	17		06/12/96	HLS	96	0006338
23675	Vinylace	8260	0	0	100	1	150	50	*	06/12/96	HLS	96	0006338
23675	Vinylclb	8260	0	117.589	50	235	251	10		06/12/96	HLS	96	0006338

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->> Q. C. R. S. A C C U R A C Y D A T A <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23006	cr	6010	1000	898	89.8	120	80		06/13/96	jmn
23006	Ag	6010	100	88	88.0	120	80		06/13/96	jmn
23006	Pb	6010	1000	854	85.4	120	80		06/13/96	jmn
23006	Zn	6010	1000	902	90.2	120	80		06/13/96	jmn
23006	Be	6010	200	175	87.5	120	80		06/13/96	jmn
23006	Se	6010	1000	865	86.5	120	80		06/13/96	jmn
23006	Tl	6010	1000	867	86.7	120	80		06/13/96	jmn
23006	Ni	6010	1000	898	89.8	120	80		06/13/96	jmn
23006	Cd	6010	400	357	89.3	120	80		06/13/96	jmn
23006	Cu	6010	1000	892	89.2	120	80		06/13/96	jmn
23006	Ba	6010	1000	889	88.9	120	80		06/13/96	jmn
23006	Sb	6010	1000	820	82.0	120	80		06/13/96	jmn
23019	As-MS	6020	100	115.51	115.5	120	80		06/13/96	jmn

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->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23034	Hg	7471	2.000	1.997	99.9	120	80		06/14/96	dsb
23063	Sb	6010	1000	952	95.2	120	80		06/17/96	jmn
23063	Se	6010	1000	933	93.3	120	80		06/17/96	jmn
23063	Cr	6010	1000	932	93.2	120	80		06/17/96	jmn
23063	Pb	6010	1000	909	90.9	120	80		06/17/96	jmn
23063	Cd	6010	400	380	95.0	120	80		06/17/96	jmn
23063	Ba	6010	1000	932	93.2	120	80		06/17/96	jmn
23063	Ag	6010	100	94	94.0	120	80		06/17/96	jmn
23063	Cu	6010	1000	934	93.4	120	80		06/17/96	jmn
23063	Ni	6010	1000	940	94.0	120	80		06/17/96	jmn
23063	Zn	6010	1000	942	94.2	120	80		06/17/96	jmn
23063	Tl	6010	1000	895	89.5	120	80		06/17/96	jmn
23063	Be	6010	200	191	95.5	120	80		06/17/96	jmn
23174	As-MS	6020	100	103	103.0	120	80		06/21/96	jmn
23175	As-MS	6020	100	113	113.0	120	80		06/24/96	jmn
23187	CN-T	9012	.268	.241	89.9	120	80		06/20/96	ejp
23523	14dcbsb	8270	3333	1766.572	53.0	112	46		07/09/96	SCL
23523	Phenolb	8270	5000	2684.526	53.7	112	37		07/09/96	SCL
23523	4nitpheb	8270	5000	1962.3786	39.2	130	10		07/09/96	SCL
23523	PCPb	8270	5000	2154.68	43.1	107	10		07/09/96	SCL
23523	Pyreneb	8270	3333	1820.7228	54.6	139	33		07/09/96	SCL
23523	4cl3mepb	8270	5000	2686.876	53.7	112	38		07/09/96	SCL
23523	nNdpamnb	8270	3333	1848.244	55.5	150	30		07/09/96	SCL
23523	Acenaphb	8270	3333	1720.6722	51.6	108	51		07/09/96	SCL
23523	124tcbsb	8270	3333	1848.244	55.5	107	48		07/09/96	SCL
23523	24Dintob	8270	3333	1748.312	52.5	111	35		07/09/96	SCL
23523	2Clphenb	8270	5000	2926.912	58.5	105	45		07/09/96	SCL
23602	4Cl3mepb	8270	5000	2665.77	53.3	112	38		07/10/96	HLS
23602	2Clphenb	8270	5000	2826.79	56.5	105	45		07/10/96	HLS
23602	24Dintob	8270	3333	1669.74	50.1	111	35		07/10/96	HLS
23602	Dipropam	8270	3333	1877.92	56.3	140	27		07/10/96	HLS
23602	4Nitpheb	8270	5000	2419.45	48.4	130	10		07/10/96	HLS
23602	Acenaphb	8270	3333	1551.23	46.5	108	51	*	07/10/96	HLS
23602	PCPb	8270	5000	1833.05	36.7	107	10		07/10/96	HLS

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****
->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23602	Phenolb	8270	5000	2930.65	58.6	112	37		07/10/96	HLS
23602	Pyreneb	8270	3333	807.88	24.2	139	33	*	07/10/96	HLS
23602	124TCBsb	8270	3333	1689.77	50.7	107	48		07/10/96	HLS
23602	14DCBsb	8270	3333	1584.19	47.5	112	46		07/10/96	HLS
23605	Vinylclb	8260	50	60.217	120.4	251	10		06/20/96	HLS
23605	oXyleneb	8260	50	51.53	103.1	150	50		06/20/96	HLS
23605	Styreneb	8260	50	49.035	98.1	101	89		06/20/96	HLS
23605	TCEb	8260	50	47.941	95.9	140	43		06/20/96	HLS
23605	Dibrmthb	8260	50	51.005	102.0	150	50		06/20/96	HLS
23605	EDBb	8260	50	53.318	106.6	153	86		06/20/96	HLS
23605	Ethbenzb	8260	50	50.96	101.9	162	37		06/20/96	HLS
23605	ethylmab	8260	100	106.208	106.2	115	47		06/20/96	HLS
23605	iodomthb	8260	100	127.134	127.1	105	77	*	06/20/96	HLS
23605	Brmethb	8260	50	57.846	115.7	242	10		06/20/96	HLS
23605	Carbtetb	8260	50	48.145	96.3	140	70		06/20/96	HLS
23605	Chlformb	8260	50	58.38	116.8	138	51		06/20/96	HLS
23605	Clbenzb	8260	50	50.727	101.5	138	54		06/20/96	HLS
23605	Clethanb	8260	50	62.067	124.1	136	44		06/20/96	HLS
23605	2Hexanob	8260	100	104.38	104.4	86	22	*	06/20/96	HLS
23605	4Me2Penb	8260	100	102.349	102.3	125	64		06/20/96	HLS
23605	Acetoneb	8260	1000	1182.19	118.2	92	29	*	06/20/96	HLS
23605	Acrolenb	8260	1000	1001.17	100.1	164	22		06/20/96	HLS
23605	Acrylonb	8260	1000	1229.98	123.0	145	61		06/20/96	HLS
23605	14dc2beb	8260	100	61.248	61.2	178	79	*	06/20/96	HLS
23605	2Butanob	8260	100	117.297	117.3	115	10	*	06/20/96	HLS
23605	2Ceve	8260	100	79.053	79.1	184	10		06/20/96	HLS
23605	12DCAb	8260	50	52.776	105.6	155	49		06/20/96	HLS
23605	12Dcprob	8260	50	52.52	105.0	210	10		06/20/96	HLS
23605	11DCAb	8260	50	57.985	116.0	155	59		06/20/96	HLS
23605	11DCEb	8260	50	59.265	118.5	161	36		06/20/96	HLS
23605	123Tclpb	8260	50	63.198	126.4	115	43	*	06/20/96	HLS
23605	111TCAb	8260	50	55.814	111.6	162	52		06/20/96	HLS
23605	1122TCAb	8260	50	65.099	130.2	157	46		06/20/96	HLS
23605	112TCAb	8260	50	52.567	105.1	150	52		06/20/96	HLS

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****
->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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C Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23605	Tclflmtb	8260	50	60.27	120.5	181	17		06/20/96	HLS
23605	Tetcletb	8260	50	50.624	101.2	148	64		06/20/96	HLS
23605	Tolueneb	8260	50	48.959	97.9	141	51		06/20/96	HLS
23605	tr12DCEb	8260	50	58.057	116.1	156	54		06/20/96	HLS
23605	tr13dcpb	8260	50	41.71	83.4	183	17		06/20/96	HLS
23605	Vinylace	8260	100	90.067	90.1	150	50		06/20/96	HLS
23605	mpXylenb	8260	50	50.612	101.2	150	50		06/20/96	HLS
23605	Mthenecb	8260	50	59.988	120.0	221	10		06/20/96	HLS
23605	Clmthanb	8260	50	56.486	113.0	273	10		06/20/96	HLS
23605	Crbndisb	8260	100	113.751	113.8	244	35		06/20/96	HLS
23605	cs13dcpb	8260	50	43.255	86.5	227	10		06/20/96	HLS
23605	Dcldflmb	8260	50	59.224	118.4	150	50		06/20/96	HLS
23605	Dibrclmb	8260	50	51.432	102.9	140	53		06/20/96	HLS
23605	Benzeneb	8260	50	52.25	104.5	150	48		06/20/96	HLS
23605	Brdiclmb	8260	50	50.606	101.2	155	35		06/20/96	HLS
23605	Brformb	8260	50	47.934	95.9	169	45		06/20/96	HLS
23674	tr12DCEb	8260	50	55.355	110.7	156	54		06/10/96	HLS
23674	tr13dcpb	8260	50	51.394	102.8	183	17		06/10/96	HLS
23674	Vinylace	8260	100	86.903	86.9	150	50		06/10/96	HLS
23674	111TCAb	8260	50	57.028	114.1	162	52		06/10/96	HLS
23674	1122TCAb	8260	50	54.151	108.3	157	46		06/10/96	HLS
23674	112TCAb	8260	50	52.15	104.3	150	52		06/10/96	HLS
23674	Vinylclb	8260	50	50.97	101.9	251	10		06/10/96	HLS
23674	11DCAb	8260	50	56.144	112.3	155	59		06/10/96	HLS
23674	11DCEb	8260	50	51.959	103.9	161	36		06/10/96	HLS
23674	123Tclpb	8260	50	55.213	110.4	115	43		06/10/96	HLS
23674	2Hexanob	8260	100	102.606	102.6	86	22	*	06/10/96	HLS
23674	4Me2Penb	8260	100	102.632	102.6	125	64		06/10/96	HLS
23674	12Dcprob	8260	50	51.673	103.3	210	10		06/10/96	HLS
23674	12DCAb	8260	50	53.319	106.6	155	49		06/10/96	HLS
23674	Brmethb	8260	50	47.254	94.5	242	10		06/10/96	HLS
23674	Carbtetb	8260	50	49.511	99.0	140	70		06/10/96	HLS
23674	Chlformb	8260	50	55.369	110.7	138	51		06/10/96	HLS
23674	Tclflmtb	8260	50	54.163	108.3	181	17		06/10/96	HLS

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Project Number: 9606124

****
->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23674	Tetcletb	8260	50	49.606	99.2	148	64		06/10/96	HLS
23674	Tolueneb	8260	50	48.877	97.8	141	51		06/10/96	HLS
23674	mpXylenb	8260	50	50.052	100.1	150	50		06/10/96	HLS
23674	Mthenecb	8260	50	52.745	105.5	221	10		06/10/96	HLS
23674	Dcldflmb	8260	50	45.599	91.2	150	50		06/10/96	HLS
23674	Dibrclmb	8260	50	52.836	105.7	140	53		06/10/96	HLS
23674	Acetoneb	8260	1000	1114.68	111.5	92	29	*	06/10/96	HLS
23674	Benzeneb	8260	50	51.457	102.9	150	48		06/10/96	HLS
23674	Brdiclmb	8260	50	51.931	103.9	155	35		06/10/96	HLS
23674	Brformb	8260	50	51.447	102.9	169	45		06/10/96	HLS
23674	Clbenzb	8260	50	51.216	102.4	138	54		06/10/96	HLS
23674	Clethanb	8260	50	52.383	104.8	136	44		06/10/96	HLS
23674	Clmthanb	8260	50	46.082	92.2	273	10		06/10/96	HLS
23674	Crbndisb	8260	100	109.523	109.5	244	35		06/10/96	HLS
23674	cs13dcpb	8260	50	49.766	99.5	227	10		06/10/96	HLS
23674	Dibrmthb	8260	50	52.674	105.3	150	50		06/10/96	HLS
23674	EDBb	8260	50	52.603	105.2	153	86		06/10/96	HLS
23674	Ethbenzb	8260	50	51.368	102.7	162	37		06/10/96	HLS
23674	oXyleneb	8260	50	51.928	103.9	150	50		06/10/96	HLS
23674	Styreneb	8260	50	49.566	99.1	101	89		06/10/96	HLS
23674	TCEb	8260	50	50.76	101.5	140	43		06/10/96	HLS
23674	2Butanob	8260	100	121.866	121.9	115	10	*	06/10/96	HLS
23674	2Ceve	8260	100	121.18	121.2	184	10		06/10/96	HLS
23675	111TCAb	8260	50	57.771	115.5	162	52		06/12/96	HLS
23675	1122TCAb	8260	50	62.774	125.5	157	46		06/12/96	HLS
23675	112TCAb	8260	50	50.558	101.1	150	52		06/12/96	HLS
23675	11DCAb	8260	50	53.808	107.6	155	59		06/12/96	HLS
23675	11DCEb	8260	50	53.729	107.5	161	36		06/12/96	HLS
23675	123Tclpb	8260	50	67.148	134.3	115	43	*	06/12/96	HLS
23675	12DCAb	8260	50	53.381	106.8	155	49		06/12/96	HLS
23675	12Dcprob	8260	50	49.509	99.0	210	10		06/12/96	HLS
23675	14dc2beb	8260	100	71.776	71.8	178	79	*	06/12/96	HLS
23675	2Butanob	8260	100	113.606	113.6	115	10		06/12/96	HLS
23675	2Ceve	8260	100	106.763	106.8	184	10		06/12/96	HLS

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****
->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23675	2Hexanob	8260	100	100.778	100.8	86	22	*	06/12/96	HLS
23675	4Me2Penb	8260	100	95.187	95.2	125	64		06/12/96	HLS
23675	Acetoneb	8260	1000	1246.66	124.7	92	29	*	06/12/96	HLS
23675	oXyleneb	8260	50	49.048	98.1	150	50		06/12/96	HLS
23675	Acrolenb	8260	1000	822.697	82.3	164	22		06/12/96	HLS
23675	Acrylonb	8260	1000	1098	109.8	145	61		06/12/96	HLS
23675	Benzeneb	8260	50	52.557	105.1	150	48		06/12/96	HLS
23675	Brdiclmb	8260	50	50.534	101.1	155	35		06/12/96	HLS
23675	Brformb	8260	50	40.306	80.6	169	45		06/12/96	HLS
23675	Brmethb	8260	50	52.305	104.6	242	10		06/12/96	HLS
23675	Carbtetb	8260	50	49.561	99.1	140	70		06/12/96	HLS
23675	Chlformb	8260	50	56.133	112.3	138	51		06/12/96	HLS
23675	Clbenzb	8260	50	51.458	102.9	138	54		06/12/96	HLS
23675	Clethanb	8260	50	55.306	110.6	136	44		06/12/96	HLS
23675	Clmthanb	8260	50	51.564	103.1	273	10		06/12/96	HLS
23675	Crbndisb	8260	100	99.58	99.6	244	35		06/12/96	HLS
23675	cs13dcpb	8260	50	44.118	88.2	227	10		06/12/96	HLS
23675	Dcldflmb	8260	50	51.566	103.1	150	50		06/12/96	HLS
23675	Dibrclmb	8260	50	46.137	92.3	140	53		06/12/96	HLS
23675	Dibrmthb	8260	50	48.244	96.5	150	50		06/12/96	HLS
23675	EDBb	8260	50	50.515	101.0	153	86		06/12/96	HLS
23675	Ethbenzb	8260	50	50.402	100.8	162	37		06/12/96	HLS
23675	ethylmab	8260	100	100.195	100.2	115	47		06/12/96	HLS
23675	iodomthb	8260	100	129.942	129.9	105	77	*	06/12/96	HLS
23675	mpXylenb	8260	50	49.678	99.4	150	50		06/12/96	HLS
23675	Mthenecb	8260	50	54.911	109.8	221	10		06/12/96	HLS
23675	Styreneb	8260	50	47.983	96.0	101	89		06/12/96	HLS
23675	TCEb	8260	50	50.498	101.0	140	43		06/12/96	HLS
23675	Tclflmtb	8260	50	53.386	106.8	181	17		06/12/96	HLS
23675	Tetcletb	8260	50	48.802	97.6	148	64		06/12/96	HLS
23675	Tolueneb	8260	50	49.002	98.0	141	51		06/12/96	HLS
23675	tr12DCEb	8260	50	55.097	110.2	156	54		06/12/96	HLS
23675	tr13dcpb	8260	50	42.746	85.5	183	17		06/12/96	HLS
23675	Vinylace	8260	100	79.558	79.6	150	50		06/12/96	HLS

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->> Q. C. R. S. A C C U R A C Y D A T A continued <<---

QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23675	Vinylclb	8260	50	52.738	105.5	251	10		06/12/96	HLS

->> P R E C I S I O N D A T A <<---

QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
22952	% Solids	160.3	83.6	83.5	.119688	15		96	0006241	06/11/96	rfb
23006	cr	6010	133	131	1.51515	30		96	0006243	06/13/96	jmn
23006	Ag	6010	8	8.4	4.87804	30		96	0006243	06/13/96	jmn
23006	Pb	6010	107	115	7.20720	30		96	0006243	06/13/96	jmn
23006	Zn	6010	117.4	115	2.06540	30		96	0006243	06/13/96	jmn
23006	Be	6010	18.8	19.1	1.58311	30		96	0006243	06/13/96	jmn
23006	Se	6010	71.1	71.7	.840336	30		96	0006243	06/13/96	jmn
23006	Tl	6010	89.1	89.5	.447928	30		96	0006243	06/13/96	jmn
23006	Ni	6010	95.4	95.6	.209424	30		96	0006243	06/13/96	jmn
23006	Cd	6010	33	34	2.98507	30		96	0006243	06/13/96	jmn
23006	Cu	6010	91.6	92.9	1.40921	30		96	0006243	06/13/96	jmn
23006	Ba	6010	131.7	167.9	24.1655	30		96	0006243	06/13/96	jmn
23006	Sb	6010	4	15.3	117.098	30	*	96	0006243	06/13/96	jmn
23019	As-MS	6020	109	111	1.81818	30		96	0006243	06/13/96	jmn
23024	% Solids	160.3	81.2	80.4	.990099	15		96	0006337	06/13/96	rfb
23034	Hg	7471	.508	.489	3.81143	30		96	0006243	06/14/96	dsb
23040	%solids	160.3	78.4	79.9	1.89513	15		96	0006353	06/14/96	rfb
23040	% Solids	160.3	78.4	79.9	1.89513	15		96	0006353	06/14/96	rfb
23063	Sb	6010	76	71	6.80272	30		96	0006343	06/17/96	jmn
23063	Se	6010	92.4	98.7	6.59340	30		96	0006343	06/17/96	jmn
23063	Cr	6010	95.3	99.7	4.51282	30		96	0006343	06/17/96	jmn
23063	Pb	6010	98.1	105	6.79468	30		96	0006343	06/17/96	jmn
23063	Cd	6010	38.5	40.6	5.30973	30		96	0006343	06/17/96	jmn
23063	Ba	6010	111.7	117	4.63489	30		96	0006343	06/17/96	jmn
23063	Ag	6010	9.5	9.6	1.04712	30		96	0006343	06/17/96	jmn
23063	Cu	6010	98.1	105	6.79468	30		96	0006343	06/17/96	jmn

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->> P R E C I S I O N D A T A continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23063	Ni	6010	97.2	102.5	5.30796	30		96	0006343	06/17/96	jmn
23063	Zn	6010	114	118.2	3.61757	30		96	0006343	06/17/96	jmn
23063	Tl	6010	85.8	90.1	4.88914	30		96	0006343	06/17/96	jmn
23063	Be	6010	18.7	20	6.71834	30		96	0006343	06/17/96	jmn
23174	As-MS	6020	10.7	10.2	4.78468	30		96	0006343	06/21/96	jmn
23175	As-MS	6020	12.6	12.2	3.22580	30		96	0006337	06/24/96	jmn
23187	CN-T	9012	19.483	19.77	1.46230	30		96	0006338	06/20/96	ejp
23523	14dcbsb	8270	3229.13	2885.44	11.2413	28		96	0006242	07/09/96	SCL
23523	Phenolb	8270	5102.47	4351.00	15.8983	36		96	0006242	07/09/96	SCL
23523	4nitpheb	8270	4232.21	3455.50	20.2065	34		96	0006242	07/09/96	SCL
23523	PCPb	8270	1843.11	1208.42	41.5977	89		96	0006242	07/09/96	SCL
23523	Pyreneb	8270	8530.60	5426.27	44.4846	25	*	96	0006242	07/09/96	SCL
23523	4cl3mepb	8270	5023.06	4227.83	17.1925	23		96	0006242	07/09/96	SCL
23523	nNdpamnb	8270	3474.45	2673.18	26.0673	30		96	0006242	07/09/96	SCL
23523	Acenaphb	8270	3381.79	2726.45	21.4577	26		96	0006242	07/09/96	SCL
23523	124tcbsb	8270	3408.27	2876.25	16.9309	28		96	0006242	07/09/96	SCL
23523	24Dintob	8270	2855.66	2250.40	23.7075	29		96	0006242	07/09/96	SCL
23523	2Clphenb	8270	5198.43	4467.51	15.1236	31		96	0006242	07/09/96	SCL
23602	4Cl3mepb	8270	2786.97	2397.14	15.0394	23		96	0006338	07/10/96	HLS
23602	2Clphenb	8270	2289.22	2088.55	9.16768	31		96	0006338	07/10/96	HLS
23602	24Dintob	8270	1864.71	1467.45	23.8439	29		96	0006338	07/10/96	HLS
23602	Dipropam	8270	1870.47	1765.37	5.78133	35		96	0006338	07/10/96	HLS
23602	4Nitpheb	8270	2610.3	2422.01	7.48324	34		96	0006338	07/10/96	HLS
23602	Acenaphb	8270	1578.75	1270.84	21.6108	26		96	0006338	07/10/96	HLS
23602	PCPb	8270	804.55	637.87	23.1111	89		96	0006338	07/10/96	HLS
23602	Phenolb	8270	2817.67	2163.04	26.2866	36		96	0006338	07/10/96	HLS
23602	Pyreneb	8270	1620.92	1191.11	30.5693	25	*	96	0006338	07/10/96	HLS
23602	124TCBsb	8270	1560.7	1309.06	17.5373	28		96	0006338	07/10/96	HLS
23602	14DCBsb	8270	1417.39	1208.52	15.9083	28		96	0006338	07/10/96	HLS
23605	Vinylclb	8260	67.096	64.757	3.54789	65		96	0006353	06/20/96	HLS
23605	oXyleneb	8260	85.578	74.06	14.4301	40		96	0006353	06/20/96	HLS
23605	Styreneb	8260	34.921	31.343	10.7992	40		96	0006353	06/20/96	HLS
23605	TCEb	8260	44.104	41.224	6.75042	27		96	0006353	06/20/96	HLS
23605	Dibrmthb	8260	33.789	32.668	3.37361	40		96	0006353	06/20/96	HLS

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-->> P R E C I S I O N D A T A continued <<---

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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23605	EDBb	8260	48.001	45.928	4.41397	40		96	0006353	06/20/96	HLS
23605	Ethbenzb	8260	84.456	74.948	11.9294	40		96	0006353	06/20/96	HLS
23605	ethylmab	8260	95.707	101.788	6.15813	40		96	0006353	06/20/96	HLS
23605	iodomthb	8260	91.624	100.049	8.79101	40		96	0006353	06/20/96	HLS
23605	Brmethb	8260	45.866	44.182	3.74022	65		96	0006353	06/20/96	HLS
23605	Carbtetb	8260	73.141	62.368	15.9000	40		96	0006353	06/20/96	HLS
23605	Chlformb	8260	59.881	58.828	1.77408	40		96	0006353	06/20/96	HLS
23605	Clbenzb	8260	50.199	46.34	7.99469	33		96	0006353	06/20/96	HLS
23605	Clethanb	8260	70.435	71.772	1.88035	40		96	0006353	06/20/96	HLS
23605	2Hexanob	8260	159.36	129.854	20.4042	40		96	0006353	06/20/96	HLS
23605	4Me2Penb	8260	142.872	121.966	15.7877	49		96	0006353	06/20/96	HLS
23605	Acetoneb	8260	2320.07	2369.28	2.09879	40		96	0006353	06/20/96	HLS
23605	Acrolenb	8260	1084.09	1294.46	17.6889	65		96	0006353	06/20/96	HLS
23605	Acrylonb	8260	1027.83	940.037	8.92265	40		96	0006353	06/20/96	HLS
23605	14dc2beb	8260	13.739	15.894	14.5446	40		96	0006353	06/20/96	HLS
23605	2Butanob	8260	109.529	106.926	2.40511	40		96	0006353	06/20/96	HLS
23605	2Ceve	8260	43.051	42.141	2.13635	65		96	0006353	06/20/96	HLS
23605	12DCAb	8260	48.893	45.313	7.60036	40		96	0006353	06/20/96	HLS
23605	12Dcprob	8260	68.743	63.402	8.08354	65		96	0006353	06/20/96	HLS
23605	11DCAb	8260	65.04	64.828	.326485	40		96	0006353	06/20/96	HLS
23605	11DCEb	8260	62.873	62.149	1.15819	50		96	0006353	06/20/96	HLS
23605	123Tclpb	8260	163.694	144.338	12.5675	40		96	0006353	06/20/96	HLS
23605	111TCAb	8260	68.158	67.223	1.38128	40		96	0006353	06/20/96	HLS
23605	1122TCAb	8260	161.646	133.802	18.8486	40		96	0006353	06/20/96	HLS
23605	112TCAb	8260	55.064	51.174	7.32318	40		96	0006353	06/20/96	HLS
23605	Tclflmtb	8260	81.319	74.987	8.10205	65		96	0006353	06/20/96	HLS
23605	Tetcletb	8260	200.084	177.471	11.9786	40		96	0006353	06/20/96	HLS
23605	Tolueneb	8260	46.983	44.221	6.05675	27		96	0006353	06/20/96	HLS
23605	tr12DCEb	8260	36.197	37.866	4.50697	40		96	0006353	06/20/96	HLS
23605	tr13dcpb	8260	12.862	13.131	2.06978	65		96	0006353	06/20/96	HLS
23605	Vinylace	8260	5.076	11.896	80.3676	40	*	96	0006353	06/20/96	HLS
23605	mpXylenb	8260	75.479	66.603	12.4941	40		96	0006353	06/20/96	HLS
23605	Mthenecb	8260	63.675	70.116	9.62845	65		96	0006353	06/20/96	HLS
23605	Clmthanb	8260	67.29	62.37	7.58907	65		96	0006353	06/20/96	HLS

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-->> P R E C I S I O N D A T A continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23605	Crbndisb	8260	78.816	77.577	1.58446	65		96	0006353	06/20/96	HLS
23605	cs13dcpb	8260	21.783	21.689	.432462	65		96	0006353	06/20/96	HLS
23605	Dcldflmb	8260	84.002	80.229	4.59474	40		96	0006353	06/20/96	HLS
23605	Dibrclmb	8260	70.71	62.823	11.8128	65		96	0006353	06/20/96	HLS
23605	Benzeneb	8260	60.855	57.395	5.85200	27		96	0006353	06/20/96	HLS
23605	Brdiclmb	8260	51.123	48.724	4.80535	40		96	0006353	06/20/96	HLS
23605	Brformb	8260	47.849	41.995	13.0314	40		96	0006353	06/20/96	HLS
23674	tr12DCEb	8260	53.587	54.47	1.63432	40		96	0006242	06/10/96	HLS
23674	tr13dcpb	8260	39.324	40.433	2.78094	65		96	0006242	06/10/96	HLS
23674	Vinylace	8260	41.098	43.782	6.32422	40		96	0006242	06/10/96	HLS
23674	111TCAb	8260	60.687	57.257	5.81632	40		96	0006242	06/10/96	HLS
23674	1122TCAb	8260	60.952	57.856	5.21177	40		96	0006242	06/10/96	HLS
23674	112TCAb	8260	49.924	46.814	6.42973	40		96	0006242	06/10/96	HLS
23674	Vinylclb	8260	53.304	51.643	3.16540	65		96	0006242	06/10/96	HLS
23674	11DCAb	8260	55.885	56.043	.282324	40		96	0006242	06/10/96	HLS
23674	11DCEb	8260	55.193	50.166	9.54261	50		96	0006242	06/10/96	HLS
23674	123Tclpb	8260	59.328	59.88	.926112	40		96	0006242	06/10/96	HLS
23674	2Hexanob	8260	104.813	99.147	5.55599	40		96	0006242	06/10/96	HLS
23674	4Me2Penb	8260	100.693	95.206	5.60186	49		96	0006242	06/10/96	HLS
23674	12Dcprob	8260	52.656	50.08	5.01479	65		96	0006242	06/10/96	HLS
23674	12DCAb	8260	53.724	47.091	13.1587	40		96	0006242	06/10/96	HLS
23674	Brmethb	8260	42.779	43.172	.914474	65		96	0006242	06/10/96	HLS
23674	Carbtetb	8260	54.045	47.026	13.8892	40		96	0006242	06/10/96	HLS
23674	Chlformb	8260	55.058	55.117	.107102	40		96	0006242	06/10/96	HLS
23674	Tclflmtb	8260	58.058	56.146	3.34839	65		96	0006242	06/10/96	HLS
23674	Tetcletb	8260	56.468	51.696	8.82363	40		96	0006242	06/10/96	HLS
23674	Tolueneb	8260	52.546	49.45	6.07082	27		96	0006242	06/10/96	HLS
23674	mpXylenb	8260	57.101	52.002	9.34713	40		96	0006242	06/10/96	HLS
23674	Mthenecb	8260	53.522	52.155	2.58712	65		96	0006242	06/10/96	HLS
23674	Dcldflmb	8260	50.748	48.236	5.07556	40		96	0006242	06/10/96	HLS
23674	Dibrclmb	8260	50.473	48.592	3.79750	65		96	0006242	06/10/96	HLS
23674	Acetoneb	8260	1965.25	2234.98	12.8435	40		96	0006242	06/10/96	HLS
23674	Benzeneb	8260	64.795	55.175	16.0373	27		96	0006242	06/10/96	HLS
23674	Brdiclmb	8260	52.012	48.756	6.46236	40		96	0006242	06/10/96	HLS

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->> PRECISION DATA continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23674	Brformb	8260	42.779	42.989	.489693	40		96	0006242	06/10/96	HLS
23674	Clbenzb	8260	51.813	49.525	4.51558	33		96	0006242	06/10/96	HLS
23674	Clethanb	8260	57.677	55.777	3.34937	40		96	0006242	06/10/96	HLS
23674	Clmthanb	8260	50.923	49.778	2.27405	65		96	0006242	06/10/96	HLS
23674	Crbndisb	8260	108.833	100.402	8.05888	65		96	0006242	06/10/96	HLS
23674	cs13dcpb	8260	44.935	41.776	7.28627	65		96	0006242	06/10/96	HLS
23674	Dibrmthb	8260	48.148	43.936	9.14816	40		96	0006242	06/10/96	HLS
23674	EDBb	8260	49.025	47.293	3.59642	40		96	0006242	06/10/96	HLS
23674	Ethbenzb	8260	63.281	56.507	11.3099	40		96	0006242	06/10/96	HLS
23674	oXyleneb	8260	59.734	53.094	11.7701	40		96	0006242	06/10/96	HLS
23674	Styreneb	8260	47.383	46.391	2.11572	40		96	0006242	06/10/96	HLS
23674	TCEb	8260	51.566	49.484	4.12073	27		96	0006242	06/10/96	HLS
23674	2Butanob	8260	106.35	115.884	8.58014	40		96	0006242	06/10/96	HLS
23674	2Ceve	8260	112.387	116.322	3.44105	65		96	0006242	06/10/96	HLS
23675	111TCAb	8260	111.077	109.129	1.76925	40		96	0006338	06/12/96	HLS
23675	1122TCAb	8260	268.906	213.896	22.7878	40		96	0006338	06/12/96	HLS
23675	112TCAb	8260	69.154	67.955	1.74897	40		96	0006338	06/12/96	HLS
23675	11DCAb	8260	98.562	92.2	6.67009	40		96	0006338	06/12/96	HLS
23675	11DCEb	8260	83.879	80.707	3.85451	50		96	0006338	06/12/96	HLS
23675	12DCAb	8260	70.959	66.039	7.18258	40		96	0006338	06/12/96	HLS
23675	12Dcprob	8260	101.225	103.503	2.22539	65		96	0006338	06/12/96	HLS
23675	2Butanob	8260	198.55	179.697	9.96861	40		96	0006338	06/12/96	HLS
23675	2Ceve	8260	70.29	24.517	96.5603	65	*	96	0006338	06/12/96	HLS
23675	2Hexanob	8260	228.786	236.318	3.23884	40		96	0006338	06/12/96	HLS
23675	4Me2Penb	8260	192.813	189.805	1.57232	49		96	0006338	06/12/96	HLS
23675	Acetoneb	8260	2556.59	2436.62	4.80532	40		96	0006338	06/12/96	HLS
23675	oXyleneb	8260	74.746	78.928	5.44269	40		96	0006338	06/12/96	HLS
23675	Acrolenb	8260	730.031	603.863	18.9172	65		96	0006338	06/12/96	HLS
23675	Acrylonb	8260	1666.52	1678.25	.701393	40		96	0006338	06/12/96	HLS
23675	Benzeneb	8260	68.347	67.981	.536940	27		96	0006338	06/12/96	HLS
23675	Brdiclmb	8260	68.615	66.464	3.18480	40		96	0006338	06/12/96	HLS
23675	Brformb	8260	95.948	86.181	10.7253	40		96	0006338	06/12/96	HLS
23675	Brmethb	8260	83.881	84.935	1.24869	65		96	0006338	06/12/96	HLS
23675	Carbtetb	8260	117.885	123.557	4.69843	40		96	0006338	06/12/96	HLS

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-->> P R E C I S I O N D A T A continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23675	Chlformb	8260	82.922	79.001	4.84304	40		96	0006338	06/12/96	HLS
23675	Clbenzb	8260	52.281	48.445	7.61670	33		96	0006338	06/12/96	HLS
23675	Clethanb	8260	112.081	118.045	5.18324	40		96	0006338	06/12/96	HLS
23675	Clmthanb	8260	145.799	134.201	8.28428	65		96	0006338	06/12/96	HLS
23675	Crbndisb	8260	120.502	109.859	9.24027	65		96	0006338	06/12/96	HLS
23675	cs13dcpb	8260	21.417	19.258	10.6158	65		96	0006338	06/12/96	HLS
23675	Dcldflmb	8260	147.509	137.103	7.31241	40		96	0006338	06/12/96	HLS
23675	Dibrclmb	8260	129.013	123.407	4.44180	65		96	0006338	06/12/96	HLS
23675	Dibrmthb	8260	54.148	49.879	8.20748	40		96	0006338	06/12/96	HLS
23675	EDBb	8260	75.592	58.097	26.1726	40		96	0006338	06/12/96	HLS
23675	Ethbenzb	8260	92.772	92.394	.408282	40		96	0006338	06/12/96	HLS
23675	ethylmab	8260	16.731	21.087	23.0366	40		96	0006338	06/12/96	HLS
23675	iodomthb	8260	151.048	144.253	4.60208	40		96	0006338	06/12/96	HLS
23675	mpXylenb	8260	66.27	72.513	8.99677	40		96	0006338	06/12/96	HLS
23675	Mthenecb	8260	106.531	97.863	8.48165	65		96	0006338	06/12/96	HLS
23675	Styreneb	8260	25.482	20.989	19.3367	40		96	0006338	06/12/96	HLS
23675	TCEb	8260	44.854	41.695	7.29991	27		96	0006338	06/12/96	HLS
23675	Tclflmtb	8260	130.072	124.896	4.06011	65		96	0006338	06/12/96	HLS
23675	Tetcletb	8260	249.93	254.209	1.69754	40		96	0006338	06/12/96	HLS
23675	Tolueneb	8260	38.573	39.501	2.37723	27		96	0006338	06/12/96	HLS
23675	tr12DCEb	8260	54.666	51.063	6.81553	40		96	0006338	06/12/96	HLS
23675	tr13dcpb	8260	13.518	13.173	2.58514	65		96	0006338	06/12/96	HLS
23675	Vinylclb	8260	121.749	117.589	3.47625	65		96	0006338	06/12/96	HLS

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-->> M E T H O D B L A N K D A T A <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
22952	% Solids	160.3	4	BDL	MG/L	06/11/96	rfb
23006	cr	6010	1	BDL	MG/KG	06/13/96	jmn
23006	Ag	6010	1	BDL	MG/KG	06/13/96	jmn
23006	Pb	6010	5	BDL	MG/KG	06/13/96	jmn

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->> METHOD BLANK DATA continued <<---
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C Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23006	Zn	6010	2	BDL	MG/KG	06/13/96	jmn
23006	Be	6010	.5	BDL	MG/KG	06/13/96	jmn
23006	Se	6010	50	BDL	MG/KG	06/13/96	jmn
23006	Tl	6010	50	BDL	MG/KG	06/13/96	jmn
23006	Ni	6010	4	BDL	MG/KG	06/13/96	jmn
23006	Cd	6010	.5	BDL	MG/KG	06/13/96	jmn
23006	Cu	6010	2.5	BDL	MG/KG	06/13/96	jmn
23006	Ba	6010	1	BDL	MG/KG	06/13/96	jmn
23006	Sb	6010	5	BDL	MG/KG	06/13/96	jmn
23019	As-MS	6020	.1	BDL	MG/KG	06/13/96	jmn
23024	% Solids	160.3	4	BDL	MG/L	06/13/96	rfb
23034	Hg	7471	.033	BDL	MG/KG	06/14/96	dsb
23040	%solids	160.3	.01	BDL	%	06/14/96	rfb
23040	% Solids	160.3	.01	BDL	%	06/14/96	rfb
23063	Sb	6010	5	BDL	MG/KG	06/17/96	jmn
23063	Se	6010	50	BDL	MG/KG	06/17/96	jmn
23063	Cr	6010	1	BDL	MG/KG	06/17/96	jmn
23063	Pb	6010	5	BDL	MG/KG	06/17/96	jmn
23063	Cd	6010	.5	BDL	MG/KG	06/17/96	jmn
23063	Ba	6010	1	BDL	MG/KG	06/17/96	jmn
23063	Ag	6010	1	BDL	MG/KG	06/17/96	jmn
23063	Cu	6010	2.5	BDL	MG/KG	06/17/96	jmn
23063	Ni	6010	4	BDL	MG/KG	06/17/96	jmn
23063	Zn	6010	2	BDL	MG/KG	06/17/96	jmn
23063	Tl	6010	50	BDL	MG/KG	06/17/96	jmn
23063	Be	6010	.5	BDL	MG/KG	06/17/96	jmn
23174	As-MS	6020	1	BDL	MG/KG	06/21/96	jmn
23175	As-MS	6020	.1	BDL	MG/KG	06/24/96	jmn
23187	CN-T	9012	1	BDL	MG/KG	06/20/96	ejp
23523	14dcbsb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	Phenolb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	4nitpheb	8270	1700	BDL	UG/KG	07/09/96	SCL
23523	PCPb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	Pyreneb	8270	330	BDL	UG/KG	07/09/96	SCL

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-->> M E T H O D B L A N K D A T A continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23523	4cl3mepb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	Acenaphb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	124tcbsb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	24Dintob	8270	330	BDL	UG/KG	07/09/96	SCL
23523	2Clphenb	8270	330	BDL	UG/KG	07/09/96	SCL
23602	Pyridinb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Hccpdb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Hclbutsb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Hexclbnb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Hxclethb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Indnopyb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Isophorb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Naphthsb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Dibutphb	8270	330	1376.79	UG/KG	07/10/96	HLS
23602	Dicbnzdb	8270	1700	BDL	UG/KG	07/10/96	HLS
23602	Diclpheb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Diethphb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Dimepheb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Dimephtb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Bnzperyb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Chrysenb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Clethetb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Clisethb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Dbenfurb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Dibnantb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	3Mepheb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	3Nitanib	8270	1700	BDL	UG/KG	07/10/96	HLS
23602	46Din2b	8270	1700	BDL	UG/KG	07/10/96	HLS
23602	4Brphetb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	4Cl3mepb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	4Clanilb	8270	660	BDL	UG/KG	07/10/96	HLS
23602	4Clphetb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	2Clnaphb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	2Clphenb	8270	330	BDL	UG/KG	07/10/96	HLS

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-->> M E T H O D B L A N K D A T A continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23602	2Ethexpb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	2Menaphb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	2Methphb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	2Nitanib	8270	1700	BDL	UG/KG	07/10/96	HLS
23602	2Nitpheb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	2346tcph	8270	1700	BDL	UG/KG	07/10/96	HLS
23602	245Tcphb	8270	1700	BDL	UG/KG	07/10/96	HLS
23602	246Tcphb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	24Dinphb	8270	1700	BDL	UG/KG	07/10/96	HLS
23602	24Dintob	8270	330	BDL	UG/KG	07/10/96	HLS
23602	26Dcpheb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	26Dintob	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Dimthamb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Dipropam	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Dnoctphb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Ethoxmeb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Fluorenb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Flurantb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	4Methphb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	4Nitanib	8270	1700	BDL	UG/KG	07/10/96	HLS
23602	4Nitpheb	8270	1700	BDL	UG/KG	07/10/96	HLS
23602	Acenaphb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Acenphyb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Anthracb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Nitrbnzb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	PCPb	8270	1700	BDL	UG/KG	07/10/96	HLS
23602	Phenolb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Phnanthb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Pyreneb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Benzalcb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Bnzaantb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Bnzapyrb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Bnzbflub	8270	330	BDL	UG/KG	07/10/96	HLS
23602	Bnzkflub	8270	330	BDL	UG/KG	07/10/96	HLS

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->> METHOD BLANK DATA continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23602	124TCBsb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	12DCBsb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	13DCBsb	8270	330	BDL	UG/KG	07/10/96	HLS
23602	14DCBsb	8270	330	BDL	UG/KG	07/10/96	HLS
23605	Vinylclb	8260	10	BDL	UG/KG	06/20/96	HLS
23605	oXyleneb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Styreneb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	TCEb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Dibrmthb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	EDBb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Ethbenzb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	ethylmab	8260	5	BDL	UG/KG	06/20/96	HLS
23605	iodomthb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Brmethb	8260	5	5.591	UG/KG	06/20/96	HLS
23605	Carbtetb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Chlformb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Clbenzb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Clethanb	8260	10	BDL	UG/KG	06/20/96	HLS
23605	2Hexanob	8260	50	BDL	UG/KG	06/20/96	HLS
23605	4Me2Penb	8260	50	BDL	UG/KG	06/20/96	HLS
23605	Acetoneb	8260	50	BDL	UG/KG	06/20/96	HLS
23605	Acrolenb	8260	200	BDL	UG/KG	06/20/96	HLS
23605	Acrylonb	8260	100	BDL	UG/KG	06/20/96	HLS
23605	14dc2beb	8260	10	BDL	UG/KG	06/20/96	HLS
23605	2Butanob	8260	50	BDL	UG/KG	06/20/96	HLS
23605	2Ceve	8260	10	BDL	UG/KG	06/20/96	HLS
23605	12DCAb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	12Dcprob	8260	5	BDL	UG/KG	06/20/96	HLS
23605	11DCAb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	11DCEb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	123Tclpb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	111TCAb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	1122TCAb	8260	.5	4.543	UG/KG	06/20/96	HLS
23605	112TCAb	8260	5	BDL	UG/KG	06/20/96	HLS

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Project Number: 9606124

****
-->> METHOD BLANK DATA continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23605	Tclflmtb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Tetcletb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Tolueneb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	tr12DCEb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	tr13dcpb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Vinylace	8260	10	BDL	UG/KG	06/20/96	HLS
23605	mpXylenb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Mthenecb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Clmthanb	8260	10	BDL	UG/KG	06/20/96	HLS
23605	Crbndisb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	cs13dcpb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Dcldflmb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Dibrclmb	8260	10	BDL	UG/KG	06/20/96	HLS
23605	Benzeneb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Brdiclmb	8260	5	BDL	UG/KG	06/20/96	HLS
23605	Brformb	8260	5	BDL	UG/KG	06/20/96	HLS
23674	tr12DCEb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	tr13dcpb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Vinylace	8260	10	BDL	UG/KG	06/10/96	HLS
23674	111TCAb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	1122TCAb	8260	.5	3.285	UG/KG	06/10/96	HLS
23674	112TCAb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Vinylclb	8260	10	BDL	UG/KG	06/10/96	HLS
23674	11DCAb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	11DCEb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	123Tclpb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	2Hexanob	8260	50	BDL	UG/KG	06/10/96	HLS
23674	4Me2Penb	8260	50	BDL	UG/KG	06/10/96	HLS
23674	12Dcprob	8260	5	BDL	UG/KG	06/10/96	HLS
23674	12DCAb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Brmethb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Carbtetb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Chlformb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Tclflmtb	8260	5	BDL	UG/KG	06/10/96	HLS

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****
->> M E T H O D B L A N K D A T A continued <<---
****

C Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23674	Tetcletb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Tolueneb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	mpXylenb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Mthenecb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Dcldflmb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Dibrclmb	8260	10	BDL	UG/KG	06/10/96	HLS
23674	Acetoneb	8260	50	BDL	UG/KG	06/10/96	HLS
23674	Benzeneb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Brdiclmb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Brformb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Clbenzb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Clethanb	8260	10	BDL	UG/KG	06/10/96	HLS
23674	Clmthanb	8260	10	BDL	UG/KG	06/10/96	HLS
23674	Crbndisb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	cs13dcpb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Dibrmthb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	EDBb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Ethbenzb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	oXyleneb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	Styreneb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	TCEb	8260	5	BDL	UG/KG	06/10/96	HLS
23674	2Butanob	8260	50	BDL	UG/KG	06/10/96	HLS
23674	2Ceve	8260	10	BDL	UG/KG	06/10/96	HLS
23675	111TCAb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	1122TCAb	8260	.5	BDL	UG/KG	06/12/96	HLS
23675	112TCAb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	11DCAb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	11DCEb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	123Tclpb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	12DCAb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	12Dcprob	8260	5	BDL	UG/KG	06/12/96	HLS
23675	14dc2beb	8260	10	BDL	UG/KG	06/12/96	HLS
23675	2Butanob	8260	50	BDL	UG/KG	06/12/96	HLS
23675	2Ceve	8260	10	BDL	UG/KG	06/12/96	HLS

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Project Number: 9606124

****
->> METHOD BLANK DATA continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23675	2Hexanob	8260	50	BDL	UG/KG	06/12/96	HLS
23675	4Me2Penb	8260	50	BDL	UG/KG	06/12/96	HLS
23675	Acetoneb	8260	50	BDL	UG/KG	06/12/96	HLS
23675	oXyleneb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Acrolenb	8260	200	BDL	UG/KG	06/12/96	HLS
23675	Acrylonb	8260	100	BDL	UG/KG	06/12/96	HLS
23675	Benzeneb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Brdiclmb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Brformb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Brmethb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Carbtetb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Chlformb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Clbenzb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Clethanb	8260	10	BDL	UG/KG	06/12/96	HLS
23675	Clmthanb	8260	10	BDL	UG/KG	06/12/96	HLS
23675	Crbndisb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	cs13dcpb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Dcldflmb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Dibrclmb	8260	10	BDL	UG/KG	06/12/96	HLS
23675	Dibrmthb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	EDBb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Ethbenzb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	ethylmab	8260	5	BDL	UG/KG	06/12/96	HLS
23675	iodomthb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	mpXylenb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Mthenecb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Styreneb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	TCEb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Tclflmtb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Tetcletb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Tolueneb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	tr12DCEb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	tr13dcpb	8260	5	BDL	UG/KG	06/12/96	HLS
23675	Vinylace	8260	10	BDL	UG/KG	06/12/96	HLS

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****
->> M E T H O D B L A N K D A T A continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23675	Vinylclb	8260	10	BDL	UG/KG	06/12/96	HLS
23676	tr13dcpb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Vinylace	8260	10	BDL	UG/KG	06/18/96	HLS
23676	Vinylclb	8260	10	BDL	UG/KG	06/18/96	HLS
23676	Styreneb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	TCEb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Tclflmtb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Tetcletb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Tolueneb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	tr12DCEb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Dcldflmb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Dibrclmb	8260	10	BDL	UG/KG	06/18/96	HLS
23676	Dibrmthb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	EDBb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Ethbenzb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	ethylmab	8260	5	BDL	UG/KG	06/18/96	HLS
23676	iodomthb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Chlformb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Clbenzb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Clethanb	8260	10	BDL	UG/KG	06/18/96	HLS
23676	Clmthanb	8260	10	BDL	UG/KG	06/18/96	HLS
23676	Crbndisb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	cs13dcpb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Acrylonb	8260	100	BDL	UG/KG	06/18/96	HLS
23676	Benzeneb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Brdiclmb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Brformb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Brmethb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Carbtetb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	mpXylenb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	Mthenecb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	oXyleneb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	111TCAb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	1122TCAb	8260	.5	BDL	UG/KG	06/18/96	HLS

0003332

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Project Number: 9606124

****
-->> M E T H O D B L A N K D A T A continued <<---
****

QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23676	112TCAb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	11DCAb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	11DCEb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	123Tclpb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	12DCAb	8260	5	BDL	UG/KG	06/18/96	HLS
23676	12Dcprob	8260	5	BDL	UG/KG	06/18/96	HLS
23676	14dc2beb	8260	10	BDL	UG/KG	06/18/96	HLS
23676	2Butanob	8260	50	BDL	UG/KG	06/18/96	HLS
23676	2Ceve	8260	10	BDL	UG/KG	06/18/96	HLS
23676	2Hexanob	8260	50	BDL	UG/KG	06/18/96	HLS
23676	4Me2Penb	8260	50	BDL	UG/KG	06/18/96	HLS
23676	Acetoneb	8260	50	BDL	UG/KG	06/18/96	HLS
23676	Acrolenb	8260	200	BDL	UG/KG	06/18/96	HLS

000333

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-->> A N A L Y S T ' S QC C O M M E N T S <<---
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C Number: 23006

Sb matrix spike and duplication recoveries not in control due to matrix effect. QC accepted based on QCRS and precision recovery data.

C Number: 23040

Data entered by SFL

C Number: 23063

Data entered by SFL

Project Number: 9606124

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****
->> A N A L Y S T ' S QC C O M M E N T S continued <<---
****

Number: 23676

Reference QC No 23675 for spikes, lcs and dup.

0003341

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

port Date: 07/26/96 QUALITY CONTROL REPORT BY LAB PROJECT NUMBER

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Project Number: 9606125

****
->> S P I K E A C C U R A C Y D A T A <<---
****

QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
22999	Hg	7470	0	2.183	2	109	125	75		06/13/96	dsb	96	0006157
23052	CN-T	9012	0	.3663	.4	92	115	85		06/17/96	ejp	96	0006157
23065	Ni-MS	6020	4	95	100	91	125	75		06/17/96	jmn	96	0006345
23065	Sb-MS	6020	0	96	100	96	125	75		06/17/96	jmn	96	0006345
23065	Cd-MS	6020	0	95	100	95	125	75		06/17/96	jmn	96	0006345
23065	Cu-MS	6020	0	92	100	92	125	75		06/17/96	jmn	96	0006345
23065	Zn-MS	6020	0	94	100	94	125	75		06/17/96	jmn	96	0006345
23065	Ba-MS	6020	0	92	100	92	125	75		06/17/96	jmn	96	0006345
23065	Ag-MS	6020	0	91	100	91	125	75		06/17/96	jmn	96	0006345
23065	Be-MS	6020	0	101	100	101	125	75		06/17/96	jmn	96	0006345
23065	Tl-MS	6020	0	92	100	92	125	75		06/17/96	jmn	96	0006345
23065	Pb-MS	6020	0	95	100	95	125	75		06/17/96	jmn	96	0006345
23065	Cr-MS	6020	0	97	100	97	125	75		06/17/96	jmn	96	0006345
23065	As-MS	6020	0	95	100	95	125	75		06/17/96	jmn	96	0006345
23104	Se-GF	7740	0	22.3	20	112	125	75		06/19/96	jmn	96	0006345
23188	CN-T	9012	0	.3748	.4	94	115	85		06/20/96	ejp	96	0006349
23416	iodomthb	8260	0	88.735	100	89	137	37		06/19/96	HLS	96	0006345
23416	11DCEb	8260	0	41.73	50	83	136	60		06/19/96	HLS	96	0006345
23416	oXyleneb	8260	0	48.199	50	96	114	66		06/19/96	HLS	96	0006345
23416	123Tclpb	8260	0	54.507	50	109	103	44	*	06/19/96	HLS	96	0006345
23416	Styreneb	8260	0	46.805	50	94	109	61		06/19/96	HLS	96	0006345
23416	TCEb	8260	0	47.893	50	96	136	66		06/19/96	HLS	96	0006345
23416	Tclflmtb	8260	0	48.197	50	96	181	17		06/19/96	HLS	96	0006345
23416	Tetcletb	8260	0	50.622	50	101	148	64		06/19/96	HLS	96	0006345
23416	Tolueneb	8260	0	47.343	50	95	138	68		06/19/96	HLS	96	0006345
23416	tr12DCEb	8260	0	43.708	50	87	156	54		06/19/96	HLS	96	0006345
23416	tr13dcpb	8260	0	45.753	50	92	183	17		06/19/96	HLS	96	0006345
23416	12DCAb	8260	0	50.105	50	100	155	49		06/19/96	HLS	96	0006345
23416	12Dcprob	8260	0	48.114	50	96	210	10		06/19/96	HLS	96	0006345
23416	Vinylace	8260	0	47.216	100	47	147	49	*	06/19/96	HLS	96	0006345
23416	Vinylclb	8260	0	34.874	50	70	251	10		06/19/96	HLS	96	0006345
23416	14dc2beb	8260	0	79.943	100	80	129	11		06/19/96	HLS	96	0006345
23416	2Butanob	8260	0	121.392	100	121	208	79		06/19/96	HLS	96	0006345
23416	2Ceve	8260	0	5.088	50	10	199	10		06/19/96	HLS	96	0006345

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****
->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23416	111TCAb	8260	0	48.81	50	98	162	52		06/19/96	HLS	96	0006345
23416	1122TCAb	8260	0	52.585	50	105	157	46		06/19/96	HLS	96	0006345
23416	2Hexanob	8260	0	121.528	100	122	164	10		06/19/96	HLS	96	0006345
23416	4Me2Penb	8260	0	112.675	100	113	111	68	*	06/19/96	HLS	96	0006345
23416	Acetoneb	8260	0	1129.23	1000	113	161	10		06/19/96	HLS	96	0006345
23416	Acrolenb	8260	0	488.545	1000	49	132	60	*	06/19/96	HLS	96	0006345
23416	Acrylonb	8260	0	1128.09	1000	113	108	77	*	06/19/96	HLS	96	0006345
23416	Benzeneb	8260	0	45.792	50	92	144	73		06/19/96	HLS	96	0006345
23416	Brdiclmb	8260	0	50.569	50	101	155	35		06/19/96	HLS	96	0006345
23416	Brformb	8260	0	51.989	50	104	169	45		06/19/96	HLS	96	0006345
23416	Brmethb	8260	0	40.441	50	81	242	10		06/19/96	HLS	96	0006345
23416	Carbtetb	8260	0	43.934	50	88	140	70		06/19/96	HLS	96	0006345
23416	Chlformb	8260	3.067	56.227	50	106	138	51		06/19/96	HLS	96	0006345
23416	Clbenzb	8260	0	48.697	50	97	136	68		06/19/96	HLS	96	0006345
23416	Clethanb	8260	0	47.022	50	94	119	64		06/19/96	HLS	96	0006345
23416	Clmthanb	8260	0	37.387	50	75	273	10		06/19/96	HLS	96	0006345
23416	Crbndisb	8260	0	88.976	100	89	138	37		06/19/96	HLS	96	0006345
23416	cs13dcpb	8260	0	43.933	50	88	227	10		06/19/96	HLS	96	0006345
23416	Dcldflmb	8260	0	36.332	50	73	146	72		06/19/96	HLS	96	0006345
23416	Dibrclmb	8260	0	52.087	50	104	142	56		06/19/96	HLS	96	0006345
23416	Dibrmthb	8260	0	50.454	50	101	110	78		06/19/96	HLS	96	0006345
23416	EDBb	8260	0	51.365	50	103	112	70		06/19/96	HLS	96	0006345
23416	Ethbenzb	8260	0	48.915	50	98	162	37		06/19/96	HLS	96	0006345
23416	ethylmab	8260	0	97.547	100	98	139	37		06/19/96	HLS	96	0006345
23416	112TCAb	8260	0	52.711	50	105	150	52		06/19/96	HLS	96	0006345
23416	11DCAb	8260	0	46.176	50	92	155	59		06/19/96	HLS	96	0006345
23416	mpXylenb	8260	0	47.23	50	94	114	66		06/19/96	HLS	96	0006345
23416	Mthenecb	8260	0	43.939	50	88	221	10		06/19/96	HLS	96	0006345
23421	Tolueneb	8260	1.08	47.804	50	93	138	68		06/20/96	HLS	96	0006349
23421	tr12DCEb	8260	0	45.279	50	91	156	54		06/20/96	HLS	96	0006349
23421	tr13dcpb	8260	0	49.447	50	99	183	17		06/20/96	HLS	96	0006349
23421	Vinylace	8260	0	38.297	100	38	147	49	*	06/20/96	HLS	96	0006349
23421	Vinylclb	8260	0	39.374	50	79	251	10		06/20/96	HLS	96	0006349
23421	Styreneb	8260	0	47.195	50	94	109	61		06/20/96	HLS	96	0006349

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->> S P I K E A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23421	TCEb	8260	0	46.835	50	94	136	66		06/20/96	HLS	96	0006349
23421	Tclflmtb	8260	0	47.079	50	94	181	17		06/20/96	HLS	96	0006349
23421	Tetcletb	8260	0	51.918	50	104	148	64		06/20/96	HLS	96	0006349
23421	mpXylenb	8260	0	49.218	50	98	114	66		06/20/96	HLS	96	0006349
23421	Mthenecb	8260	0	48.26	50	97	221	10		06/20/96	HLS	96	0006349
23421	oXyleneb	8260	0	48.66	50	97	114	66		06/20/96	HLS	96	0006349
23421	Ethbenzb	8260	0	48.89	50	98	162	37		06/20/96	HLS	96	0006349
23421	ethylmab	8260	0	71.964	100	72	139	37		06/20/96	HLS	96	0006349
23421	iodomthb	8260	0	96.5	100	97	137	37		06/20/96	HLS	96	0006349
23421	Dcldflmb	8260	0	41.128	50	82	146	72		06/20/96	HLS	96	0006349
23421	Dibrclmb	8260	0	52.853	50	106	142	56		06/20/96	HLS	96	0006349
23421	Dibrmthb	8260	0	51.512	50	103	110	78		06/20/96	HLS	96	0006349
23421	EDBb	8260	0	51.624	50	103	112	70		06/20/96	HLS	96	0006349
23421	Brmethb	8260	1.329	46.319	50	90	242	10		06/20/96	HLS	96	0006349
23421	Carbteth	8260	0	44.483	50	89	140	70		06/20/96	HLS	96	0006349
23421	Chlformb	8260	2.726	55.328	50	105	138	51		06/20/96	HLS	96	0006349
23421	Clbenzb	8260	0	49.063	50	98	136	68		06/20/96	HLS	96	0006349
23421	Clethanb	8260	0	54.029	50	108	119	64		06/20/96	HLS	96	0006349
23421	Clmthanb	8260	0	37.927	50	76	273	10		06/20/96	HLS	96	0006349
23421	Crbndisb	8260	0	91.389	100	91	138	37		06/20/96	HLS	96	0006349
23421	cs13dcpb	8260	0	48.842	50	98	227	10		06/20/96	HLS	96	0006349
23421	Acrylonb	8260	0	1043.66	1000	104	108	77		06/20/96	HLS	96	0006349
23421	Benzeneb	8260	4.94	47.82	50	86	144	73		06/20/96	HLS	96	0006349
23421	Brdiclmb	8260	0	52.809	50	106	155	35		06/20/96	HLS	96	0006349
23421	Brformb	8260	0	49.908	50	100	169	45		06/20/96	HLS	96	0006349
23421	2Hexanob	8260	0	102.209	100	102	164	10		06/20/96	HLS	96	0006349
23421	4Me2Penb	8260	0	99.868	100	100	111	68		06/20/96	HLS	96	0006349
23421	Acetoneb	8260	0	1086.45	1000	109	161	10		06/20/96	HLS	96	0006349
23421	Acrolenb	8260	0	397.812	1000	40	132	60	*	06/20/96	HLS	96	0006349
23421	14dc2beb	8260	0	86.731	100	87	129	11		06/20/96	HLS	96	0006349
23421	2Butanob	8260	0	118.023	100	118	208	79		06/20/96	HLS	96	0006349
23421	2Ceve	8260	0	5.921	50	12	199	10		06/20/96	HLS	96	0006349
23421	12DCAb	8260	0	50.832	50	102	155	49		06/20/96	HLS	96	0006349
23421	12Dcprob	8260	0	45.791	50	92	210	10		06/20/96	HLS	96	0006349

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->> S P I K E A C C U R A C Y D A T A continued <<---

LC Number	Analyte	Procedure	SR	SSR	SA	Spk%R	SUL	SLL	F	Det Date	Ast	SY	Smpl#
23421	11DCEb	8260	0	45.24	50	90	136	60		06/20/96	HLS	96	0006349
23421	123Tclpb	8260	0	53.49	50	107	103	44	*	06/20/96	HLS	96	0006349
23421	111TCAb	8260	0	50.227	50	100	162	52		06/20/96	HLS	96	0006349
23421	1122TCAb	8260	0	52.981	50	106	157	46		06/20/96	HLS	96	0006349
23421	112TCAb	8260	0	53.301	50	107	150	52		06/20/96	HLS	96	0006349
23421	11DCAb	8260	0	49.205	50	98	155	59		06/20/96	HLS	96	0006349
23523	14dcbsb	8270	0	3229.13	5000	65	112	46		07/09/96	SCL	96	0006242
23523	Phenolb	8270	0	4351.00	5000	87	112	37		07/09/96	SCL	96	0006242
23523	4nitpheb	8270	0	4232.21	5000	85	130	10		07/09/96	SCL	96	0006242
23523	PCPb	8270	0	1843.11	5000	37	107	10		07/09/96	SCL	96	0006242
23523	Pyreneb	8270	0	5426.27	3333	163	139	33	*	07/09/96	SCL	96	0006242
23523	4cl3mepb	8270	0	4227.83	5000	85	112	38		07/09/96	SCL	96	0006242
23523	nNdpamnb	8270	0	2673.18	3333	80	150	30		07/09/96	SCL	96	0006242
23523	Acenaphb	8270	0	2726.45	3333	82	108	51		07/09/96	SCL	96	0006242
23523	124tcbsb	8270	0	3408.27	3333	102	107	48		07/09/96	SCL	96	0006242
23523	24Dintob	8270	0	2855.66	3333	86	111	35		07/09/96	SCL	96	0006242
23523	2Clphenb	8270	0	4467.51	5000	89	105	45		07/09/96	SCL	96	0006242

->> Q. C. R. S. A C C U R A C Y D A T A <<---

LC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
22999	Hg	7470	2.00	2.132	106.6	120	80		06/13/96	dsb
23052	CN-T	9012	.268	.230	85.8	115	85		06/17/96	ejp
23065	Ni-MS	6020	100	100	100.0	120	80		06/17/96	jmn
23065	Sb-MS	6020	100	97	97.0	120	80		06/17/96	jmn
23065	Cd-MS	6020	100	95	95.0	120	80		06/17/96	jmn
23065	Cu-MS	6020	100	92	92.0	120	80		06/17/96	jmn
23065	Zn-MS	6020	100	93	93.0	120	80		06/17/96	jmn
23065	Ba-MS	6020	100	90	90.0	120	80		06/17/96	jmn
23065	Ag-MS	6020	100	90	90.0	120	80		06/17/96	jmn
23065	Be-MS	6020	100	99	99.0	120	80		06/17/96	jmn

Report Date: 07/26/96 QUALITY CONTROL REPORT BY LAB PROJECT NUMBER

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****
->> Q. C. R. S. A C C U R A C Y D A T A continued <<---
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QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23065	Tl-MS	6020	100	96	96.0	120	80		06/17/96	jmn
23065	Pb-MS	6020	100	96	96.0	120	80		06/17/96	jmn
23065	Cr-MS	6020	100	96	96.0	120	80		06/17/96	jmn
23065	As-MS	6020	100	95	95.0	120	80		06/17/96	jmn
23104	Se-GF	7740	20	18.98	94.9	120	80		06/19/96	jmn
23188	CN-T	9012	.268	.241	89.9	115	85		06/20/96	ejp
23421	Tolueneb	8260	50	48.461	96.9	138	68		06/20/96	HLS
23421	tr12DCEb	8260	50	43.307	86.6	156	54		06/20/96	HLS
23421	tr13dcpb	8260	50	46.01	92.0	183	17		06/20/96	HLS
23421	Vinylace	8260	100	105.58	105.6	147	49		06/20/96	HLS
23421	Vinylclb	8260	50	33.966	67.9	251	10		06/20/96	HLS
23421	Styreneb	8260	50	48.578	97.2	109	61		06/20/96	HLS
23421	TCEb	8260	50	47.702	95.4	136	66		06/20/96	HLS
23421	Tclflmtb	8260	50	41.552	83.1	181	17		06/20/96	HLS
23421	Tetcletb	8260	50	44.901	89.8	148	64		06/20/96	HLS
23421	mpXylenb	8260	50	53.828	107.7	114	66		06/20/96	HLS
23421	Mthenecb	8260	50	43.227	86.5	221	10		06/20/96	HLS
23421	oXyleneb	8260	50	52.745	105.5	114	66		06/20/96	HLS
23421	Ethbenzb	8260	50	47.503	95.0	162	37		06/20/96	HLS
23421	ethylmab	8260	100	109.408	109.4	139	37		06/20/96	HLS
23421	iodomthb	8260	100	86.865	86.9	137	37		06/20/96	HLS
23421	Dcldflmb	8260	50	49.812	99.6	146	72		06/20/96	HLS
23421	Dibrclmb	8260	50	45.566	91.1	142	56		06/20/96	HLS
23421	Dibrmthb	8260	50	50.197	100.4	110	78		06/20/96	HLS
23421	EDBb	8260	50	48.149	96.3	112	70		06/20/96	HLS
23421	Brmethb	8260	50	41.105	82.2	242	10		06/20/96	HLS
23421	Carbtetb	8260	50	43.626	87.3	140	70		06/20/96	HLS
23421	Chlformb	8260	50	48.866	97.7	138	51		06/20/96	HLS
23421	Clbenzb	8260	50	45.568	91.1	136	68		06/20/96	HLS
23421	Clethanb	8260	50	45.964	91.9	119	64		06/20/96	HLS
23421	Clmthanb	8260	50	37.564	75.1	273	10		06/20/96	HLS
23421	Crbndisb	8260	100	85.145	85.1	138	37		06/20/96	HLS
23421	cs13dcpb	8260	50	46.146	92.3	227	10		06/20/96	HLS
23421	Acrylonb	8260	1000	1173.15	117.3	115	77	*	06/20/96	HLS

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->> Q. C. R. S. A C C U R A C Y D A T A continued <<---

QC Number	Analyte	Procedure	QCRS True Val	QCRS Measured	QCRS % Rec	AUL	ALL	F	Det Date	Ast
23421	Benzeneb	8260	50	48.424	96.8	144	73		06/20/96	HLS
23421	Brdiclmb	8260	50	50.094	100.2	155	35		06/20/96	HLS
23421	Brformb	8260	50	49.849	99.7	169	45		06/20/96	HLS
23421	2Hexanob	8260	100	117.129	117.1	164	10		06/20/96	HLS
23421	4Me2Penb	8260	100	115.154	115.2	115	68	*	06/20/96	HLS
23421	Acetoneb	8260	1000	1397.86	139.8	161	10		06/20/96	HLS
23421	Acrolenb	8260	1000	851.687	85.2	132	60		06/20/96	HLS
23421	14dc2beb	8260	100	96.981	97.0	129	11		06/20/96	HLS
23421	2Butanob	8260	100	135.103	135.1	208	79		06/20/96	HLS
23421	2Ceve	8260	50	36.454	72.9	199	10		06/20/96	HLS
23421	12DCAb	8260	50	50.235	100.5	155	49		06/20/96	HLS
23421	12Dcprob	8260	50	47.636	95.3	210	10		06/20/96	HLS
23421	11DCEb	8260	50	41.892	83.8	136	60		06/20/96	HLS
23421	123Tclpb	8260	50	27.847	55.7	115	44		06/20/96	HLS
23421	111TCAb	8260	50	47.932	95.9	162	52		06/20/96	HLS
23421	1122TCAb	8260	50	27.607	55.2	157	46		06/20/96	HLS
23421	112TCAb	8260	50	51.244	102.5	150	52		06/20/96	HLS
23421	11DCAb	8260	50	44.15	88.3	155	59		06/20/96	HLS
23523	14dcbsb	8270	3333	1766.572	53.0	112	46		07/09/96	SCL
23523	Phenolb	8270	5000	2684.526	53.7	112	37		07/09/96	SCL
23523	4nitpheb	8270	5000	1962.3786	39.2	130	10		07/09/96	SCL
23523	PCPb	8270	5000	2154.68	43.1	107	10		07/09/96	SCL
23523	Pyreneb	8270	3333	1820.7228	54.6	139	33		07/09/96	SCL
23523	4cl3mepb	8270	5000	2686.876	53.7	112	38		07/09/96	SCL
23523	nNdpamnb	8270	3333	1848.244	55.5	150	30		07/09/96	SCL
23523	Acenaphb	8270	3333	1720.6722	51.6	108	51		07/09/96	SCL
23523	124tcbsb	8270	3333	1848.244	55.5	107	48		07/09/96	SCL
23523	24Dintob	8270	3333	1748.312	52.5	111	35		07/09/96	SCL
23523	2Clphenb	8270	5000	2926.912	58.5	105	45		07/09/96	SCL

->> P R E C I S I O N D A T A <<---

QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
22999	Hg	7470	2.183	2.17	.597289	20		96	0006157	06/13/96	dsb

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-->> P R E C I S I O N D A T A continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23052	CN-T	9012	.3556	.3661	2.90979	30		96	0006157	06/17/96	ejp
23065	Ni-MS	6020	95	99	4.12371	20		96	0006345	06/17/96	jmn
23065	Sb-MS	6020	96	99	3.07692	20		96	0006345	06/17/96	jmn
23065	Cd-MS	6020	95	97	2.08333	20		96	0006345	06/17/96	jmn
23065	Cu-MS	6020	92	94	2.15053	20		96	0006345	06/17/96	jmn
23065	Zn-MS	6020	94	96	2.10526	20		96	0006345	06/17/96	jmn
23065	Ba-MS	6020	90	92	2.19780	20		96	0006345	06/17/96	jmn
23065	Ag-MS	6020	90	91	1.10497	20		96	0006345	06/17/96	jmn
23065	Be-MS	6020	100	101	.995024	20		96	0006345	06/17/96	jmn
23065	Tl-MS	6020	92	95	3.20855	20		96	0006345	06/17/96	jmn
23065	Pb-MS	6020	95	98	3.10880	20		96	0006345	06/17/96	jmn
23065	Cr-MS	6020	97	100	3.04568	20		96	0006345	06/17/96	jmn
23065	As-MS	6020	95	97	2.08333	20		96	0006345	06/17/96	jmn
23104	Se-GF	7740	22.3	22.3	0	20		96	0006345	06/19/96	jmn
23188	CN-T	9012	.3748	.3543	5.62337	30		96	0006349	06/20/96	ejp
23421	Tolueneb	8260	50.459	47.804	5.40386	17		96	0006349	06/20/96	HLS
23421	tr12DCEb	8260	47.324	45.279	4.41670	40		96	0006349	06/20/96	HLS
23421	tr13dcpb	8260	48.92	49.447	1.07149	40		96	0006349	06/20/96	HLS
23421	Vinylace	8260	21.876	38.297	54.5793	40	*	96	0006349	06/20/96	HLS
23421	Vinylclb	8260	41.281	39.374	4.72878	65		96	0006349	06/20/96	HLS
23421	Styreneb	8260	48.041	47.195	1.77663	40		96	0006349	06/20/96	HLS
23421	TCEb	8260	47.11	46.835	.585448	20		96	0006349	06/20/96	HLS
23421	Tclflmtb	8260	42.634	47.079	9.90937	65		96	0006349	06/20/96	HLS
23421	Tetcletb	8260	47.052	51.918	9.83328	40		96	0006349	06/20/96	HLS
23421	mpXylenb	8260	51.554	49.218	4.63620	40		96	0006349	06/20/96	HLS
23421	Mthenecb	8260	47.133	48.26	2.36285	65		96	0006349	06/20/96	HLS
23421	oXyleneb	8260	48.008	48.66	1.34894	40		96	0006349	06/20/96	HLS
23421	Ethbenzb	8260	50.364	48.89	2.97015	40		96	0006349	06/20/96	HLS
23421	ethylmab	8260	34.468	71.964	70.4600	40	*	96	0006349	06/20/96	HLS
23421	iodomthb	8260	89.205	96.5	7.85654	40		96	0006349	06/20/96	HLS
23421	Dcldflmb	8260	40.815	41.128	.763945	40		96	0006349	06/20/96	HLS
23421	Dibrclmb	8260	50.255	52.853	5.03937	65		96	0006349	06/20/96	HLS
23421	Dibrmthb	8260	48.598	51.512	5.82159	40		96	0006349	06/20/96	HLS
23421	EDBb	8260	47.247	51.624	8.85396	40		96	0006349	06/20/96	HLS

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->> P R E C I S I O N D A T A continued <<---
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QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23421	Brmethb	8260	41.905	46.319	10.0063	65		96	0006349	06/20/96	HLS
23421	Carbtetb	8260	45.658	44.483	2.60702	40		96	0006349	06/20/96	HLS
23421	Chlformb	8260	54.607	55.328	1.31168	40		96	0006349	06/20/96	HLS
23421	Clbenzb	8260	49.687	49.063	1.26379	17		96	0006349	06/20/96	HLS
23421	Clethanb	8260	50.09	54.029	7.56634	65		96	0006349	06/20/96	HLS
23421	Clmthanb	8260	42.823	37.927	12.1263	65		96	0006349	06/20/96	HLS
23421	Crbndisb	8260	90.128	91.389	1.38940	40		96	0006349	06/20/96	HLS
23421	cs13dcpb	8260	47.359	48.842	3.08312	65		96	0006349	06/20/96	HLS
23421	Acrylonb	8260	927.348	1043.66	11.8022	40		96	0006349	06/20/96	HLS
23421	Benzeneb	8260	50.323	47.82	5.10072	22		96	0006349	06/20/96	HLS
23421	Brdiclmb	8260	50.828	52.809	3.82295	40		96	0006349	06/20/96	HLS
23421	Brformb	8260	47.333	49.908	5.29612	40		96	0006349	06/20/96	HLS
23421	2Hexanob	8260	70.853	102.209	36.2367	40		96	0006349	06/20/96	HLS
23421	4Me2Penb	8260	88.524	99.868	12.0429	40		96	0006349	06/20/96	HLS
23421	Acetoneb	8260	911.457	1086.45	17.5176	40		96	0006349	06/20/96	HLS
23421	Acrolenb	8260	248.816	397.812	46.0839	40	*	96	0006349	06/20/96	HLS
23421	14dc2beb	8260	78.67	86.731	9.74722	40		96	0006349	06/20/96	HLS
23421	2Butanob	8260	93.931	118.023	22.7332	40		96	0006349	06/20/96	HLS
23421	2Ceve	8260	6.201	5.921	4.61969	65		96	0006349	06/20/96	HLS
23421	12DCAb	8260	49.277	50.832	3.10661	40		96	0006349	06/20/96	HLS
23421	12Dcprob	8260	47.045	45.791	2.70153	65		96	0006349	06/20/96	HLS
23421	11DCEb	8260	42.506	45.24	6.23162	40		96	0006349	06/20/96	HLS
23421	123Tclpb	8260	48.557	53.49	9.66809	40		96	0006349	06/20/96	HLS
23421	111TCAb	8260	50.551	50.227	.642997	40		96	0006349	06/20/96	HLS
23421	1122TCAb	8260	50.785	52.981	4.23260	40		96	0006349	06/20/96	HLS
23421	112TCAb	8260	49.309	53.301	7.78091	40		96	0006349	06/20/96	HLS
23421	11DCAb	8260	46.022	49.205	6.68507	40		96	0006349	06/20/96	HLS
23523	14dcbsb	8270	3229.13	2885.44	11.2413	28		96	0006242	07/09/96	SCL
23523	Phenolb	8270	5102.47	4351.00	15.8983	36		96	0006242	07/09/96	SCL
23523	4nitpheb	8270	4232.21	3455.50	20.2065	34		96	0006242	07/09/96	SCL
23523	PCPb	8270	1843.11	1208.42	41.5977	89		96	0006242	07/09/96	SCL
23523	Pyreneb	8270	8530.60	5426.27	44.4846	25	*	96	0006242	07/09/96	SCL
23523	4cl3mepb	8270	5023.06	4227.83	17.1925	23		96	0006242	07/09/96	SCL
23523	nNdpamnb	8270	3474.45	2673.18	26.0673	30		96	0006242	07/09/96	SCL

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Report Date: 07/26/96 QUALITY CONTROL REPORT BY LAB PROJECT NUMBER Page: 9

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****
-->> PRECISION DATA continued <<---
****

QC Number	Analyte	Proc	Sample Result	Dup Sample Result	Dup RPD	DUL	F	SY	Smpl#	Det Date	Ast
23523	Acenaphb	8270	3381.79	2726.45	21.4577	26		96	0006242	07/09/96	SCL
23523	124tcbsb	8270	3408.27	2876.25	16.9309	28		96	0006242	07/09/96	SCL
23523	24Dintob	8270	2855.66	2250.40	23.7075	29		96	0006242	07/09/96	SCL
23523	2Clphenb	8270	5198.43	4467.51	15.1236	31		96	0006242	07/09/96	SCL

****
-->> METHOD BLANK DATA <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
22999	Hg	7470	50	BDL	UG/L	06/13/96	dsb
23052	CN-T	9012	.01	BDL	MG/L	06/17/96	ejp
23065	Ni-MS	6020	40	BDL	UG/L	06/17/96	jmn
23065	Sb-MS	6020	50	BDL	UG/L	06/17/96	jmn
23065	Cd-MS	6020	5	BDL	UG/L	06/17/96	jmn
23065	Cu-MS	6020	25	BDL	UG/L	06/17/96	jmn
23065	Zn-MS	6020	20	BDL	UG/L	06/17/96	jmn
23065	Ba-MS	6020	10	BDL	UG/L	06/17/96	jmn
23065	Ag-MS	6020	10	BDL	UG/L	06/17/96	jmn
23065	Be-MS	6020	5	BDL	UG/L	06/17/96	jmn
23065	Tl-MS	6020	10	BDL	UG/L	06/17/96	jmn
23065	Pb-MS	6020	50	BDL	UG/L	06/17/96	jmn
23065	Cr-MS	6020	10	BDL	UG/L	06/17/96	jmn
23065	As-MS	6020	2	BDL	UG/L	06/17/96	jmn
23104	Se-GF	7740	10	BDL	UG/L	06/19/96	jmn
23188	CN-T	9012	.01	BDL	MG/L	06/20/96	ejp
23416	iodomthb	8260	5	BDL	UG/L	06/19/96	HLS
23416	11DCEb	8260	5	BDL	UG/L	06/19/96	HLS
23416	oXyleneb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	123Tclpb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	Styreneb	8260	5	BDL	UG/L	06/19/96	HLS
23416	TCEb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	Tclflmtb	8260	.5	BDL	UG/L	06/19/96	HLS

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****
-->> M E T H O D B L A N K D A T A continued <<---
****

QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23416	Tetcletb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Tolueneb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	tr12DCEb	8260	5	BDL	UG/L	06/19/96	HLS
23416	tr13dcpb	8260	5	BDL	UG/L	06/19/96	HLS
23416	12DCAb	8260	5	BDL	UG/L	06/19/96	HLS
23416	12Dcprob	8260	5	BDL	UG/L	06/19/96	HLS
23416	Vinylace	8260	10	BDL	UG/L	06/19/96	HLS
23416	Vinylclb	8260	10	BDL	UG/L	06/19/96	HLS
23416	14dc2beb	8260	10	BDL	UG/L	06/19/96	HLS
23416	2Butanob	8260	50	BDL	UG/L	06/19/96	HLS
23416	2Ceve	8260	10	BDL	UG/L	06/19/96	HLS
23416	111TCAb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	1122TCAb	8260	5	BDL	UG/L	06/19/96	HLS
23416	2Hexanob	8260	50	BDL	UG/L	06/19/96	HLS
23416	4Me2Penb	8260	50	BDL	UG/L	06/19/96	HLS
23416	Acetoneb	8260	50	BDL	UG/L	06/19/96	HLS
23416	Acrolenb	8260	100	BDL	UG/L	06/19/96	HLS
23416	Acrylonb	8260	100	BDL	UG/L	06/19/96	HLS
23416	Benzeneb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Brdiclmb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Brformb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Brmethb	8260	10	BDL	UG/L	06/19/96	HLS
23416	Carbtetb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Chlformb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Clbenzb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Clethanb	8260	10	BDL	UG/L	06/19/96	HLS
23416	Clmthanb	8260	10	BDL	UG/L	06/19/96	HLS
23416	Crbndisb	8260	5	BDL	UG/L	06/19/96	HLS
23416	cs13dcpb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Dcldflmb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Dibrclmb	8260	10	BDL	UG/L	06/19/96	HLS
23416	Dibrmthb	8260	5	BDL	UG/L	06/19/96	HLS
23416	EDBb	8260	5	BDL	UG/L	06/19/96	HLS
23416	Ethbenzb	8260	5	BDL	UG/L	06/19/96	HLS

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****
->> METHOD BLANK DATA continued <<---
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QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23416	ethylmab	8260	5	BDL	UG/L	06/19/96	HLS
23416	112TCAb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	11DCAb	8260	5	BDL	UG/L	06/19/96	HLS
23416	mpXylenb	8260	.5	BDL	UG/L	06/19/96	HLS
23416	Mthenecb	8260	5	BDL	UG/L	06/19/96	HLS
23421	Tolueneb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	tr12DCEb	8260	5	BDL	UG/L	06/20/96	HLS
23421	tr13dcpb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Vinylace	8260	10	BDL	UG/L	06/20/96	HLS
23421	Vinylclb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Styreneb	8260	5	BDL	UG/L	06/20/96	HLS
23421	TCEb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	Tclflmtb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	Tetcletb	8260	5	BDL	UG/L	06/20/96	HLS
23421	mpXylenb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	Mthenecb	8260	5	BDL	UG/L	06/20/96	HLS
23421	oXyleneb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	Ethbenzb	8260	5	BDL	UG/L	06/20/96	HLS
23421	ethylmab	8260	5	BDL	UG/L	06/20/96	HLS
23421	iodomthb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Dcldflmb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Dibrclmb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Dibrmthb	8260	5	BDL	UG/L	06/20/96	HLS
23421	EDBb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Brmethb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Carbtetb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Chlformb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Clbenzb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Clethanb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Clmthanb	8260	10	BDL	UG/L	06/20/96	HLS
23421	Crbndisb	8260	5	BDL	UG/L	06/20/96	HLS
23421	cs13dcpb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Acrylonb	8260	100	BDL	UG/L	06/20/96	HLS
23421	Benzeneb	8260	5	BDL	UG/L	06/20/96	HLS

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->> M E T H O D B L A N K D A T A continued <<---

QC Number	Analyte	Proc	Detection Lim	Blank Result	Unit	Det Date	Ast
23421	Brdiclmb	8260	5	BDL	UG/L	06/20/96	HLS
23421	Brformb	8260	5	BDL	UG/L	06/20/96	HLS
23421	2Hexanob	8260	50	BDL	UG/L	06/20/96	HLS
23421	4Me2Penb	8260	50	BDL	UG/L	06/20/96	HLS
23421	Acetoneb	8260	50	BDL	UG/L	06/20/96	HLS
23421	Acrolenb	8260	100	BDL	UG/L	06/20/96	HLS
23421	14dc2beb	8260	10	BDL	UG/L	06/20/96	HLS
23421	2Butanob	8260	50	BDL	UG/L	06/20/96	HLS
23421	2Ceve	8260	10	BDL	UG/L	06/20/96	HLS
23421	12DCAb	8260	5	BDL	UG/L	06/20/96	HLS
23421	12Dcprob	8260	5	BDL	UG/L	06/20/96	HLS
23421	11DCEb	8260	5	BDL	UG/L	06/20/96	HLS
23421	123Tclpb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	111TCAb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	1122TCAb	8260	5	BDL	UG/L	06/20/96	HLS
23421	112TCAb	8260	.5	BDL	UG/L	06/20/96	HLS
23421	11DCAb	8260	5	BDL	UG/L	06/20/96	HLS
23523	14dcbsb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	Phenolb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	4nitpheb	8270	1700	BDL	UG/KG	07/09/96	SCL
23523	PCPb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	Pyreneb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	4cl3mepb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	Acenaphb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	124tcbsb	8270	330	BDL	UG/KG	07/09/96	SCL
23523	24Dintob	8270	330	BDL	UG/KG	07/09/96	SCL
23523	2Clphenb	8270	330	BDL	UG/KG	07/09/96	SCL

->> A N A L Y S T ' S QC C O M M E N T S <<---

QC Number: 23052

Refer to previous blank and apg from QC# 23037. Refer to previous SlossH2O spikes from QC# 22962.

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-->> A N A L Y S T ' S QC C O M M E N T S continued <<---
****

C Number: 23065

data entered by SFL

C Number: 23416

Reference precision and QCRS from 23415

C Number: 23421

LCS recoveries for 4-methyl-2-pentanone and acrylonitrile are higher than the project acceptance limits. The results are within the laboratory's historical recovery limits. 1,2,3-trichloropropane MS recovery is higher than the project limit. MSI was within the limits. Acrolein MS/MSD recoveries are low and precision is also out of the limit. Ethylmethacrylate and vinyl acetate RPD results are also out of the precision limits.

000347

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

port Date: 07/26/96 SURROGATE QC REPORT BY PROJECT NUMBER Page: 1

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Project Number: 9606124
C-of-C Number: C14749

****
->> SURROGATE ACCURACY DATA <<---
****

Number 23523 Procedure 8270

mple ID Blank

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23523	5000.	1913.358	38	122	19		07/09/96	SCL
Fluorophenol (SS)	8270	23523	5000.	1989.879	40	121	25		07/09/96	SCL
trobenzene-d5 (SS)	8270	23523	3333.	2073.054	62	120	23		07/09/96	SCL
enol-d5 (SS)	8270	23523	5000.	2644.965	53	113	24		07/09/96	SCL
Flurobiphenyl (SS)	8270	23523	3333.	1902.379	57	115	30		07/09/96	SCL
rphenyl-d14 (SS)	8270	23523	3333.	1975.24	59	137	18		07/09/96	SCL

mple ID Duplicate

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
trobenzene-d5 (SS)	8270	23523	3333.	2713.38	81	120	23		07/09/96	SCL
rphenyl-d14 (SS)	8270	23523	3333.	2710.071	81	137	18		07/09/96	SCL
Flurobiphenyl (SS)	8270	23523	3333.	2756.397	83	115	30		07/09/96	SCL
Fluorophenol (SS)	8270	23523	5000.	4139.559	83	121	25		07/09/96	SCL
4,6-Tribromophenol (SS)	8270	23523	5000.	3557.175	71	122	19		07/09/96	SCL
enol-d5 (SS)	8270	23523	5000.	4758.342	95	113	24		07/09/96	SCL

mple ID QCRS/LCS

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23523	5000.	2349.232	47	122	19		07/09/96	SCL
rphenyl-d14 (SS)	8270	23523	3333.	1936.888	58	137	18		07/09/96	SCL
enol-d5 (SS)	8270	23523	5000.	2495.976	50	113	24		07/09/96	SCL

eport Date: 07/26/96 SURROGATE QC REPORT BY PROJECT NUMBER Page: 2

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Project Number: 9606124
C-of-C Number: C14749

****
-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
****

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
itrobenzene-d5 (SS)	8270	23523	3333.	2027.524	61	120	23		07/09/96	SCL
-Flurobiphenyl (SS)	8270	23523	3333.	1797.448	54	115	30		07/09/96	SCL
-Fluorophenol (SS)	8270	23523	5000.	2495.976	50	121	25		07/09/96	SCL

ample ID Spike

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Flurobiphenyl (SS)	8270	23523	3333.	3472.147	104	115	30		07/09/96	SCL
-Fluorophenol (SS)	8270	23523	5000.	4850.353	97	121	25		07/09/96	SCL
4,6-Tribromophenol (SS)	8270	23523	5000.	3472.147	69	122	19		07/09/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	3292.381	99	120	23		07/09/96	SCL
henol-d5 (SS)	8270	23523	5000.	5432.928	109	113	24		07/09/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	3319.013	100	137	18		07/09/96	SCL

ample ID 96 0006241

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23523	5000.	2.75	55	122	19		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23523	3333.	2.739	83	115	30		07/08/96	SCL
-Fluorophenol (SS)	8270	23523	5000.	3.8	76	121	25		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	2.541	77	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	4.4	88	113	24		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	2.64	80	137	18		07/08/96	SCL

ample ID 96 0006242

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
erphenyl-d14 (SS)	8270	23523	3333.	2.904	88	137	18		07/08/96	SCL

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Project Number: 9606124
C-of-C Number: C14749

****
-->> SURROGATE ACCURACY DATA continued <<---
****

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
henol-d5 (SS)	8270	23523	5000.	4.8	96	113	24		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	2.607	79	120	23		07/08/96	SCL
,4,6-Tribromophenol (SS)	8270	23523	5000.	3.6	72	122	19		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23523	3333.	2.838	86	115	30		07/08/96	SCL
-Fluorophenol (SS)	8270	23523	5000.	4.	80	121	25		07/08/96	SCL

ample ID 96 0006243

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Flurobiphenyl (SS)	8270	23523	3333.	2.739	83	115	30		07/08/96	SCL
-Fluorophenol (SS)	8270	23523	5000.	3.95	79	121	25		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	2.706	82	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	4.55	91	113	24		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	2.838	86	137	18		07/08/96	SCL
,4,6-Tribromophenol (SS)	8270	23523	5000.	3.2	64	122	19		07/08/96	SCL

ample ID 96 0006345

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
,4,6-Tribromophenol (SS)	8270	23523	5000.	112.5	75	122	19		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23523	3333.	69.	69	115	30		07/08/96	SCL
-Fluorophenol (SS)	8270	23523	5000.	61.5	41	121	25		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	73.	73	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	52.5	35	113	24		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	84.	84	137	18		07/08/96	SCL

ample ID 96 0006346

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Fluorophenol (SS)	8270	23523	5000.	61.	41	121	25		07/08/96	SCL

000350

eport Date: 07/26/96 SURROGATE QC REPORT BY PROJECT NUMBER Page: 4

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C-of-C Number: C14749

****
->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Flurobiphenyl (SS)	8270	23523	3333.	60.	60	115	30		07/08/96	SCL
4,6-Tribromophenol (SS)	8270	23523	5000.	87.	58	122	19		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	66.	66	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	118.5	79	113	24		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	66.	66	137	18		07/08/96	SCL

ample ID 96 0006348

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
itrobenzene-d5 (SS)	8270	23523	3333.	75.	75	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	46.5	31	113	24		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	83.	83	137	18		07/08/96	SCL
4,6-Tribromophenol (SS)	8270	23523	5000.	94.5	63	122	19		07/08/96	SCL
-Fluorophenol (SS)	8270	23523	5000.	52.5	35	121	25		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23523	3333.	68.	68	115	30		07/08/96	SCL

ample ID 96 0006349

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Fluorophenol (SS)	8270	23523	5000.	78.	52	121	25		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23523	3333.	53.	53	115	30		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	57.	57	137	18		07/08/96	SCL
4,6-Tribromophenol (SS)	8270	23523	5000.	78.	52	122	19		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	61.	61	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	97.5	65	113	24		07/08/96	SCL

ample ID 96 0006505

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23523	5000.	103.5	69	122	19		07/08/96	SCL

000351

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****
->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Flurobiphenyl (SS)	8270	23523	3333.	69.	69	115	30		07/08/96	SCL
Fluorophenol (SS)	8270	23523	5000.	54.	36	121	25		07/08/96	SCL
trobenzene-d5 (SS)	8270	23523	3333.	78.	78	120	23		07/08/96	SCL
enol-d5 (SS)	8270	23523	5000.	54.	36	113	24		07/08/96	SCL
rphenyl-d14 (SS)	8270	23523	3333.	85.	85	137	18		07/08/96	SCL

mple ID 96 0006506

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23523	5000.	79.5	53	122	19		07/08/96	SCL
Flurobiphenyl (SS)	8270	23523	3333.	49.	49	115	30		07/08/96	SCL
Fluorophenol (SS)	8270	23523	5000.	93.	62	121	25		07/08/96	SCL
trobenzene-d5 (SS)	8270	23523	3333.	55.	55	120	23		07/08/96	SCL
enol-d5 (SS)	8270	23523	5000.	93.	62	113	24		07/08/96	SCL
rphenyl-d14 (SS)	8270	23523	3333.	58.	58	137	18		07/08/96	SCL

Number 23602 Procedure 8270

mple ID Blank

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
rphenyl-d14 (SS)	8270	23602	3333.	1267.4	38	137	18		07/10/96	HLS
enol-d5 (SS)	8270	23602	5000.	3083.58	62	113	24		07/10/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	1993.67	60	120	23		07/10/96	HLS
Flurobiphenyl (SS)	8270	23602	3333.	1880.12	56	115	30		07/10/96	HLS
Fluorophenol (SS)	8270	23602	5000.	3282.71	66	121	25		07/10/96	HLS
4,6-Tribromophenol (SS)	8270	23602	5000.	2238.43	45	122	19		07/10/96	HLS

0003352

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->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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mple ID Duplicate

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
rphenyl-d14 (SS)	8270	23602	3333.	1897.53	57	137	18		07/11/96	HLS
enol-d5 (SS)	8270	23602	5000.	2294.68	46	113	24		07/11/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	1732.74	52	120	23		07/11/96	HLS
Flurobiphenyl (SS)	8270	23602	3333.	1543.32	46	115	30		07/11/96	HLS
Fluorophenol (SS)	8270	23602	5000.	1825.29	37	121	25		07/11/96	HLS
4,6-Tribromophenol (SS)	8270	23602	5000.	1112.88	22	122	19		07/11/96	HLS

mple ID QCRS/LCS

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
rphenyl-d14 (SS)	8270	23602	3333.	1033.93	31	137	18		07/10/96	HLS
enol-d5 (SS)	8270	23602	5000.	2468.43	49	113	24		07/10/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	1043.55	31	120	23		07/10/96	HLS
Flurobiphenyl (SS)	8270	23602	3333.	1502.48	45	115	30		07/10/96	HLS
Fluorophenol (SS)	8270	23602	5000.	1960.42	39	121	25		07/10/96	HLS
4,6-Tribromophenol (SS)	8270	23602	5000.	2384.54	48	122	19		07/10/96	HLS

mple ID Spike

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
rphenyl-d14 (SS)	8270	23602	3333.	1360.14	41	137	18		07/11/96	HLS
enol-d5 (SS)	8270	23602	5000.	1822.26	36	113	24		07/11/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	1555.73	47	120	23		07/11/96	HLS
Flurobiphenyl (SS)	8270	23602	3333.	1245.78	37	115	30		07/11/96	HLS
Fluorophenol (SS)	8270	23602	5000.	1739.38	35	121	25		07/11/96	HLS
4,6-Tribromophenol (SS)	8270	23602	5000.	924.55	18	122	19	*	07/11/96	HLS

000353

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->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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mple ID 96 0006337

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23602	5000.	1624.45	32	122	19		07/11/96	HLS
Flurobiphenyl (SS)	8270	23602	3333.	1751.74	52	115	30		07/11/96	HLS
Fluorophenol (SS)	8270	23602	5000.	2306.71	46	121	25		07/11/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	2014.46	60	120	23		07/11/96	HLS
enol-d5 (SS)	8270	23602	5000.	2284.86	46	113	24		07/11/96	HLS
rphenyl-d14 (SS)	8270	23602	3333.	3124.68	94	137	18		07/11/96	HLS

mple ID 96 0006338

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Flurobiphenyl (SS)	8270	23602	3333.	1220.68	37	115	30		07/11/96	HLS
Fluorophenol (SS)	8270	23602	5000.	1624.13	32	121	25		07/11/96	HLS
4,6-Tribromophenol (SS)	8270	23602	5000.	660.14	13	122	19	*	07/11/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	1435.6	43	120	23		07/11/96	HLS
enol-d5 (SS)	8270	23602	5000.	1822.06	36	113	24		07/11/96	HLS
rphenyl-d14 (SS)	8270	23602	3333.	1686.24	50	137	18		07/11/96	HLS

mple ID 96 0006339

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23602	5000.	1165.03	23	122	19		07/11/96	HLS
Flurobiphenyl (SS)	8270	23602	3333.	1613.96	48	115	30		07/11/96	HLS
Fluorophenol (SS)	8270	23602	5000.	2481.32	50	121	25		07/11/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	1808.15	54	120	23		07/11/96	HLS
enol-d5 (SS)	8270	23602	5000.	2549.82	51	113	24		07/11/96	HLS
rphenyl-d14 (SS)	8270	23602	3333.	1750.92	52	137	18		07/11/96	HLS

0003541

port Date: 07/26/96 SURROGATE QC REPORT BY PROJECT NUMBER Page: 8

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->> SURROGATE ACCURACY DATA continued <<---
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mple ID 96 0006340

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23602	5000.	2538.23	51	122	19		07/11/96	HLS
Flurobiphenyl (SS)	8270	23602	3333.	1816.72	54	115	30		07/11/96	HLS
Fluorophenol (SS)	8270	23602	5000.	3070.36	61	121	25		07/11/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	1975.79	59	120	23		07/11/96	HLS
enol-d5 (SS)	8270	23602	5000.	2900.9	58	113	24		07/11/96	HLS
rphenyl-d14 (SS)	8270	23602	3333.	4337.23	130	137	18		07/11/96	HLS

mple ID 96 0006341

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23602	5000.	2373.48	47	122	19		07/10/96	HLS
Flurobiphenyl (SS)	8270	23602	3333.	1603.91	48	115	30		07/10/96	HLS
Fluorophenol (SS)	8270	23602	5000.	2679.81	54	121	25		07/10/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	1674.26	50	120	23		07/10/96	HLS
enol-d5 (SS)	8270	23602	5000.	2568.96	51	113	24		07/10/96	HLS
rphenyl-d14 (SS)	8270	23602	3333.	860.98	26	137	18		07/10/96	HLS

mple ID 96 0006342

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23602	5000.	1923.09	38	122	19		07/11/96	HLS
Flurobiphenyl (SS)	8270	23602	3333.	1447.24	43	115	30		07/11/96	HLS
Fluorophenol (SS)	8270	23602	5000.	2584.4	52	121	25		07/11/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	1662.86	50	120	23		07/11/96	HLS
enol-d5 (SS)	8270	23602	5000.	2431.92	49	113	24		07/11/96	HLS
rphenyl-d14 (SS)	8270	23602	3333.	1264.8	38	137	18		07/11/96	HLS

000355

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->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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mple ID 96 0006343

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23602	5000.	1396.47	28	122	19		07/11/96	HLS
Flurobiphenyl (SS)	8270	23602	3333.	1761.32	53	115	30		07/11/96	HLS
Fluorophenol (SS)	8270	23602	5000.	2611.89	52	121	25		07/11/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	2024.83	61	120	23		07/11/96	HLS
enol-d5 (SS)	8270	23602	5000.	3031.23	61	113	24		07/11/96	HLS
rphenyl-d14 (SS)	8270	23602	3333.	3294.96	99	137	18		07/11/96	HLS

mple ID 96 0006350

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Fluorophenol (SS)	8270	23602	5000.	3091.06	62	121	25		07/11/96	HLS
Flurobiphenyl (SS)	8270	23602	3333.	1778.12	53	115	30		07/11/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	1992.9	60	120	23		07/11/96	HLS
rphenyl-d14 (SS)	8270	23602	3333.	2994.74	90	137	18		07/11/96	HLS
enol-d5 (SS)	8270	23602	5000.	2616.1	52	113	24		07/11/96	HLS
4,6-Tribromophenol (SS)	8270	23602	5000.	2807.86	56	122	19		07/11/96	HLS

mple ID 96 0006351

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23602	5000.	2375.71	48	122	19		07/11/96	HLS
Fluorophenol (SS)	8270	23602	5000.	2311.71	46	121	25		07/11/96	HLS
Flurobiphenyl (SS)	8270	23602	3333.	1420.29	43	115	30		07/11/96	HLS
trobenzene-d5 (SS)	8270	23602	3333.	1641.66	49	120	23		07/11/96	HLS
rphenyl-d14 (SS)	8270	23602	3333.	1795.96	54	137	18		07/11/96	HLS
enol-d5 (SS)	8270	23602	5000.	2434.35	49	113	24		07/11/96	HLS

000356

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-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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ample ID 96 0006352

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Flurobiphenyl (SS)	8270	23602	3333.	1353.54	41	115	30		07/12/96	HLS
-Fluorophenol (SS)	8270	23602	5000.	2560.94	51	121	25		07/12/96	HLS
,4,6-Tribromophenol (SS)	8270	23602	5000.	2370.8	47	122	19		07/12/96	HLS
henol-d5 (SS)	8270	23602	5000.	1288.77	26	113	24		07/12/96	HLS
itrobenzene-d5 (SS)	8270	23602	3333.	1956.93	59	120	23		07/12/96	HLS
erphenyl-d14 (SS)	8270	23602	3333.	2390.47	72	137	18		07/12/96	HLS

ample ID 96 0006353

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
,4,6-Tribromophenol (SS)	8270	23602	5000.	2462.78	49	122	19		07/12/96	HLS
-Flurobiphenyl (SS)	8270	23602	3333.	1592.	48	115	30		07/12/96	HLS
-Fluorophenol (SS)	8270	23602	5000.	2365.8	47	121	25		07/12/96	HLS
itrobenzene-d5 (SS)	8270	23602	3333.	1561.73	47	120	23		07/12/96	HLS
henol-d5 (SS)	8270	23602	5000.	2496.88	50	113	24		07/12/96	HLS
erphenyl-d14 (SS)	8270	23602	3333.	3742.38	110	137	18		07/12/96	HLS

ample ID 96 0006494

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
,4,6-Tribromophenol (SS)	8270	23602	5000.	2119.43	42	122	19		07/12/96	HLS
-Flurobiphenyl (SS)	8270	23602	3333.	1330.37	40	115	30		07/12/96	HLS
-Fluorophenol (SS)	8270	23602	5000.	2167.47	43	121	25		07/12/96	HLS
itrobenzene-d5 (SS)	8270	23602	3333.	1497.65	45	120	23		07/12/96	HLS
henol-d5 (SS)	8270	23602	5000.	2079.48	42	113	24		07/12/96	HLS
erphenyl-d14 (SS)	8270	23602	3333.	2483.04	74	137	18		07/12/96	HLS

C Number 23605 Procedure 8260

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-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23605	50.	48.59	97	115	85		06/20/96	HLS
ibromofluoromethane (SS)	8260	23605	50.	52.5	105	115	85		06/20/96	HLS
-Bromofluorobenzene (SS)	8260	23605	50.	49.13	98	115	85		06/20/96	HLS

ample ID Duplicate

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23605	50.	45.53	91	115	85		06/21/96	HLS
ibromofluoromethane (SS)	8260	23605	50.	48.35	97	115	85		06/21/96	HLS
-Bromofluorobenzene (SS)	8260	23605	50.	31.17	62	115	85	*	06/21/96	HLS

ample ID QCRS/LCS

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23605	50.	49.61	99	115	85		06/21/96	HLS
ibromofluoromethane (SS)	8260	23605	50.	58.12	116	115	85	*	06/21/96	HLS
-Bromofluorobenzene (SS)	8260	23605	50.	45.7	91	115	85		06/21/96	HLS

ample ID Spike

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23605	50.	45.27	91	115	85		06/21/96	HLS
ibromofluoromethane (SS)	8260	23605	50.	48.81	98	115	85		06/21/96	HLS
-Bromofluorobenzene (SS)	8260	23605	50.	31.56	63	115	85	*	06/21/96	HLS

0003588

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-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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ample ID 96 0006343

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23605	50.	41.897	84	115	85	*	06/20/96	HLS
ibromofluoromethane (SS)	8260	23605	50.	63.565	130	115	85	*	06/20/96	HLS
oluene-d8 (SS)	8260	23605	50.	35.674	71	115	85	*	06/20/96	HLS

ample ID 96 0006350

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23605	50.	34.892	70	115	85	*	06/20/96	HLS
ibromofluoromethane (SS)	8260	23605	50.	45.872	92	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23605	50.	45.594	91	115	85		06/20/96	HLS

ample ID 96 0006351

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23605	50.	44.802	90	115	85		06/21/96	HLS
ibromofluoromethane (SS)	8260	23605	50.	53.523	110	115	85		06/21/96	HLS
oluene-d8 (SS)	8260	23605	50.	47.45	95	115	85		06/21/96	HLS

ample ID 96 0006352

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23605	50.	38.017	76	115	85	*	06/21/96	HLS
ibromofluoromethane (SS)	8260	23605	50.	49.575	99	115	85		06/21/96	HLS
oluene-d8 (SS)	8260	23605	50.	43.199	86	115	85		06/21/96	HLS

000359

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C-of-C Number: C14749

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-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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ample ID 96 0006353

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23605	50.	34.775	70	115	85	*	06/21/96	HLS
ibromofluoromethane (SS)	8260	23605	50.	44.849	90	115	85		06/21/96	HLS
oluene-d8 (SS)	8260	23605	50.	44.596	89	115	85		06/21/96	HLS

C Number 23674 Procedure 8260

ample ID Blank

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23674	50.	49.74	99	115	85		06/10/96	HLS
ibromofluoromethane (SS)	8260	23674	50.	41.09	82	115	85	*	06/10/96	HLS
-Bromofluorobenzene (SS)	8260	23674	50.	51.77	104	115	85		06/10/96	HLS

ample ID Duplicate

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23674	50.	52.63	105	115	85		06/10/96	HLS
ibromofluoromethane (SS)	8260	23674	50.	52.29	105	115	85		06/10/96	HLS
-Bromofluorobenzene (SS)	8260	23674	50.	45.41	91	115	85		06/10/96	HLS

ample ID QCRS/LCS

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23674	50.	50.76	102	115	85		06/10/96	HLS

000390

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-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23674	50.	53.84	108	115	85		06/10/96	HLS
-Bromofluorobenzene (SS)	8260	23674	50.	50.92	102	115	85		06/10/96	HLS

ample ID Spike

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23674	50.	48.15	96	115	85		06/10/96	HLS
ibromofluoromethane (SS)	8260	23674	50.	53.58	107	115	85		06/10/96	HLS
-Bromofluorobenzene (SS)	8260	23674	50.	46.26	93	115	85		06/10/96	HLS

ample ID 96 0006241

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23674	50.	48.593	97	115	85		06/10/96	HLS
oluene-d8 (SS)	8260	23674	50.	50.492	100	115	85		06/10/96	HLS
ibromofluoromethane (SS)	8260	23674	50.	43.134	86	115	85		06/10/96	HLS

ample ID 96 0006242

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23674	50.	45.183	90	115	85		06/10/96	HLS
ibromofluoromethane (SS)	8260	23674	50.	49.072	98	115	85		06/10/96	HLS
oluene-d8 (SS)	8260	23674	50.	48.449	97	115	85		06/10/96	HLS

ample ID 96 0006243

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23674	50.	45.319	91	115	85		06/10/96	HLS

000361

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-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23674	50.	51.147	100	115	85		06/10/96	HLS
oluene-d8 (SS)	8260	23674	50.	47.968	96	115	85		06/10/96	HLS

C Number 23675 Procedure 8260

ample ID Blank

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23675	50.	52.33	105	115	85		06/12/96	HLS
-Bromofluorobenzene (SS)	8260	23675	50.	47.63	95	115	85		06/12/96	HLS
oluene-d8 (SS)	8260	23675	50.	49.16	98	115	85		06/12/96	HLS

ample ID Duplicate

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23675	50.	64.19	128	115	85	*	06/13/96	HLS
-Bromofluorobenzene (SS)	8260	23675	50.	30.87	62	115	85	*	06/13/96	HLS
oluene-d8 (SS)	8260	23675	50.	39.59	79	115	85	*	06/13/96	HLS

ample ID QCRS/LCS

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23675	50.	54.1	108	115	85		06/19/96	HLS
-Bromofluorobenzene (SS)	8260	23675	50.	46.18	92	115	85		06/19/96	HLS
oluene-d8 (SS)	8260	23675	50.	48.64	97	115	85		06/19/96	HLS

000362

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****
->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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mple ID Spike

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
bromofluoromethane (SS)	8260	23675	50.	58.27	117	115	85	*	06/13/96	HLS
Bromofluorobenzene (SS)	8260	23675	50.	30.29	61	115	85	*	06/13/96	HLS
oluene-d8 (SS)	8260	23675	50.	38.99	78	115	85	*	06/13/96	HLS

mple ID 96 0006337

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Bromofluorobenzene (SS)	8260	23675	50.	54.993	110	115	85		06/12/96	HLS
oluene-d8 (SS)	8260	23675	50.	11.101	22	115	85	*	06/12/96	HLS
bromofluoromethane (SS)	8260	23675	50.	46.978	94	115	85		06/12/96	HLS

mple ID 96 0006338

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Bromofluorobenzene (SS)	8260	23675	50.	47.661	95	115	85		06/13/96	HLS
bromofluoromethane (SS)	8260	23675	50.	50.229	100	115	85		06/13/96	HLS
oluene-d8 (SS)	8260	23675	50.	17.044	34	115	85	*	06/13/96	HLS

mple ID 96 0006339

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Bromofluorobenzene (SS)	8260	23675	50.	85.085	170	115	85	*	06/13/96	HLS
bromofluoromethane (SS)	8260	23675	50.	127.82	260	115	85	*	06/13/96	HLS
oluene-d8 (SS)	8260	23675	50.	6.807	14	115	85	*	06/13/96	HLS

Number 23676 Procedure 8260

000363

[redacted] Date: 07/26/96

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->> SURROGATE ACCURACY DATA continued <<---
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ample ID Blank

Analyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23676	50.	48.25	97	115	85		06/18/96	HLS
bromofluoromethane (SS)	8260	23676	50.	50.6	101	115	85		06/18/96	HLS
Bromofluorobenzene (SS)	8260	23676	50.	49.98	100	115	85		06/18/96	HLS

ample ID 96 0006340

Analyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Bromofluorobenzene (SS)	8260	23676	50.	42.674	85	115	85		06/18/96	HLS
bromofluoromethane (SS)	8260	23676	50.	27.303	55	115	85	*	06/18/96	HLS
oluene-d8 (SS)	8260	23676	50.	11.343	23	115	85	*	06/18/96	HLS

ample ID 96 0006341

Analyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Bromofluorobenzene (SS)	8260	23676	50.	39.84	80	115	85	*	06/18/96	HLS
bromofluoromethane (SS)	8260	23676	50.	101.002	200	115	85	*	06/18/96	HLS
oluene-d8 (SS)	8260	23676	50.	20.271	40	115	85	*	06/18/96	HLS

ample ID 96 0006342

Analyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Bromofluorobenzene (SS)	8260	23676	50.	109.264	220	115	85	*	06/18/96	HLS
bromofluoromethane (SS)	8260	23676	50.	92.719	180	115	85	*	06/18/96	HLS
oluene-d8 (SS)	8260	23676	50.	4.683	9.4	115	85	*	06/18/96	HLS

000364

eport Date: 07/26/96 SURROGATE QC REPORT BY PROJECT NUMBER Page: 18

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-->> A N A L Y S T ' S QC C O M M E N T S <<---
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C Number: 23006

Sb matrix spion recoveries not in control due to matrix effect. QC accepted based on QCRS and precision recovery data.

C Number: 23040

Data entered by SFL

C Number: 23063

Data entered by SFL

C Number: 23676

Reference QC No 23675 for spikes, lcs and dup.

000365

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

eport Date: 07/26/96 SURROGATE QC REPORT BY PROJECT NUMBER Page: 1

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Project Number: 9606125
C-of-C Number: C14777

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-->> S U R R O G A T E A C C U R A C Y D A T A <<---
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C Number 23416 Procedure 8260

ample ID Blank

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23416	50.	48.33	97	115	85		06/19/96	HLS
-Bromofluorobenzene (SS)	8260	23416	50.	45.36	91	115	85		06/19/96	HLS
oluene-d8 (SS)	8260	23416	50.	44.8	90	115	85		06/19/96	HLS

ample ID Spike

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23416	50.	46.72	93	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23416	50.	49.18	98	115	85		06/20/96	HLS
ibromofluoromethane (SS)	8260	23416	50.	48.86	98	115	85		06/20/96	HLS

ample ID 96 0006244

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23416	50.	44.377	89	115	85		06/19/96	HLS
-Bromofluorobenzene (SS)	8260	23416	50.	46.322	93	115	85		06/19/96	HLS
ibromofluoromethane (SS)	8260	23416	50.	51.513	100	115	85		06/19/96	HLS

ample ID 96 0006246

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23416	50.	46.009	92	115	85		06/19/96	HLS

0000366

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Project Number: 9606125
C-of-C Number: C14777

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-->> SURROGATE ACCURACY DATA continued <<---
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nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23416	50.	48.09	96	115	85		06/19/96	HLS
oluene-d8 (SS)	8260	23416	50.	43.535	87	115	85		06/19/96	HLS

ample ID 96 0006336

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23416	50.	45.019	90	115	85		06/19/96	HLS
oluene-d8 (SS)	8260	23416	50.	46.819	94	115	85		06/19/96	HLS
ibromofluoromethane (SS)	8260	23416	50.	53.632	110	115	85		06/19/96	HLS

ample ID 96 0006344

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23416	50.	47.722	95	115	85		06/19/96	HLS
oluene-d8 (SS)	8260	23416	50.	46.922	94	115	85		06/19/96	HLS
ibromofluoromethane (SS)	8260	23416	50.	51.181	100	115	85		06/19/96	HLS

ample ID 96 0006345

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23416	50.	50.294	100	115	85		06/20/96	HLS
ibromofluoromethane (SS)	8260	23416	50.	56.355	110	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23416	50.	46.241	92	115	85		06/20/96	HLS

C Number 23421 Procedure 8260

000367

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->> SURROGATE ACCURACY DATA continued <<---
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mple ID Blank

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23421	50.	46.13	92	115	85		06/20/96	HLS
Bromofluorobenzene (SS)	8260	23421	50.	46.39	93	115	85		06/20/96	HLS
bromofluoromethane (SS)	8260	23421	50.	49.03	98	115	85		06/20/96	HLS

mple ID Duplicate

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Bromofluorobenzene (SS)	8260	23421	50.	49.1	98	115	85		06/20/96	HLS
bromofluoromethane (SS)	8260	23421	50.	50.25	101	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	48.16	96	115	85		06/20/96	HLS

mple ID QCRS/LCS

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
Bromofluorobenzene (SS)	8260	23421	50.	54.69	109	115	85		06/21/96	HLS
bromofluoromethane (SS)	8260	23421	50.	48.45	97	115	85		06/21/96	HLS
oluene-d8 (SS)	8260	23421	50.	49.73	99	115	85		06/21/96	HLS

mple ID Spike

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
bromofluoromethane (SS)	8260	23421	50.	52.12	104	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	49.31	99	115	85		06/20/96	HLS
Bromofluorobenzene (SS)	8260	23421	50.	47.19	94	115	85		06/20/96	HLS

000368

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-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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ample ID 96 0006247

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	45.29	90	115	85		06/20/96	HLS
ibromofluoromethane (SS)	8260	23421	50.	47.146	94	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	42.57	85	115	85		06/20/96	HLS

ample ID 96 0006346

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23421	50.	49.739	99	115	85		06/20/96	HLS
-Bromofluorobenzene (SS)	8260	23421	50.	46.598	93	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	45.453	91	115	85		06/20/96	HLS

ample ID 96 0006347

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
oluene-d8 (SS)	8260	23421	50.	47.418	95	115	85		06/20/96	HLS
-Bromofluorobenzene (SS)	8260	23421	50.	46.045	92	115	85		06/20/96	HLS
ibromofluoromethane (SS)	8260	23421	50.	49.705	99	115	85		06/20/96	HLS

ample ID 96 0006348

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
ibromofluoromethane (SS)	8260	23421	50.	51.694	100	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	44.655	89	115	85		06/20/96	HLS
-Bromofluorobenzene (SS)	8260	23421	50.	45.578	91	115	85		06/20/96	HLS

000369

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->> SURROGATE ACCURACY DATA continued <<---
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ample ID 96 0006349

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	47.158	94	115	85		06/20/96	HLS
ibromofluoromethane (SS)	8260	23421	50.	50.792	100	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	46.004	92	115	85		06/20/96	HLS

ample ID 96 0006493

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	46.849	94	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	43.481	87	115	85		06/20/96	HLS
ibromofluoromethane (SS)	8260	23421	50.	49.19	98	115	85		06/20/96	HLS

ample ID 96 0006504

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	44.566	89	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	45.965	92	115	85		06/20/96	HLS
.bromofluoromethane (SS)	8260	23421	50.	51.645	100	115	85		06/20/96	HLS

ample ID 96 0006505

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Bromofluorobenzene (SS)	8260	23421	50.	45.42	91	115	85		06/20/96	HLS
.bromofluoromethane (SS)	8260	23421	50.	50.818	100	115	85		06/20/96	HLS
oluene-d8 (SS)	8260	23421	50.	46.753	94	115	85		06/20/96	HLS

: Number 23523 Procedure 8270

000370

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-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
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ample ID Blank

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23523	5000.	1913.358	38	122	19		07/09/96	SCL
Fluorophenol (SS)	8270	23523	5000.	1989.879	40	121	25		07/09/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	2073.054	62	120	23		07/09/96	SCL
henol-d5 (SS)	8270	23523	5000.	2644.965	53	113	24		07/09/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	1975.24	59	137	18		07/09/96	SCL
Flurobiphenyl (SS)	8270	23523	3333.	1902.379	57	115	30		07/09/96	SCL

ample ID Duplicate

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
henol-d5 (SS)	8270	23523	5000.	4758.342	95	113	24		07/09/96	SCL
4,6-Tribromophenol (SS)	8270	23523	5000.	3557.175	71	122	19		07/09/96	SCL
Fluorophenol (SS)	8270	23523	5000.	4139.559	83	121	25		07/09/96	SCL
Flurobiphenyl (SS)	8270	23523	3333.	2756.397	83	115	30		07/09/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	2713.38	81	120	23		07/09/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	2710.071	81	137	18		07/09/96	SCL

ample ID QCRS/LCS

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23523	5000.	2349.232	47	122	19		07/09/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	2027.524	61	120	23		07/09/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	1936.888	58	137	18		07/09/96	SCL
henol-d5 (SS)	8270	23523	5000.	2495.976	50	113	24		07/09/96	SCL
Flurobiphenyl (SS)	8270	23523	3333.	1797.448	54	115	30		07/09/96	SCL
Fluorophenol (SS)	8270	23523	5000.	2495.976	50	121	25		07/09/96	SCL

00321

port Date: 07/26/96 SURROGATE QC REPORT BY PROJECT NUMBER Page: 7

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Project Number: 9606125
C-of-C Number: C14777

****
->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
****

mple ID Spike

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
trobenzene-d5 (SS)	8270	23523	3333.	3292.381	99	120	23		07/09/96	SCL
rphenyl-d14 (SS)	8270	23523	3333.	3319.013	100	137	18		07/09/96	SCL
enol-d5 (SS)	8270	23523	5000.	5432.928	109	113	24		07/09/96	SCL
Fluorophenol (SS)	8270	23523	5000.	4850.353	97	121	25		07/09/96	SCL
4,6-Tribromophenol (SS)	8270	23523	5000.	3472.147	69	122	19		07/09/96	SCL
Flurobiphenyl (SS)	8270	23523	3333.	3472.147	104	115	30		07/09/96	SCL

mple ID 96 0006241

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
4,6-Tribromophenol (SS)	8270	23523	5000.	2.75	55	122	19		07/08/96	SCL
Flurobiphenyl (SS)	8270	23523	3333.	2.739	83	115	30		07/08/96	SCL
Fluorophenol (SS)	8270	23523	5000.	3.8	76	121	25		07/08/96	SCL
trobenzene-d5 (SS)	8270	23523	3333.	2.541	77	120	23		07/08/96	SCL
enol-d5 (SS)	8270	23523	5000.	4.4	88	113	24		07/08/96	SCL
rphenyl-d14 (SS)	8270	23523	3333.	2.64	80	137	18		07/08/96	SCL

mple ID 96 0006242

alyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
rphenyl-d14 (SS)	8270	23523	3333.	2.904	88	137	18		07/08/96	SCL
enol-d5 (SS)	8270	23523	5000.	4.8	96	113	24		07/08/96	SCL
trobenzene-d5 (SS)	8270	23523	3333.	2.607	79	120	23		07/08/96	SCL
4,6-Tribromophenol (SS)	8270	23523	5000.	3.6	72	122	19		07/08/96	SCL
Flurobiphenyl (SS)	8270	23523	3333.	2.838	86	115	30		07/08/96	SCL
Fluorophenol (SS)	8270	23523	5000.	4.	80	121	25		07/08/96	SCL

000372

eport Date: 07/26/96 SURROGATE QC REPORT BY PROJECT NUMBER Page: 8

Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Project Number: 9606125
C-of-C Number: C14777

****
-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
****

ample ID 96 0006243

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Flurobiphenyl (SS)	8270	23523	3333.	2.739	83	115	30		07/08/96	SCL
-Fluorophenol (SS)	8270	23523	5000.	3.95	79	121	25		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	2.706	82	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	4.55	91	113	24		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	2.838	86	137	18		07/08/96	SCL
,4,6-Tribromophenol (SS)	8270	23523	5000.	3.2	64	122	19		07/08/96	SCL

ample ID 96 0006345

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
,4,6-Tribromophenol (SS)	8270	23523	5000.	112.5	75	122	19		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23523	3333.	69.	69	115	30		07/08/96	SCL
-Fluorophenol (SS)	8270	23523	5000.	61.5	41	121	25		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	73.	73	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	52.5	35	113	24		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	84.	84	137	18		07/08/96	SCL

ample ID 96 0006346

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Fluorophenol (SS)	8270	23523	5000.	61.	41	121	25		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23523	3333.	60.	60	115	30		07/08/96	SCL
,4,6-Tribromophenol (SS)	8270	23523	5000.	87.	58	122	19		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	66.	66	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	118.5	79	113	24		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	66.	66	137	18		07/08/96	SCL

000373

Kathy Thalman
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Tampa FL 33618

Project Number: 9606125
C-of-C Number: C14777

****
-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
****

ample ID 96 0006348

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
itrobenzene-d5 (SS)	8270	23523	3333.	75.	75	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	46.5	31	113	24		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	83.	83	137	18		07/08/96	SCL
,4,6-Tribromophenol (SS)	8270	23523	5000.	94.5	63	122	19		07/08/96	SCL
-Fluorophenol (SS)	8270	23523	5000.	52.5	35	121	25		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23523	3333.	68.	68	115	30		07/08/96	SCL

ample ID 96 0006349

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
-Fluorophenol (SS)	8270	23523	5000.	78.	52	121	25		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23523	3333.	53.	53	115	30		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	57.	57	137	18		07/08/96	SCL
,4,6-Tribromophenol (SS)	8270	23523	5000.	78.	52	122	19		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	61.	61	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	97.5	65	113	24		07/08/96	SCL

ample ID 96 0006505

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
,4,6-Tribromophenol (SS)	8270	23523	5000.	103.5	69	122	19		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23523	3333.	69.	69	115	30		07/08/96	SCL
-Fluorophenol (SS)	8270	23523	5000.	54.	36	121	25		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	78.	78	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	54.	36	113	24		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	85.	85	137	18		07/08/96	SCL

000374

Kathy Thalman
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Project Number: 9606125
C-of-C Number: C14777

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-->> S U R R O G A T E A C C U R A C Y D A T A continued <<---
****

ample ID 96 0006506

nalyte	Procedure#	QC Number	True Val	Measured	Surr % Rec	AUL	ALL	F	Det Date	Ast
,4,6-Tribromophenol (SS)	8270	23523	5000.	79.5	53	122	19		07/08/96	SCL
-Flurobiphenyl (SS)	8270	23523	3333.	49.	49	115	30		07/08/96	SCL
-Fluorophenol (SS)	8270	23523	5000.	93.	62	121	25		07/08/96	SCL
itrobenzene-d5 (SS)	8270	23523	3333.	55.	55	120	23		07/08/96	SCL
henol-d5 (SS)	8270	23523	5000.	93.	62	113	24		07/08/96	SCL
erphenyl-d14 (SS)	8270	23523	3333.	58.	58	137	18		07/08/96	SCL

****
-->> A N A L Y S T ' S QC C O M M E N T S <<---
****

C Number: 23052

Refer to previous blank and apg from QC# 23037. Refer to previous SlossH2O spikes from QC# 22962.

C Number: 23065

data entered by SFL

C Number: 23416

Reference precision and QCRS from 23415

000375

Kathy Thalman
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Suite 115
Tampa FL 33618

Project Number: 9606125
C-of-C Number: C14777

****
-->> A N A L Y S T ' S QC C O M M E N T S continued <<---
****

C Number: 23421

LCS recoveries for 4-methyl-2-pentanone and acrylonitrile are higher than the project acceptance limits. The results are within the laboratory's historical recovery limits. 1,2,3-trichloropropane MS recovery is higher than the project limit. MSI was within the limits. Acrolein MS/MSD recoveries are low and precision is also out of the limit. Ethylmethacrylate and vinyl acetate RPD results are also out of the precision limits.

0003376

GERAGHTY & MILLER, INC. Environmental Services
a heidemij company

Laboratory Task Order No. 1716

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number TE [illegible]

Project Location [illegible]

Laboratory [illegible]

Sampler(s)/Affiliation [illegible]

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION									TOTAL
[illegible]	L	—		3									3
[illegible]	S*	1/96 1215			1	1	1						3
MS/MSD [illegible]	S*	1330			1	1	1						3
[illegible]	S*	1345			1	1	1						3
[illegible]	S*	1445			1	1	1						3
[illegible]	S*	1430			1	1	1						3
[illegible]	S*	1495			1	1	1						3
[illegible]	S*	1/96 —			1	1	1						3
[illegible]	L	—						1					1

Total No. of Bottles/ Containers: 25

Sample Code: L = Liquid; S = Solid; A = Air

Relinquished by: [signature]	Organization: G+M (Tampa)	Date 6/14/96	Time 1000	Seal Intact? Yes No N/A
Received by: [signature]	Organization: CAE	Date 6/17/96	Time 1000	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks:

* Samples have Teflon Sheets at Each Interface. MS/MSD on [illegible]

Please Add 1 Day Turnaround to Result Turnaround at Each Level

COMPLETED

Delivery Method: ☐ In Person ☑ Common Carrier [illegible] SPECIFY ☐ Lab Courier ☐ Other SPECIFY

G&M Form 09-9-91

C14775
960149
666
6-25-96

Center For Applied Engineering, Inc.

CHAIN-OF-CUSTODY CHECKLIST

CHAIN-OF-CUSTODY NO.: C14775	LAB PROJECT NO.: 9606149
DATE: 6-11-96 TIME: 1000	NUMBER OF C-O-C FORMS: 1
DELIVERED BY: Airborne Express	AIRBILL OR SHIPPING LOG NO.: 5027454250
CLIENT NAME: Sloss Ind. / G&M	
PROJECT COMMENTS: TF0320.014	

ITEM	Y	N	COMMENTS
CUSTODY SEAL INTACT	✓		
SHIPPING CONTAINER INTACT	✓		
ICE PRESENT	✓		
TEMPERATURE OF TEMP. CHECK CONTAINER	✓		7.5°C
NUMBER OF CONTAINERS MATCH	✓		
TYPE OF CONTAINERS MATCH	✓		
PROPER CONTAINERS (For Analyses Requested)	✓		
PROPER PRESERVATIONS (For Analyses Requested)	✓		
pH PRESERVATIONS VERIFIED	(NA)	✓	unpreserved + vials
DO VIALS CONTAIN AIR	✓		TB - 2 of 3 contain bubbles <5mm
SAMPLES WITHIN HOLDING TIMES	✓		
CONTAINERS BROKEN		✓	
MULTI-PHASE SAMPLE (Indicate number of phases, and probable type and/or identification.)		✓	
SEDIMENT PRESENT IN WATER SAMPLES		✓	Note Sample ID's and approximate volume below.

OTHER COMMENTS: _____

In the event of sample rejection or other problems, has the client been contacted? Yes ___ No ___

CONTACT NAME: _____ DATE: _____ TIME: _____

AGREED UPON COURSE OF ACTION: _____

COMPLETED BY: _____ APPROVED BY: AUM 6-12-96

(Approval required for sample rejection and special problems.)

COCCI.DOT Rev 04/96

GERAGHTY & MILLER, INC. Environmental Services
a Halliburton company

Laboratory Task Order No. 17416

CHAIN-OF-CUSTODY RECORD

Page ___ of 1

Project Number 76220.04

Project Location Sites - Birmingham, AL

Laboratory Center Point Hydro Engr.

Sampler(s)/Affiliation J. Hughes / G&M

SAMPLE BOTTLE / CONTAINER DESCRIPTION

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	EPA 5260 40mL Glass Vial HCl	Pint Brn Glass Amber HCl	1 Liter Plastic HNO3	2 Liter Plastic NaOH	1 Liter Plastic Tetraborate Acid Glass Vial	EPA 5260 Methanol 4 oz Glass Jar	EPA 8270 8 oz Glass Jar	Methylene Chloride 8 oz Glass Jar		TOTAL	
SB-02A-Trip Blank	L	6/6		3									3	96-6347
SB-02H-Filtered	L	1015		3	3	1	1						8	96-6348
SB-02H-Sketch	L	1045		3	2	1	1						8	96-6349
SB-02H-Sludge 1 (7-9)	S	1125							1	1	1		3	96-6350
SB-02H-Sludge 3 (16-18)	S	1405							1	1	1		3	96-6351
SB-02A-Sludge 2 (2-4)	S	1500							1	1	1		3	96-6352
SB-02A-Sludge 4 (2-4)	S	6/6 1554							1	1	1		3	96-6353
Trip Blank	L	----------						1					1	

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 32

Relinquished by: [signature]	Organization: S&H (Tampa)	Date 6/10/96	Time 2000	Seal Intact? Yes No N/A
Received by: [signature]	Organization: CAE	Date 6/11/96	Time 1000	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: Direct any / All questions to Kathy Thalman at 813 961 1921

* Soil samples contain coal and/or coke

COMPLETED

Delivery Method: ☐ In Person ☒ Common Carrier Airborne Express ☐ Lab Courier ☐ Other

SPECIFY

G&M Form 09-9-91

Southprint 95-0533

000379

14777
960615
666
6-25-9

GERAGHTY & MILLER, INC.
Environmental Services
a heidemij company

Laboratory Task Order No. 17416

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number TF0320.014

Project Location Sloss - Birmingham, AL

Laboratory Center for Applied Engineering

Sampler(s)/Affiliation J. Hughes / G&M

COC # C 14776
PROJECT # 9606150
ACCOUNT # 666
DUE DATE: 6-25-96

SAMPLE BOTTLE / CONTAINER DESCRIPTION

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	EPA 8260 40mL GLASS VIAL HCl	EPA 8270 LITER AMBER GLASS	PRIORITY POLLUTANT METALS LITER PLASTIC HNO_3	CYANIDE LITER PLASTIC NaOH	TEMP BLANK 40mL GLASS VIAL					TOTAL	
08-Co-01A-TB0006	L	—		3									3	96-6344
08-Co-01A-FB0003	L	6/8/96 1230		3	3	1	1						8	96-6345
08-Co-014-SLEB03	L	6/8/96 1245		3	3	1	1						8	96-6346
TEMP BLANK	L	—						1					1	

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 20

Relinquished by: [signature]	Organization: G&M TAMPA	Date 6/10/96	Time 2000	Seal Intact?
Received by: [signature]	Organization: CAE	Date 6/11/96	Time 1000	Yes No N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A

Special Instructions/Remarks: Direct any/all questions to Kathy Thalman at 813 9611921

Delivery Method: ☐ In Person ☒ Common Carrier Airborne Express ☐ Lab Courier ☐ Other

Center For Applied Engineering, Inc.

CHAIN-OF-CUSTODY CHECKLIST

CHAIN-OF-CUSTODY NO.: C14776	LAB PROJECT NO.: 9606150
DATE: 6-11-96 TIME: 1000	NUMBER OF C-O-C FORMS: 1
DELIVERED BY: Airborne Express	AIRBILL OR SHIPPING LOG NO.: 5027454655
CLIENT NAME: Sloss Ind. / G+M	
PROJECT COMMENTS: TF 0320.014	

ITEM	Y	N	COMMENTS
CUSTODY SEAL INTACT	✓		
SHIPPING CONTAINER INTACT	✓		
ICE PRESENT	✓		
TEMPERATURE OF TEMP. CHECK CONTAINER	✓		8°C
NUMBER OF CONTAINERS MATCH	✓		
TYPE OF CONTAINERS MATCH	✓		
PROPER CONTAINERS (For Analyses Requested)	✓		
PROPER PRESERVATIONS (For Analyses Requested)	✓		
pH PRESERVATIONS VERIFIED	✓		
DO VIALS CONTAIN AIR	✓		TB. 2 of 3 contain bubbles <5mm
SAMPLES WITHIN HOLDING TIMES	✓		
CONTAINERS BROKEN		✓	
MULTI-PHASE SAMPLE (Indicate number of phases, and probable type and/or identification.)		✓	
SEDIMENT PRESENT IN WATER SAMPLES		✓	Note Sample ID's and approximate volume below.

OTHER COMMENTS: _____

In the event of sample rejection or other problems, has the client been contacted? Yes ___ No ___

CONTACT NAME: _____ DATE: _____ TIME: _____

AGREED UPON COURSE OF ACTION: _____

COMPLETED BY: _____ APPROVED BY: AUM 6-12-96

(Approval required for sample rejection and special problems.)

COCCL.DOT Rev 04/96

Center For Applied Engineering, Inc.

CHAIN-OF-CUSTODY CHECKLIST

CHAIN-OF-CUSTODY NO.: C14777	LAB PROJECT NO.: 9606151
DATE: 6-11-96 TIME: 1000	NUMBER OF C-O-C FORMS: 1
DELIVERED BY: Airborne Express	AIRBILL OR SHIPPING LOG NO.: 5027454552
CLIENT NAME: Sloss Ind / C+M	
PROJECT COMMENTS: TF0320.014	

ITEM	Y	N	COMMENTS
CUSTODY SEAL INTACT	✓		
SHIPPING CONTAINER INTACT	✓		
ICE PRESENT	✓		
TEMPERATURE OF TEMP. CHECK CONTAINER	✓		8°C
NUMBER OF CONTAINERS MATCH	✓		
TYPE OF CONTAINERS MATCH	✓		
PROPER CONTAINERS (For Analyses Requested)	✓		
PROPER PRESERVATIONS (For Analyses Requested)	✓		
pH PRESERVATIONS VERIFIED	✓		
DO VIALS CONTAIN AIR	✓		TB 3 of 3 contain bubbles < 5mm
SAMPLES WITHIN HOLDING TIMES	✓		
CONTAINERS BROKEN		✓	
MULTI-PHASE SAMPLE (Indicate number of phases, and probable type and/or identification.)		✓	
SEDIMENT PRESENT IN WATER SAMPLES		✓	Note Sample ID's and approximate volume below.

OTHER COMMENTS: _____

In the event of sample rejection or other problems, has the client been contacted? Yes ___ No ___

CONTACT NAME: _____ DATE: _____ TIME: _____

AGREED UPON COURSE OF ACTION: _____

COMPLETED BY: _____ APPROVED BY: ACM 6-12-96

(Approval required for sample rejection and special problems.)

COCCL.DOT Rev 04/96

GERAGHTY & MI[illegible], INC.
Environ[illegible] Services
a neidemij company

Laboratory Task Order No. 17416

CHAIN-OF-CUSTODY RECORD

Page ___ of 1

Project Number TF0320.014

Project Location SLOSS-BIRMINGHAM

Laboratory CENTER FOR APPLIED ENGINEERING

Sampler(s)/Affiliation J. HUGHES / G&M

COC # C14775
PROJECT # 9606149
ACCOUNT # 666
DUE DATE: 6-25-96

SAMPLE BOTTLE / CONTAINER DESCRIPTION

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	EPA 8260 40mL GLASS VIAL HCl	EPA 8260 4oz GLASS JAR	EPA 8270 8oz GLASS JAR	PRIORITY POLLUTANT METALS, Ba, CYANIDE 8oz GLASS JAR	TEMP BLANK 40mL GLASS JAR					TOTAL	
608-CO-01A-TB0005	L	—		3									3	96-633
608-CO-01A-SL0001(0-0.1)	S*	6/8/96 1315			1	1	1						3	96-633
608-CO-01A-SL0002(0.0.1) MS/MSD	S*	1330			1	1	1						3	96-633
608-CO-01A-SL0003(0-0.1)	S*	1345			1	1	1						3	96-633
608-CO-01B-SL0001(0-0.1)	S*	1415			1	1	1						3	96-634
608-CO-01B-SL0002(0-0.1)	S*	1430			1	1	1						3	96-634
608-CO-01B-SL0003(0-0.1)	S*	1445			1	1	1						3	96-634
608-CO-01A-SL9002	S*	6/8/96 —			1	1	1						3	96-634
TEMP BLANK	L	—						1					1	

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 25

Relinquished by: [signature]	Organization: G&M (TAMPA)	Date 6/10/96 Time 2000	Seal Intact? Yes No N/A
Received by: [signature]	Organization: CAE	Date 6/11/96 Time 1000	
Relinquished by:	Organization:	Date / / Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / / Time	

Special Instructions/Remarks:

* SAMPLES ARE PRODUCT SAMPLES OF COKE BREEZE. MS/MSD ON 960608-CO-01A-SL0002 (0-0.1)

DIRECT ANY / ALL QUESTIONS TO KATHY THALMAN AT 813 961 1921

COMPLETED

Delivery Method: ☐ In Person ☒ Common Carrier AIRBORNE EXPRESS (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

Southprint 95-0533

Center For Applied Engineering, Inc.

CHAIN-OF-CUSTODY CHECKLIST

CHAIN-OF-CUSTODY NO.: C1475	LAB PROJECT NO.: 9606149
DATE: 6-11-96 TIME: 1000	NUMBER OF C-O-C FORMS: 1
DELIVERED BY: Airborne Express	AIRBILL OR SHIPPING LOG NO.: 5027454250
CLIENT NAME: Sloss Ind. / C&M	
PROJECT COMMENTS: TF0320.014	

ITEM	Y	N	COMMENTS
CUSTODY SEAL INTACT	✓		
SHIPPING CONTAINER INTACT	✓		
ICE PRESENT	✓		
TEMPERATURE OF TEMP. CHECK CONTAINER	✓		7.5°C
NUMBER OF CONTAINERS MATCH	✓		
TYPE OF CONTAINERS MATCH	✓		
PROPER CONTAINERS (For Analyses Requested)	✓		
PROPER PRESERVATIONS (For Analyses Requested)	✓		
pH PRESERVATIONS VERIFIED	(NA)	✓	unpreserved + vials
DO VIALS CONTAIN AIR	✓		TB - 2 of 3 contain bubbles <5mm
SAMPLES WITHIN HOLDING TIMES	✓		
CONTAINERS BROKEN		✓	
MULTI-PHASE SAMPLE (Indicate number of phases, and probable type and/or identification.)		✓	
SEDIMENT PRESENT IN WATER SAMPLES		✓	Note Sample ID's and approximate volume below.

OTHER COMMENTS: _____

In the event of sample rejection or other problems, has the client been contacted? Yes ___ No ___

CONTACT NAME: _____ DATE: _____ TIME: _____

AGREED UPON COURSE OF ACTION: _____

COMPLETED BY: [signature] APPROVED BY: AUM 6-12-96

(Approval required for sample rejection and special problems.)

COCCT.PJT Rev 04/96

GERAGHTY & MILLER, INC.
Environmental Services
a heidemij company

Laboratory Task Order No. 17416

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number TF0320.014

Project Location SLOSS - BIRMINGHAM, AL

Laboratory CENTER FOR APPLIED ENG

Sampler(s)/Affiliation J. HUGHES / G&M

COC # C14777
PROJECT # 9606151
ACCOUNT # 666
DUE DATE: 6-25-96

SAMPLE BOTTLE / CONTAINER DESCRIPTION

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	EPA 8260 40ml GLASS VIAL HCl	EPA 8270 LITER AMBER GLASS	PPMETALS + Ba LITER PLASTIC HNO3	CYANIDE LITER PLASTIC NaOH	TEMP BLANK 40ml GLASS VIAL	EPA 8260 4 oz GLASS JAR	EPA 8270 8oz GLASS JAR	PPMETALS + Ba + CYANIDE 8oz GLASS JAR		TOTAL	
CO-02A-TB0007	L	6/10/96 —		3									3	96-6347
CO-02A-FB0004	L	1015		3	3	1	1						8	96-6348
CO-02A-SLED04	L	1045		3	3	1	1						8	96-6349
CO-02A-SL0001(2-4)	S	1125							1	1	1		3	96-6350
CO-02A-SL0001(16-18)	S	1405							1	1	1		3	96-6351
CO-02A-SL0002(2-4)	S	1500							1	1	1		3	96-6352
CO-02A-SL0004(2-4)	S	6/10/96 1555							1	1	1		3	96-6353
TEMP BLANK	L	—						1					1	

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 32

Relinquished by: [signature]	Organization: G&M (TAMDA)	Date 6/10/96 Time 2000	Seal Intact? Yes No N/A
Received by: [signature]	Organization: CAE	Date 6/11/96 Time 1000	
Relinquished by:	Organization:	Date / / Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / / Time	

Special Instructions/Remarks: DIRECT ANY/ALL QUESTIONS TO KATHY THALMAN AT 813 961 1921
*SOIL SAMPLES CONTAIN COAL AND/OR COKE

COMPLETED

Delivery Method: ☐ In Person ☒ Common Carrier AIRBORNE EXPRESS (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

Center For Applied Engineering, Inc.

CHAIN-OF-CUSTODY CHECKLIST

CHAIN-OF-CUSTODY NO.: C14777	LAB PROJECT NO.: 9606151
DATE: 6-11-96 TIME: 1000	NUMBER OF C-O-C FORMS: 1
DELIVERED BY: Airborne Express	AIRBILL OR SHIPPING LOG NO.: 5027454552
CLIENT NAME: Sloss Ind / C+M	
PROJECT COMMENTS: TF0320.014	

ITEM	Y	N	COMMENTS
CUSTODY SEAL INTACT	✓		
SHIPPING CONTAINER INTACT	✓		
ICE PRESENT	✓		
TEMPERATURE OF TEMP. CHECK CONTAINER	✓		8°C
NUMBER OF CONTAINERS MATCH	✓		
TYPE OF CONTAINERS MATCH	✓		
PROPER CONTAINERS (For Analyses Requested)	✓		
PROPER PRESERVATIONS (For Analyses Requested)	✓		
pH PRESERVATIONS VERIFIED	✓		
DO VIALS CONTAIN AIR	✓		TB 3 of 3 contain bubbles < 5mm
SAMPLES WITHIN HOLDING TIMES	✓		
CONTAINERS BROKEN		✓	
MULTI-PHASE SAMPLE (Indicate number of phases, and probable type and/or identification.)		✓	
SEDIMENT PRESENT IN WATER SAMPLES		✓	Note Sample ID's and approximate volume below.

OTHER COMMENTS: _____

In the event of sample rejection or other problems, has the client been contacted? Yes ___ No ___

CONTACT NAME: _____ DATE: _____ TIME: _____

AGREED UPON COURSE OF ACTION: _____

COMPLETED BY: _____ APPROVED BY: ALM 6-12-96

(Approval required for sample rejection and special problems.)

COCCL.PJI Rev 04/96

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Sloss Industries
PROJECT NUMBER: TF0320.014
SAMPLING DATE: June 11-13, 1996 VALIDATION DATE: Aug. 18, 1996
SAMPLE IDENTIFICATION: Coke Manufacturing Plant
Lab ID's 96-6493 through 96-6599
SAMPLING TEAM: J. Hughes
ANALYZING LABORATORY: Centre For Applied Engineering
ANALYSES PERFORMED: 8240/8270/ PP. Metals + Barium, Cyanide
SAMPLE MATRIX: Soil
QA REPORTING LEVEL: Geraghty + Miller Level IV

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		X		X	
2. SAMPLING TEAM INDICATED		X		X	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		X		X	
4. SAMPLE LOCATION		X		X	
5. SAMPLE DEPTH FOR SOILS		X		X	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		X		X	
7. FIELD SAMPLE PREPARATION TECHNIQUES		X		X	
8. SAMPLE TYPE (GRAB, COMPOSITE)		X		X	
9. SAMPLE CONTAINER TYPE		X		X	
10. PRESERVATION METHODS		X		X	
11. CHAIN OF CUSTODY FORM COMPLETED		X		X	
12. REQUIRED ANALYTICAL METHODS REQUESTED		X		X	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		X		X	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		X		X	
15. FIELD EQUIPMENT CALIBRATION	X			X (a)	X
16. FIELD EQUIPMENT DECONTAMINATION		X		X (a)	
17. SAMPLE SHIPPING		X		X	
18. LABORATORY TASK ORDER	X		X (b)		

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:
(a) Field equip. decontamination needs to be documented daily.
(b) No LTO available for review / No LTO referenced on the COC's.

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES

METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments: _____

QA REPORTING LEVEL: II
REQUIREMENTS
A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks					
2. Extraction Blanks					
3. MS[4/] (Batch Specific)					
4. MSD[5/] (Batch Specific)					
5. LD[6/] (Optional)					
6. MS/MSD RPD or Sample/LD RPD					
7. RWS					
8. RWSD					
9. RWS RPD					
10. Surrogate Spikes					

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks		X		X	
2. Extraction Blanks		X		X	
3. MS (Batch Specific)		X		X	
4. MSD (Batch Specific)		X		X	
5. LD (Optional)	X				X
6. MS/MSD RPD or Sample/LD RPD		X		X	
7. RWS		X		X	
8. RWSD	X				X
9. RWS RPD	X				X
10. Surrogate Spikes		X		X	

COMMENTS: _____

1/ RWS = Reagent Water Spike; 2/ RWSD = Reagent Water Spike Duplicate;
3/ RPD = Relative Percent Difference; 4/ MS = Matrix Spike;
5/ MSD = Matrix Spike Duplicate; 6/ LD = Lab Dup

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES

METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		X		X	
2. MS % RECOVERY (%R)		X		X	
3. MSD OR LAB DUPLICATE % R		X		X	
4. RWS % R		X		X	
5. RWSD % R	X				X
6. RPDS FOR MS/MSD, SAMPLE/LD, RWS/RWSD		X		X	
7. LCS[8] %R		X		X	
8. ICVS [9] %R	X				X

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)[10]

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12] %R (ICP ONLY)					
7. DCS[13] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES.
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE CONTINUED

ORGANIC ANALYSES

QA REPORTING LEVEL: III
REQUIREMENTS

A. GAS CHROMATOGRAPH OR WET CHEMISTRY	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. WATER BLANKS (VOC)					
2. EXTRACTION BLANKS					
3. MS[1/] %R SAMPLE SPECIFIC					
4. MSD[2/] %R SAMPLE SPECIFIC					
5. LD[3/] SAMPLE SPECIFIC (OPTIONAL)					
6. MS/MSD RPD[4/] OR SAMPLE/LD RPD					
7. RWS[5/]					
8. RWSD[6/]					
9. RWS/RWSD RPD					
10. SURROGATE SPIKES					

B. GAS CHROMATOGRAPH/MASS SPECTROMETER					
1. BFB OR DFTPP TUNING[7/]					
2. INITIAL CALIBRATION (IC)					
A. SPCC COMPOUNDS (RRF[8/] >0.3/0.05)					
B. CCC COMPOUNDS (RSD[9/] < 30%)					
C. OTHER COMPOUNDS (RRF > 0.05)					
3. CONTINUING CALIBRATION (CC)					
A. SPCC COMPOUNDS (RRF >0.3/0.05)					
B. CCC COMPOUNDS (MAX %D[10/] < 25%)					
C. OTHER COMPOUNDS (RRF >0.05)					
4. WATER BLANKS					
5. EXTRACTION BLANKS					
6. RWS					
7. RWSD					
8. RWS/RWSD RPD					
9. MS (SAMPLE SPECIFIC)					
10. MSD (SAMPLE SPECIFIC)					
11. SURROGATE SPIKE					

COMMENTS: _____

1/ MS = MATRIX SPIKE; 2/ MSD = MATRIX SPIKE DUPLICATE; 3/ LD = LAB DUP
4/ RPD = RELATIVE PERCENT DIFFERENCE; 5/ RWS = REAGENT WATER SPIKE;
6/ RWSD = REAGENT WATER SPIKE DUPLICATE; 7/ BFB TUNING IS FOR VOLATILES AND DFTPP TUNING IS FOR SEMI-VOLATILES (BNA EXTRACTABLES). 8/ RRF = RELATIVE RESPONSE FACTOR;
9/ RSD = RELATIVE STANDARD DEVIATION; 10/ %D = PERCENT DIFFERENCE;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY

PROJECT NAME: Gloss Industries PROJECT NUMBER: TF0320.014
QA REPORTING LEVEL: II VALIDATION DATE: Aug. 16, 1996

ALL QA REPORTING LEVELS (I,II,III)

SUMMARY OF CHECKLIST FINDINGS

	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	PERFORMANCE NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA					
2. FIELD RECORDS					
3. METHODS (GEN.INFO. SECTION ONE)					
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES					
B. ANALYSIS HOLDING TIMES					
5. DETECTION LIMITS (SECTION ONE)					
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS					
B. FIELD BLANKS					
C. TRIP BLANKS					
D. LABORATORY BLANKS					
7. FIELD REPLICATES					
8. FIELD SPLITS					
9. GEOPHYSICAL COMPARISONS					
A. CATION VS ANION					
B. TDS VS SPEC. CONDUCTANCE					
C. PH VS ALK/ACIDITY					
D. OTHER					
10. METALS QA DATA (SECTION TWO)					
11. INORGANIC WET CHEMISTRY (SEC. TWO)					
12. ORGANIC QA DATA-GC (SECTION THREE-A)					
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)					
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)					

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING

PROJECT NAME: Slag Industries PROJECT NUMBER: TF0330.014
QA REPORTING LEVEL: II VALIDATION DATE: Aug. 16, 1996

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION:

Please reference the attached Table for all qualified analytical results for the data package.

VALIDATION PERFORMED BY: Cindy Arnold

SIGNED: Cindy Arnold

DATE: Sept. 28, 1996

000393

Table 1
Summary of Qualified Analytical Results
for Sloss Industries
Coke Manufacturing Plant
Birmingham, AL

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
960612-CO-05-SL0002 (11-13)	acetone	1100 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960612-CO-05-SL0002 (11-13)	ethylbenzene	9 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960612-CO-05-SL0002 (11-13)	methylene chloride	16/ug/Kg	J	Surrogate recoveries outside the control limit criteria
960612-CO-05-SL0002 (11-13)	o-xylene	8 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960612-CO-05-SL0002 (11-13)	antimony	BDL	R	QC Batch 23215 MS recovery antimony 14 %
960612-CO-05-SL0002 (15-17)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960612-CO-05-SL0002 (15-17)	1122 Tetrachloroethane	2.1 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960612-CO-05-SL0002 (15-17)	1122 Tetrachloroethane	2.1 ug/Kg	U	QC Batch 23604 Method Blk 1,1,2,2-tetrachloroethane 5.6 ug/Kg
960612-CO-05-SL0002 (15-17)	antimony	BDL	R	QC Batch 23215 MS recovery antimony 14 %
960613-CO-05-SL0004 (1-3)	Acid 8270 BDL compds	all BDL	R	2,4,6-Tribromophenol surrogate recovery < 10%
960613-CO-05-SL0004 (1-3)	ethylbenzene	57 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960613-CO-05-SL0004 (1-3)	m & p-xylene	370 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960613-CO-05-SL0004 (1-3)	o-xylene	350 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960613-CO-05-SL0004 (1-3)	toluene	16 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960613-CO-05-SL0004 (9-11)	Base/Neutral 8270 BDL compds	all BDL	UJ	Surrogate recoveries outside the lower control limit criteria
960613-CO-05-SL0004 (9-11)	1122 Tetrachloroethane	2.1 ug/Kg	U	QC Batch 23604 Method Blk 1,1,2,2-tetrachloroethane 5.6 ug/Kg
960613-CO-05-SL0005 (1-3)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960613-CO-05-SL0005 (1-3)	benxene	75 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960613-CO-05-SL0005 (1-3)	acetone	120 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960613-CO-05-SL0005 (1-3)	ethylbenzene	430 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960613-CO-05-SL0005 (1-3)	methylene chloride	8.2 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960613-CO-05-SL0005 (1-3)	m & p-xylene	110 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960613-CO-05-SL0005 (1-3)	o-xylene	370 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960613-CO-05-SL0005 (5-7)	1122 Tetrachloroethane	2.1 ug/Kg	U	QC Batch 23604 Method Blk 1,1,2,2-tetrachloroethane 5.6 ug/Kg
960613-CO-05-SL9005	Base/Neutral 8270 BDL compds	all BDL	R	Nitrobenzene-d5 surrogate recovery < 10%
960613-CO-05-SL9005	Fluoranthene	78000 ug/Kg	J	Nitrobenzene-d5 surrogate recovery < 10%
960613-CO-05-SL9005	Naphthalene	49000 ug/Kg	J	Nitrobenzene-d5 surrogate recovery < 10%
960613-CO-05-SL9005	Phenanthrene	53000 ug/Kg	J	Nitrobenzene-d5 surrogate recovery < 10%

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Ta. I

Summary of Qualified Analytical Results
for Sloss Industries
Coke Manufacturing Plant
Birmingham, AL

G & M Sample I.D.	Analyte	Concentration Detected	Qualifier	Reasons for Qualification
960611-CO-01A-SL0005 (2-4)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960611-CO-01A-SL0005 (2-4)	Acetone	360 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960611-CO-01A-SL0005 (2-4)	Methylene chloride	10 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960611-CO-01A-SL0005 (2-4)	di-n-butylphthalate	770 ug/Kg	U	QC Batch 23602 Method Blk di-n-butylphthalate 1376 ug/Kg
960611-CO-01A-SL0005 (2-4)	antimony	BDL	R	QC Batch 23215 MS recovery antimony 14 %
960611-CO-03A-SL0001 (6-8)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960611-CO-03A-SL0001 (6-8)	1122 Tetrachloroethane	3.8 ug/Kg	UJ	Surrogate recoveries outside the control limit criteria
960611-CO-03A-SL0001 (6-8)	1122 Tetrachloroethane	3.8 ug/Kg	U	QC Batch 23604 Method Blk 1,1,2,2-tetrachloroethane 5.6 ug/Kg
960611-CO-03A-SL0001 (6-8)	acetone	380 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960611-CO-03A-SL0001 (6-8)	Methylene chloride	10 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960611-CO-03A-SL0001 (6-8)	antimony	BDL	R	QC Batch 23215 MS recovery antimony 14 %
960611-CO-03A-SL0002 (8-10)	1122 Tetrachloroethane	2.5 ug/Kg	U	QC Batch 23604 Method Blk 1,1,2,2-tetrachloroethane 5.6 ug/Kg
960611-CO-03A-SL0002 (8-10)	antimony	BDL	R	QC Batch 23215 MS recovery antimony 14 %
QUENCH A TOWER SOIL *Continued*				
960611-CO-03A-SL9002	1122 Tetrachloroethane	3.1 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960611-CO-03A-SL9002	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960611-CO-03A-SL9002	1122 Tetrachloroethane	3.1 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960611-CO-03A-SL9002	1122 Tetrachloroethane	3.1 ug/Kg	U	QC Batch 23604 Method Blk 1,1,2,2-tetrachloroethane 5.6 ug/Kg
960611-CO-03A-SL9002	acetone	790 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960611-CO-03A-SL9002	Methylene chloride	13 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960611-CO-03A-SL9002	antimony	BDL	R	QC Batch 23215 MS recovery antimony 14 %
SWMU-5				
960611-CO-05-SL0001 (1-3)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960611-CO-05-SL0001 (1-3)	1122 Tetrachloroethane	4.0 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960611-CO-05-SL0001 (1-3)	1122 Tetrachloroethane	4.0 ug/Kg	U	QC Batch 23604 Method Blk 1,1,2,2-tetrachloroethane 5.6 ug/Kg
960611-CO-05-SL0001 (1-3)	acetone	3200 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960611-CO-05-SL0001 (1-3)	antimony	8 mg/Kg	J	QC Batch 23215 MS recovery antimony 14 %
960611-CO-05-SL0001 (9-11)	1122 Tetrachloroethane	3.0 ug/Kg	U	QC Batch 23604 Method Blk 1,1,2,2-tetrachloroethane 5.6 ug/Kg
960611-CO-05-SL0001 (9-11)	antimony	BDL	R	QC Batch 23215 MS recovery antimony 14 %
960611-CO-05-SL0001 (11-13)	antimony	BDL	R	QC Batch 23215 MS recovery antimony 14 %
SWMU-5 Continued				
960612-CO-05-SL0002 (1-3)	1122 Tetrachloroethane	2.2 ug/Kg	U	QC Batch 23604 Method Blk 1,1,2,2-tetrachloroethane 5.6 ug/Kg
960612-CO-05-SL0002 (1-3)	antimony	BDL	R	QC Batch 23215 MS recovery antimony 14 %
960612-CO-05-SL0002 (11-13)	8260 BDL compounds	all BDL	UJ	Surrogate recoveries outside the control limit criteria
960612-CO-05-SL0002 (11-13)	1122 Tetrachloroethane	3.4 ug/Kg	J	Surrogate recoveries outside the control limit criteria
960612-CO-05-SL0002 (11-13)	1122 Tetrachloroethane	3.4 ug/Kg	U	QC Batch 23604 Method Blk 1,1,2,2-tetrachloroethane 5.6 ug/Kg

Center For Applied Engineering, Inc.
SM Environmental Testing Services

CASE NARRATIVE

Lab sample ID.	G&M sample ID.
96-6493	960611-CO-01A-TB0008
96-6494	960611-CO-01A-SL0005 (2-4)
96-6495	960611-CO-03A-SL0001 (6-8)
96-6496	960611-CO-03A-SL0002 (8-10)
96-6497	960611-CO-03A-SL9002
96-6498	960611-CO-05-SL0001 (1-3)
96-6499	960611-CO-05-SL0001 (9-11)
96-6500	960611-CO-05-SL0001 (11-13)
96-6501	960612-CO-05-SL0002 (1-3)
96-6502	960612-CO-05-SL0002 (11-13)
96-6503	960612-CO-05-SL0002 (15-17)
96-6504	960612-CO-05-TB0009
96-6505	960612-CO-05-FB0005
96-6506	960612-CO-05-SLEB05
96-6586	960613-CO-01B-TB0011
96-6587	960613-CO-05-SL0004 (7-9)
96-6588	960613-CO-05-SL0004 (9-11)
96-6589	960613-CO-05-SL0005 (1-3)
96-6590	960613-CO-05-SL0004 (1-3)
96-6591	960613-CO-05-SL0005 (5-7)
96-6592	960613-CO-01B-SL0004 (8-10)
96-6593	960613-CO-01B-SL0004 (4-6)
96-6594	960613-CO-01B-SL0004 (12-14)
96-6595	960613-CO-05-SL9005
96-6596	960613-CO-01B-SL9004 (10-12)
96-6597	960613-CO-01B-TB0010
96-6598	960613-CO-01B-FB0006
96-6599	960613-CO-01B-SLEB06

Volatiles

Recoveries of target compounds in Matrix Spike (MS) and Matrix Spike Duplicates (MSD) for several compounds were variable due to matrix effects from the high levels of nontarget hydrocarbon compounds. The project recovery limits were relatively narrow for samples with this type of background hydrocarbon contamination. Several of the MS/MSD recoveries were within the laboratory's historical limits, but outside the project limits. Several compound's recoveries were consistently higher than the project upper limit which were near or below 100%. Most of the compounds exhibiting out of control spike recoveries were not detected in the samples. Recoveries may have also been high due to the hydrocarbon contamination causing carry over of other compounds from the

calibration check samples, QCRS and MS/MSD samples. Carry over was noted in two blanks for bromomethane and 1,1,2,2-tetrachloroethane. Additional blanks and bakeout time were needed to run the samples. Similar effects were noted for the QCRS or Laboratory Control Sample (Blank Spikes), but the effect was on fewer compounds. Surrogate recoveries were generally good except for the samples noted in the attached reports.

2-chloroethylvinyl ether was not recovered in the quality control blanks (Trip, Field and Equipment Blanks) due to hydrolysis from the acid preservation of the samples.

Semivolatiles

MS/MSD recoveries are in control limits for the first set of MS/MSD except pyrene that was above the high limit. The second set associated with this group of samples showed low recovery for 1,4-dichlorobenzene and 1,2,4-trichlorobenzene due to matrix effects. The third set exhibited low recovery for pentachlorophenol, pyrene and acenaphthene. The low recovery for pyrene and acenaphthene was due to the high background concentrations in the sample.

The QCRS/LCS/Blank Soil Spike samples have low recovery on a single compound, but different compound in each sample in the first two of the three QCRS. Also, the samples were prepared using the MS/MSD spiking solution by mistake rather than the spiking solution with all target compounds. Initial and continuing calibration was in control for the target compounds.

Method blanks contained di-n-butyl-phthalate for the firs prep batch. The source is not known, but the next two Method Blanks did not show contamination. The sample results are reported as quantified, blank subtraction was not performed.

Metals

Antimony MS/MSD recovery was below the acceptance limits, probably due to matrix effects. All LCS and blank data is in control.

Cyanide

No problems were encountered with the performance of the cyanide analysis.

Respectfully Submitted

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960611-CO-01A-TB0008, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006493

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
RGANIC							
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/20	23421
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/20	23421
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/20	23421
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/20	23421
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/20	23421
2-Hexanone	BDL	UG/L	50	1	8260	06/20	23421
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/20	23421
Acetone	BDL	UG/L	50	1	8260	06/20	23421
Acrolein	BDL	UG/L	100	1	8260	06/20	23421
Acrylonitrile	BDL	UG/L	100	1	8260	06/20	23421
Benzene	9	UG/L	5	1	8260	06/20	23421
Bromodichloromethane	BDL	UG/L	5	1	8260	06/20	23421
Bromoform	BDL	UG/L	5	1	8260	06/20	23421
Bromomethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/20	23421
Chloroform	BDL	UG/L	5	1	8260	06/20	23421
Chlorobenzene	BDL	UG/L	5	1	8260	06/20	23421
Chloroethane	BDL	UG/L	10	1	8260	06/20	23421
Chloromethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon disulfide	BDL	UG/L	5	1	8260	06/20	23421

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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Chris Given
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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/20	23421
Dibromochloromethane	BDL	UG/L	10	1	8260	06/20	23421
Dibromomethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/20	23421
Ethylbenzene	BDL	UG/L	5	1	8260	06/20	23421
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/20	23421
Iodomethane	BDL	UG/L	5	1	8260	06/20	23421
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/20	23421
Methylene chloride	BDL	UG/L	5	1	8260	06/20	23421
o-Xylene	BDL	UG/L	.5	1	8260	06/20	23421
Styrene	BDL	UG/L	5	1	8260	06/20	23421
Trichloroethene	BDL	UG/L	.5	1	8260	06/20	23421
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/20	23421
Tetrachloroethene	BDL	UG/L	5	1	8260	06/20	23421
Toluene	2.1	UG/L	.5	1	8260	06/20	23421
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Vinyl acetate	BDL	UG/L	10	1	8260	06/20	23421
Vinyl chloride	BDL	UG/L	10	1	8260	06/20	23421

0006493

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ab ID: 96 0006494

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.1	1	6010	06/24	23215
Arsenic, Total	12	MG/KG-DW	1.1	10	6020	06/24	23201
Barium, Total	18	MG/KG-DW	1.1	1	6010	06/24	23215
Beryllium, Total	1.8	MG/KG-DW	0.56	1	6010	06/24	23215
Cadmium, Total	10	MG/KG-DW	6	1	6010	06/24	23215
Chromium, Total	BDL	MG/KG-DW	5.6	1	6010	06/24	23215
Copper, Total	54	MG/KG-DW	2.8	1	6010	06/24	23215
Mercury, Total	1.1	MG/KG-DW	0.049	1	7471	06/24	23205
Nickel, Total	6	MG/KG-DW	4	1	6010	06/24	23215
Lead, Total	41	MG/KG-DW	5.6	1	6010	06/24	23215
Antimony, Total	BDL	MG/KG-DW	5.6	1	6010	06/24	23215
Selenium, Total	BDL	MG/KG-DW	56	1	6010	06/24	23215
Thallium, Total	BDL	MG/KG-DW	56	1	6010	06/24	23215
Zinc, Total	130	MG/KG-DW	2.2	1	6010	06/24	23215
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	370	1	8270	07/12	23602
1,2-Dichlorobenzene	BDL	UG/KG-DW	370	1	8270	07/12	23602
1,3-Dichlorobenzene	BDL	UG/KG-DW	370	1	8270	07/12	23602
1,4-Dichlorobenzene	BDL	UG/KG-DW	370	1	8270	07/12	23602
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	1900	1	8270	07/12	23602
2,4,5-Trichlorophenol	BDL	UG/KG-DW	1900	1	8270	07/12	23602
2,4,6-Trichlorophenol	BDL	UG/KG-DW	370	1	8270	07/12	23602
2,4-Dinitrophenol	BDL	UG/KG-DW	1900	1	8270	07/12	23602
2,4-Dinitrotoluene	BDL	UG/KG-DW	370	1	8270	07/12	23602
2,6-Dichlorophenol	BDL	UG/KG-DW	370	1	8270	07/12	23602
2,6-Dinitrotoluene	BDL	UG/KG-DW	370	1	8270	07/12	23602
2-Chloronaphthalene	BDL	UG/KG-DW	370	1	8270	07/12	23602

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

.stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
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ANALYSIS REPORT

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	370	1	8270	07/12	23602
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	370	1	8270	07/12	23602
2-Methylnaphthalene	BDL	UG/KG-DW	370	1	8270	07/12	23602
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	370	1	8270	07/12	23602
2-Nitroaniline	BDL	UG/KG-DW	1900	1	8270	07/12	23602
2-Nitrophenol	BDL	UG/KG-DW	370	1	8270	07/12	23602
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	370	1	8270	07/12	23602
3-Nitroaniline	BDL	UG/KG-DW	1900	1	8270	07/12	23602
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	1900	1	8270	07/12	23602
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	370	1	8270	07/12	23602
4-Chloro-3-methylphenol	BDL	UG/KG-DW	370	1	8270	07/12	23602
4-Chloroaniline	BDL	UG/KG-DW	730	1	8270	07/12	23602
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	370	1	8270	07/12	23602
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	370	1	8270	07/12	23602
4-Nitroaniline	BDL	UG/KG-DW	1900	1	8270	07/12	23602
4-Nitrophenol	BDL	UG/KG-DW	1900	1	8270	07/12	23602
Acenaphthene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Acenaphthylene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Anthracene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Benzyl alcohol	BDL	UG/KG-DW	370	1	8270	07/12	23602
Benzo(a)anthracene	1400	UG/KG-DW	370	1	8270	07/12	23602
Benzo(a)pyrene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Benzo (b) fluoranthene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Benzo (k) fluoranthene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Benzo (g,h,i) perylene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Chrysene	1200	UG/KG-DW	370	1	8270	07/12	23602
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	370	1	8270	07/12	23602
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	370	1	8270	07/12	23602
Dibenzofuran	BDL	UG/KG-DW	370	1	8270	07/12	23602
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	370	1	8270	07/12	23602

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	770	UG/KG-DW	370	1	8270	07/12	23602
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	1900	1	8270	07/12	23602
2,4-Dichlorophenol	BDL	UG/KG-DW	370	1	8270	07/12	23602
Diethylphthalate	BDL	UG/KG-DW	370	1	8270	07/12	23602
2,4-Dimethylphenol	BDL	UG/KG-DW	370	1	8270	07/12	23602
Dimethylphthalate	BDL	UG/KG-DW	370	1	8270	07/12	23602
n-Nitrosodimethylamine	BDL	UG/KG-DW	370	1	8270	07/12	23602
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	370	1	8270	07/12	23602
Di-n-octylphthalate	BDL	UG/KG-DW	370	1	8270	07/12	23602
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	370	1	8270	07/12	23602
Fluorene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Fluoranthene	2200	UG/KG-DW	370	1	8270	07/12	23602
Hexachlorocyclopentadiene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Hexachlorobutadiene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Hexachlorobenzene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Hexachloroethane	BDL	UG/KG-DW	370	1	8270	07/12	23602
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Isophorone	BDL	UG/KG-DW	370	1	8270	07/12	23602
Naphthalene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Nitrobenzene	BDL	UG/KG-DW	370	1	8270	07/12	23602
Pentachlorophenol	BDL	UG/KG-DW	1900	1	8270	07/12	23602
Phenol	BDL	UG/KG-DW	370	1	8270	07/12	23602
Phenanthrene	1100	UG/KG-DW	370	1	8270	07/12	23602
Pyrene	4300	UG/KG-DW	370	1	8270	07/12	23602
Pyridine	BDL	UG/KG-DW	370	1	8270	07/12	23602
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.56	1	8260	06/21	23604
1,1,2-Trichloroethane	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
1,1-Dichloroethane	BDL	UG/KG-DW	5.6	1	8260	06/21	23604

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1,1-Dichloroethene	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
1,2,3-Trichloropropane	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
1,2-Dichloroethane	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
1,2-Dichloropropane	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	11	1	8260	06/21	23604
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	56	1	8260	06/21	23604
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	11	1	8260	06/21	23604
2-Hexanone	BDL	UG/KG-DW	56	1	8260	06/21	23604
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	56	1	8260	06/21	23604
Acetone	360	UG/KG-DW	56	1	8260	06/21	23604
Acrolein	BDL	UG/KG-DW	220	1	8260	06/21	23604
Acrylonitrile	BDL	UG/KG-DW	110	1	8260	06/21	23604
Benzene	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Bromodichloromethane	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Bromoform	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Bromomethane	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Carbon tetrachloride	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Chloroform	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Chlorobenzene	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Chloroethane	BDL	UG/KG-DW	11	1	8260	06/21	23604
Chloromethane	BDL	UG/KG-DW	11	1	8260	06/21	23604
Carbon disulfide	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
cis-1,3-Dichloropropene	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Dichlorodifluoromethane	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Dibromochloromethane	BDL	UG/KG-DW	11	1	8260	06/21	23604
Dibromomethane	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Ethylbenzene	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Ethyl methacrylate	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Iodomethane	BDL	UG/KG-DW	5.6	1	8260	06/21	23604

te 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
arles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

tention: Kathy Thalman
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st Proj: TF0320.014
mple Desc: 960611-CO-01A-SL0005 (2-4), Birmingham, AL

b ID: 96 0006494

Date of Report: 07/26/96
C-of-C Number: C14822
Date Collected: 06/11/96 08:30
Collected By: CST
Date Received: 06/13/96 10:20
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Methylene chloride	10	UG/KG-DW	6	1	8260	06/21	23604
o-Xylene	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Styrene	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Trichloroethene	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Trichlorofluoromethane	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Tetrachloroethene	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Toluene	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
trans-1,2-Dichloroethene	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
trans-1,3-Dichloropropene	BDL	UG/KG-DW	5.6	1	8260	06/21	23604
Vinyl acetate	BDL	UG/KG-DW	11	1	8260	06/21	23604
Vinyl chloride	BDL	UG/KG-DW	11	1	8260	06/21	23604
T CHEM							
CHEMICAL							
Cyanide, Total	2	MG/KG-DW	1	1	9012	06/21	23189
PHYSICAL							
Percent Solids	90	%	.01	1	160.3	06/14	23040

MMENTS

01 Results for semivolatile organics by method 8270 should be considered estimates due to matrix spike recovery outside the project limits. Surrogate recoveries were in control

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		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Di-n-butylphthalate was detected in the method blank. Sample results are reported without blank correction.

03 Results for antimony should be considered estimates due to low recovery in matrix spike and matrix spike duplicate.

04 Results for ethylmethacrylate, vinyl acetate, 1,2,3-trichloropropane, 1,4-dichloro-2-butene 2-hexanone should be considered estimates due to spike recoveries outside control limits

05 Result for iodomethane should be considered an estimate due to high QCRS recovery.

06 Method blank associated with this sample contained 1,1,2,2-tetrachloroethane and bromomethane. Sample results are reported without blank subtraction.

07 All volatile organic results for method 8260 should be considered estimates due to poor recovery of two of the three surrogates in this sample due to matrix interference.

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.2	1	6010	06/24	23215
Arsenic, Total	10	MG/KG-DW	1	10	6020	06/24	23201
Barium, Total	45	MG/KG-DW	1.2	1	6010	06/24	23215
Beryllium, Total	1.8	MG/KG-DW	0.62	1	6010	06/24	23215
Cadmium, Total	BDL	MG/KG-DW	6.2	1	6010	06/24	23215
Chromium, Total	36	MG/KG-DW	6.2	1	6010	06/24	23215
Copper, Total	9.8	MG/KG-DW	3.1	1	6010	06/24	23215
Mercury, Total	0.99	MG/KG-DW	0.055	1	7471	06/24	23205
Nickel, Total	10	MG/KG-DW	5	1	6010	06/24	23215
Lead, Total	24	MG/KG-DW	6.2	1	6010	06/24	23215
Antimony, Total	BDL	MG/KG-DW	6.2	1	6010	06/24	23215
Selenium, Total	BDL	MG/KG-DW	62	1	6010	06/24	23215
Thallium, Total	BDL	MG/KG-DW	62	1	6010	06/24	23215
Zinc, Total	52	MG/KG-DW	2.5	1	6010	06/24	23215
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23603
1,2-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23603
1,3-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23603
1,4-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23603
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23603
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23603
2,4,6-Trichlorophenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
2,4-Dinitrophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23603
2,4-Dinitrotoluene	BDL	UG/KG-DW	410	1	8270	07/12	23603
2,6-Dichlorophenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
2,6-Dinitrotoluene	BDL	UG/KG-DW	410	1	8270	07/12	23603
2-Chloronaphthalene	BDL	UG/KG-DW	410	1	8270	07/12	23603

0006495

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	410	1	8270	07/12	23603
2-Methylnaphthalene	BDL	UG/KG-DW	410	1	8270	07/12	23603
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	410	1	8270	07/12	23603
2-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/12	23603
2-Nitrophenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	410	1	8270	07/12	23603
3-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/12	23603
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2100	1	8270	07/12	23603
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	410	1	8270	07/12	23603
4-Chloro-3-methylphenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
4-Chloroaniline	BDL	UG/KG-DW	820	1	8270	07/12	23603
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	410	1	8270	07/12	23603
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	410	1	8270	07/12	23603
4-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/12	23603
4-Nitrophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23603
Acenaphthene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Acenaphthylene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Anthracene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Benzyl alcohol	BDL	UG/KG-DW	410	1	8270	07/12	23603
Benzo(a)anthracene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Benzo(a)pyrene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Benzo (b) fluoranthene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Benzo (k) fluoranthene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Benzo (g,h,i) perylene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Chrysene	BDL	UG/KG-DW	410	1	8270	07/12	23603
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	410	1	8270	07/12	23603
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	410	1	8270	07/12	23603
Dibenzofuran	BDL	UG/KG-DW	410	1	8270	07/12	23603
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	410	1	8270	07/12	23603

000407

ote 'BDL' = Below Detection Limit
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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	410	1	8270	07/12	23603
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2100	1	8270	07/12	23603
2,4-Dichlorophenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
Diethylphthalate	BDL	UG/KG-DW	410	1	8270	07/12	23603
2,4-Dimethylphenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
Dimethylphthalate	BDL	UG/KG-DW	410	1	8270	07/12	23603
n-Nitrosodimethylamine	BDL	UG/KG-DW	410	1	8270	07/12	23603
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	410	1	8270	07/12	23603
Di-n-octylphthalate	BDL	UG/KG-DW	410	1	8270	07/12	23603
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	410	1	8270	07/12	23603
Fluorene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Fluoranthene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Hexachlorocyclopentadiene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Hexachlorobutadiene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Hexachlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Hexachloroethane	BDL	UG/KG-DW	410	1	8270	07/12	23603
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Isophorone	BDL	UG/KG-DW	410	1	8270	07/12	23603
Naphthalene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Nitrobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Pentachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23603
Phenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
Phenanthrene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Pyrene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Pyridine	BDL	UG/KG-DW	410	1	8270	07/12	23603
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
1,1,2,2-Tetrachloroethane	3.8	UG/KG-DW	0.62	1	8260	06/21	23604
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
1,1-Dichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23604

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
1,2-Dichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
1,2-Dichloropropane	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	12	1	8260	06/21	23604
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	62	1	8260	06/21	23604
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	12	1	8260	06/21	23604
2-Hexanone	BDL	UG/KG-DW	62	1	8260	06/21	23604
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	62	1	8260	06/21	23604
Acetone	380	UG/KG-DW	62	1	8260	06/21	23604
Acrolein	BDL	UG/KG-DW	250	1	8260	06/21	23604
Acrylonitrile	BDL	UG/KG-DW	120	1	8260	06/21	23604
Benzene	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Bromodichloromethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Bromoform	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Bromomethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Carbon tetrachloride	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Chloroform	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Chlorobenzene	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Chloroethane	BDL	UG/KG-DW	12	1	8260	06/21	23604
Chloromethane	BDL	UG/KG-DW	12	1	8260	06/21	23604
Carbon disulfide	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Dichlorodifluoromethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Dibromochloromethane	BDL	UG/KG-DW	12	1	8260	06/21	23604
Dibromomethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Ethylbenzene	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Ethyl methacrylate	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Iodomethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23604

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Unit followed by 'DW' signifies Results in Dry Weight.

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Methylene chloride	10	UG/KG-DW	6	1	8260	06/21	23604
o-Xylene	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Styrene	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Trichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Trichlorofluoromethane	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Tetrachloroethene	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Toluene	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.2	1	8260	06/21	23604
Vinyl acetate	BDL	UG/KG-DW	12	1	8260	06/21	23604
Vinyl chloride	BDL	UG/KG-DW	12	1	8260	06/21	23604
T CHEM							
CHEMICAL							
Cyanide, Total	18	MG/KG-DW	1.2	1	9012	06/21	23193
PHYSICAL							
Percent Solids	80	%	.01	1	160.3	06/14	23040

OMMENTS

01 Results for antimony should be considered estimates due to low recovery in matrix spike and matrix spike duplicate.

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ıb ID: 96 0006495

		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Results for semivolatile organics by method 8270 should be considered estimates due to low recovery of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene.

03 QCRS recovery for acenaphthene was low also. Surrogate recoveries were within control limits as was calibration.

04 Results for ethylmethacrylate, vinyl acetate, 1,2,3-trichloropropane, 1,4-dichloro-2-butene 2-hexanone should be considered estimates due to spike recoveries outside control limits

05 Result for iodomethane should be considered an estimate due to high QCRS recovery.

06 Method blank associated with this sample contained 1,1,2,2-tetrachloroethane and bromomethane. Sample results are reported without blank subtraction.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

ust Proj: TF0320.014
ample Desc: 960611-CO-03A-SL0002 (8-10) MS/MSD, Birmingham, AL

ab ID: 96 0006496

Date of Report: 07/26/96
C-of-C Number: C14822
Date Collected: 06/11/96 11:25
Collected By: CST
Date Received: 06/13/96 10:20
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.3	1	6010	06/24	23215
Arsenic, Total	9	MG/KG-DW	1	10	6020	06/24	23201
Barium, Total	65	MG/KG-DW	1.3	1	6010	06/24	23215
Beryllium, Total	3.4	MG/KG-DW	0.65	1	6010	06/24	23215
Cadmium, Total	BDL	MG/KG-DW	6.5	1	6010	06/24	23215
Chromium, Total	23	MG/KG-DW	6.5	1	6010	06/24	23215
Copper, Total	12	MG/KG-DW	3.2	1	6010	06/24	23215
Mercury, Total	BDL	MG/KG-DW	0.19	3.33	7471	06/24	23205
Nickel, Total	21	MG/KG-DW	5.2	1	6010	06/24	23215
Lead, Total	26	MG/KG-DW	6.5	1	6010	06/24	23215
Antimony, Total	BDL	MG/KG-DW	6.5	1	6010	06/24	23215
Selenium, Total	BDL	MG/KG-DW	65	1	6010	06/24	23215
Thallium, Total	BDL	MG/KG-DW	65	1	6010	06/24	23215
Zinc, Total	44	MG/KG-DW	2.6	1	6010	06/24	23215
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/12	23603
1,2-Dichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/12	23603
1,3-Dichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/12	23603
1,4-Dichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/12	23603
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2200	1	8270	07/12	23603
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2200	1	8270	07/12	23603
2,4,6-Trichlorophenol	BDL	UG/KG-DW	430	1	8270	07/12	23603
2,4-Dinitrophenol	BDL	UG/KG-DW	2200	1	8270	07/12	23603
2,4-Dinitrotoluene	BDL	UG/KG-DW	430	1	8270	07/12	23603
2,6-Dichlorophenol	BDL	UG/KG-DW	430	1	8270	07/12	23603
2,6-Dinitrotoluene	BDL	UG/KG-DW	430	1	8270	07/12	23603
2-Chloronaphthalene	BDL	UG/KG-DW	430	1	8270	07/12	23603

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

:tention: Kathy Thalman
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Tampa FL 33618

ıst Proj: TF0320.014
ımple Desc: 960611-CO-03A-SL0002 (8-10) MS/MSD, Birmingham, AL

ıb ID: 96 0006496

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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	430	1	8270	07/12	23603
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	430	1	8270	07/12	23603
2-Methylnaphthalene	BDL	UG/KG-DW	430	1	8270	07/12	23603
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	430	1	8270	07/12	23603
2-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/12	23603
2-Nitrophenol	BDL	UG/KG-DW	430	1	8270	07/12	23603
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	430	1	8270	07/12	23603
3-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/12	23603
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2200	1	8270	07/12	23603
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	430	1	8270	07/12	23603
4-Chloro-3-methylphenol	BDL	UG/KG-DW	430	1	8270	07/12	23603
4-Chloroaniline	BDL	UG/KG-DW	860	1	8270	07/12	23603
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	430	1	8270	07/12	23603
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	430	1	8270	07/12	23603
4-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/12	23603
4-Nitrophenol	BDL	UG/KG-DW	2200	1	8270	07/12	23603
Acenaphthene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Acenaphthylene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Anthracene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Benzyl alcohol	BDL	UG/KG-DW	430	1	8270	07/12	23603
Benzo(a)anthracene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Benzo(a)pyrene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Benzo (b) fluoranthene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Benzo (k) fluoranthene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Benzo (g,h,i) perylene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Chrysene	BDL	UG/KG-DW	430	1	8270	07/12	23603
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	430	1	8270	07/12	23603
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	430	1	8270	07/12	23603
Dibenzofuran	BDL	UG/KG-DW	430	1	8270	07/12	23603
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	430	1	8270	07/12	23603

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

Attention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
Cust Proj: TF0320.014
Sample Desc: 960611-CO-03A-SL0002 (8-10) MS/MSD, Birmingham, AL

Lab ID: 96 0006496

Date of Report: 07/26/96
C-of-C Number: C14822
Date Collected: 06/11/96 11:25
Collected By: CST
Date Received: 06/13/96 10:20
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	430	1	8270	07/12	23603
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2200	1	8270	07/12	23603
2,4-Dichlorophenol	BDL	UG/KG-DW	430	1	8270	07/12	23603
Diethylphthalate	BDL	UG/KG-DW	430	1	8270	07/12	23603
2,4-Dimethylphenol	BDL	UG/KG-DW	430	1	8270	07/12	23603
Dimethylphthalate	BDL	UG/KG-DW	430	1	8270	07/12	23603
n-Nitrosodimethylamine	BDL	UG/KG-DW	430	1	8270	07/12	23603
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	430	1	8270	07/12	23603
Di-n-octylphthalate	BDL	UG/KG-DW	430	1	8270	07/12	23603
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	430	1	8270	07/12	23603
Fluorene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Fluoranthene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Hexachlorocyclopentadiene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Hexachlorobutadiene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Hexachlorobenzene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Hexachloroethane	BDL	UG/KG-DW	430	1	8270	07/12	23603
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Isophorone	BDL	UG/KG-DW	430	1	8270	07/12	23603
Naphthalene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Nitrobenzene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Pentachlorophenol	BDL	UG/KG-DW	2200	1	8270	07/12	23603
Phenol	BDL	UG/KG-DW	430	1	8270	07/12	23603
Phenanthrene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Pyrene	BDL	UG/KG-DW	430	1	8270	07/12	23603
Pyridine	BDL	UG/KG-DW	430	1	8270	07/12	23603
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,1,2,2-Tetrachloroethane	2.5	UG/KG-DW	0.65	1	8260	06/21	23604
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,1-Dichloroethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604

Note 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

000414

Distribution of Report:
Charles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

:tention: Kathy Thalman
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14497 North Dale Mabry
Suite 115
Tampa FL 33618

ıst Proj: TF0320.014
ımple Desc: 960611-CO-03A-SL0002 (8-10) MS/MSD, Birmingham, AL

ıb ID: 96 0006496

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,2-Dichloroethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,2-Dichloropropane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	13	1	8260	06/21	23604
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	65	1	8260	06/21	23604
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	13	1	8260	06/21	23604
2-Hexanone	BDL	UG/KG-DW	65	1	8260	06/21	23604
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	65	1	8260	06/21	23604
Acetone	690	UG/KG-DW	65	1	8260	06/21	23604
Acrolein	BDL	UG/KG-DW	260	1	8260	06/21	23604
Acrylonitrile	BDL	UG/KG-DW	130	1	8260	06/21	23604
Benzene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Bromodichloromethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Bromoform	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Bromomethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Carbon tetrachloride	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Chloroform	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Chlorobenzene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Chloroethane	BDL	UG/KG-DW	13	1	8260	06/21	23604
Chloromethane	BDL	UG/KG-DW	13	1	8260	06/21	23604
Carbon disulfide	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Dichlorodifluoromethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Dibromochloromethane	BDL	UG/KG-DW	13	1	8260	06/21	23604
Dibromomethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Ethylbenzene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Ethyl methacrylate	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Iodomethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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ab ID: 96 0006496

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Methylene chloride	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
o-Xylene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Styrene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Trichloroethene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Trichlorofluoromethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Tetrachloroethene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Toluene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Vinyl acetate	BDL	UG/KG-DW	13	1	8260	06/21	23604
Vinyl chloride	BDL	UG/KG-DW	13	1	8260	06/21	23604
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.3	1	9012	06/21	23193
PHYSICAL							
Percent Solids	77	%	.01	1	160.3	06/14	23040

OMMENTS

01 Results for antimony should be considered estimates due to low recovery in matrix spike and matrix spike duplicate.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Results for semivolatile organics by method 8270 should be considered estimates due to low recovery of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene.

03 QCRS recovery for acenaphthene was low also. Surrogate recoveries were within control limits as was calibration.

04 Results for ethylmethacrylate, vinyl acetate, 1,2,3-trichloropropane, 1,4-dichloro-2-butene 2-hexanone should be considered estimates due to spike recoveries outside control limits

05 Result for iodomethane should be considered an estimate due to high QCRS recovery.

06 Method blank associated with this sample contained 1,1,2,2-tetrachloroethane and bromomethane. Sample results are reported without blank subtraction.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

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Environmental Testing Services

ANALYSIS REPORT

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14497 North Dale Mabry
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Tampa FL 33618
st Proj: TF0320.014
mple Desc: 960611-CO-03A-SL9002, Birmingham, AL

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FL-DEP CompQAP: 900359G

b ID: 96 0006497

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
TALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.3	1	6010	06/24	23215
Arsenic, Total	96	MG/KG-DW	1.3	10	6020	06/24	23201
Barium, Total	42	MG/KG-DW	1.3	1	6010	06/24	23215
Beryllium, Total	1	MG/KG-DW	0.6	1	6010	06/24	23215
Cadmium, Total	BDL	MG/KG-DW	6.5	1	6010	06/24	23215
Chromium, Total	79	MG/KG-DW	6.5	1	6010	06/24	23215
Copper, Total	6.9	MG/KG-DW	3.2	1	6010	06/24	23215
Mercury, Total	0.99	MG/KG-DW	0.057	1	7471	06/24	23205
Nickel, Total	9	MG/KG-DW	5	1	6010	06/24	23215
Lead, Total	17	MG/KG-DW	6.5	1	6010	06/24	23215
Antimony, Total	BDL	MG/KG-DW	6.5	1	6010	06/24	23215
Selenium, Total	BDL	MG/KG-DW	65	1	6010	06/24	23215
Thallium, Total	BDL	MG/KG-DW	65	1	6010	06/24	23215
Zinc, Total	32	MG/KG-DW	2.6	1	6010	06/24	23215
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23603
1,2-Dichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23603
1,3-Dichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23603
1,4-Dichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23603
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2,4,6-Trichlorophenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
2,4-Dinitrophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2,4-Dinitrotoluene	BDL	UG/KG-DW	430	1	8270	07/16	23603
2,6-Dichlorophenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
2,6-Dinitrotoluene	BDL	UG/KG-DW	430	1	8270	07/16	23603
2-Chloronaphthalene	BDL	UG/KG-DW	430	1	8270	07/16	23603

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
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ab ID: 96 0006497

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	430	1	8270	07/16	23603
2-Methylnaphthalene	BDL	UG/KG-DW	430	1	8270	07/16	23603
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	430	1	8270	07/16	23603
2-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2-Nitrophenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	430	1	8270	07/16	23603
3-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/16	23603
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	430	1	8270	07/16	23603
4-Chloro-3-methylphenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
4-Chloroaniline	BDL	UG/KG-DW	860	1	8270	07/16	23603
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	430	1	8270	07/16	23603
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	430	1	8270	07/16	23603
4-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/16	23603
4-Nitrophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
Acenaphthene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Acenaphthylene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Anthracene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Benzyl alcohol	BDL	UG/KG-DW	430	1	8270	07/16	23603
Benzo(a)anthracene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Benzo(a)pyrene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Benzo (b) fluoranthene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Benzo (k) fluoranthene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Benzo (g,h,i) perylene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Chrysene	BDL	UG/KG-DW	430	1	8270	07/16	23603
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	430	1	8270	07/16	23603
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	430	1	8270	07/16	23603
Dibenzofuran	BDL	UG/KG-DW	430	1	8270	07/16	23603
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	430	1	8270	07/16	23603

0006497

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
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Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ust Proj: TF0320.014
ample Desc: 960611-CO-03A-SL9002, Birmingham, AL

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FL-DEP CompQAP: 900359G

ab ID: 96 0006497

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	430	1	8270	07/16	23603
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2,4-Dichlorophenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
Diethylphthalate	BDL	UG/KG-DW	430	1	8270	07/16	23603
2,4-Dimethylphenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
Dimethylphthalate	BDL	UG/KG-DW	430	1	8270	07/16	23603
n-Nitrosodimethylamine	BDL	UG/KG-DW	430	1	8270	07/16	23603
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	430	1	8270	07/16	23603
Di-n-octylphthalate	BDL	UG/KG-DW	430	1	8270	07/16	23603
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	430	1	8270	07/16	23603
Fluorene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Fluoranthene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Hexachlorocyclopentadiene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Hexachlorobutadiene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Hexachlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Hexachloroethane	BDL	UG/KG-DW	430	1	8270	07/16	23603
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Isophorone	BDL	UG/KG-DW	430	1	8270	07/16	23603
Naphthalene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Nitrobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Pentachlorophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
Phenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
Phenanthrene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Pyrene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Pyridine	BDL	UG/KG-DW	430	1	8270	07/16	23603
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,1,2,2-Tetrachloroethane	3.1	UG/KG-DW	0.65	1	8260	06/21	23604
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,1-Dichloroethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,2-Dichloroethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,2-Dichloropropane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	13	1	8260	06/21	23604
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	65	1	8260	06/21	23604
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	13	1	8260	06/21	23604
2-Hexanone	BDL	UG/KG-DW	65	1	8260	06/21	23604
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	65	1	8260	06/21	23604
Acetone	790	UG/KG-DW	65	1	8260	06/21	23604
Acrolein	BDL	UG/KG-DW	260	1	8260	06/21	23604
Acrylonitrile	BDL	UG/KG-DW	130	1	8260	06/21	23604
Benzene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Bromodichloromethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Bromoform	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Bromomethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Carbon tetrachloride	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Chloroform	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Chlorobenzene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Chloroethane	BDL	UG/KG-DW	13	1	8260	06/21	23604
Chloromethane	BDL	UG/KG-DW	13	1	8260	06/21	23604
Carbon disulfide	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Dichlorodifluoromethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Dibromochloromethane	BDL	UG/KG-DW	13	1	8260	06/21	23604
Dibromomethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Ethylbenzene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Ethyl methacrylate	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Iodomethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Methylene chloride	13	UG/KG-DW	6.5	1	8260	06/21	23604
o-Xylene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Styrene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Trichloroethene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Trichlorofluoromethane	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Tetrachloroethene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Toluene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.5	1	8260	06/21	23604
Vinyl acetate	BDL	UG/KG-DW	13	1	8260	06/21	23604
Vinyl chloride	BDL	UG/KG-DW	13	1	8260	06/21	23604
ET CHEM							
CHEMICAL							
Cyanide, Total	2	MG/KG-DW	1	1	9012	06/21	23193
PHYSICAL							
Percent Solids	77	%	.01	1	160.3	06/14	23040

OMMENTS

01 Results for antimony should be considered estimates due to low recovery in matrix spike and matrix spike duplicate.

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		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Results for semivolatile organics by method 8270 should be considered estimates due to low recovery of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene.

03 QCRS recovery for acenaphthene was low also. Surrogate recoveries were within control limits as was calibration.

04 Results for ethylmethacrylate, vinyl acetate, 1,2,3-trichloropropane, 1,4-dichloro-2-butene 2-hexanone should be considered estimates due to spike recoveries outside control limits

05 Result for iodomethane should be considered an estimate due to high QCRS recovery.

06 Method blank associated with this sample contained 1,1,2,2-tetrachloroethane and bromomethane. Sample results are reported without blank subtraction.

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.2	1	6010	06/24	23215
Arsenic, Total	20	MG/KG-DW	1.2	10	6020	06/24	23201
Barium, Total	230	MG/KG-DW	1.2	1	6010	06/24	23215
Beryllium, Total	3.4	MG/KG-DW	0.60	1	6010	06/24	23215
Cadmium, Total	7	MG/KG-DW	6	1	6010	06/24	23215
Chromium, Total	25	MG/KG-DW	6.0	1	6010	06/24	23215
Copper, Total	70	MG/KG-DW	3.0	1	6010	06/24	23215
Mercury, Total	0.58	MG/KG-DW	0.053	1	7471	06/24	23205
Nickel, Total	10	MG/KG-DW	5	1	6010	06/24	23215
Lead, Total	220	MG/KG-DW	6.0	1	6010	06/24	23215
Antimony, Total	8	MG/KG-DW	6	1	6010	06/24	23215
Selenium, Total	BDL	MG/KG-DW	60	1	6010	06/24	23215
Thallium, Total	BDL	MG/KG-DW	60	1	6010	06/24	23215
Zinc, Total	1300	MG/KG-DW	120	50	6010	06/24	23215
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
1,2-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
1,3-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
1,4-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2000	1	8270	07/16	23603
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2000	1	8270	07/16	23603
2,4,6-Trichlorophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,4-Dinitrophenol	BDL	UG/KG-DW	2000	1	8270	07/16	23603
2,4-Dinitrotoluene	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,6-Dichlorophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,6-Dinitrotoluene	BDL	UG/KG-DW	400	1	8270	07/16	23603
2-Chloronaphthalene	BDL	UG/KG-DW	400	1	8270	07/16	23603

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
2-Methylnaphthalene	BDL	UG/KG-DW	400	1	8270	07/16	23603
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	400	1	8270	07/16	23603
2-Nitroaniline	BDL	UG/KG-DW	2000	1	8270	07/16	23603
2-Nitrophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	400	1	8270	07/16	23603
3-Nitroaniline	BDL	UG/KG-DW	2000	1	8270	07/16	23603
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2000	1	8270	07/16	23603
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	400	1	8270	07/16	23603
4-Chloro-3-methylphenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
4-Chloroaniline	BDL	UG/KG-DW	800	1	8270	07/16	23603
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	400	1	8270	07/16	23603
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	400	1	8270	07/16	23603
4-Nitroaniline	BDL	UG/KG-DW	2000	1	8270	07/16	23603
4-Nitrophenol	BDL	UG/KG-DW	2000	1	8270	07/16	23603
Acenaphthene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Acenaphthylene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Anthracene	1200	UG/KG-DW	400	1	8270	07/16	23603
Benzyl alcohol	BDL	UG/KG-DW	400	1	8270	07/16	23603
Benzo(a)anthracene	4800	UG/KG-DW	400	1	8270	07/16	23603
Benzo(a)pyrene	5100	UG/KG-DW	400	1	8270	07/16	23603
Benzo (b) fluoranthene	5100	UG/KG-DW	400	1	8270	07/16	23603
Benzo (k) fluoranthene	1100	UG/KG-DW	400	1	8270	07/16	23603
Benzo (g,h,i) perylene	660	UG/KG-DW	400	1	8270	07/16	23603
Chrysene	4000	UG/KG-DW	400	1	8270	07/16	23603
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	400	1	8270	07/16	23603
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	400	1	8270	07/16	23603
Dibenzofuran	BDL	UG/KG-DW	400	1	8270	07/16	23603
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	400	1	8270	07/16	23603

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2000	1	8270	07/16	23603
2,4-Dichlorophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
Diethylphthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,4-Dimethylphenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
Dimethylphthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
n-Nitrosodimethylamine	BDL	UG/KG-DW	400	1	8270	07/16	23603
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	400	1	8270	07/16	23603
Di-n-octylphthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	400	1	8270	07/16	23603
Fluorene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Fluoranthene	32000	UG/KG-DW	4000	10	8270	07/19	23603
Hexachlorocyclopentadiene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Hexachlorobutadiene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Hexachlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Hexachloroethane	BDL	UG/KG-DW	400	1	8270	07/16	23603
Indeno(1,2,3-cd)pyrene	1700	UG/KG-DW	400	1	8270	07/16	23603
Isophorone	BDL	UG/KG-DW	400	1	8270	07/16	23603
Naphthalene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Nitrobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Pentachlorophenol	BDL	UG/KG-DW	2000	1	8270	07/16	23603
Phenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
Phenanthrene	5400	UG/KG-DW	400	1	8270	07/16	23603
Pyrene	22000	UG/KG-DW	4000	10	8270	07/19	23603
Pyridine	BDL	UG/KG-DW	400	1	8270	07/16	23603
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
1,1,2,2-Tetrachloroethane	4.0	UG/KG-DW	0.60	1	8260	06/21	23604
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
1,1-Dichloroethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23604

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ust Proj: TF0320.014
ample Desc: 960611-CO-05-SL0001 (1-3), Birmingham, AL

ab ID: 96 0006498

Date of Report: 07/26/96
C-of-C Number: C14822
Date Collected: 06/11/96 16:35
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Date Received: 06/13/96 10:20
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
1,2-Dichloroethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
1,2-Dichloropropane	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	12	1	8260	06/21	23604
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	60	1	8260	06/21	23604
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	12	1	8260	06/21	23604
2-Hexanone	BDL	UG/KG-DW	60	1	8260	06/21	23604
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	60	1	8260	06/21	23604
Acetone	3200	UG/KG-DW	60	1	8260	06/21	23604
Acrolein	BDL	UG/KG-DW	240	1	8260	06/21	23604
Acrylonitrile	BDL	UG/KG-DW	120	1	8260	06/21	23604
Benzene	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Bromodichloromethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Bromoform	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Bromomethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Carbon tetrachloride	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Chloroform	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Chlorobenzene	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Chloroethane	BDL	UG/KG-DW	12	1	8260	06/21	23604
Chloromethane	BDL	UG/KG-DW	12	1	8260	06/21	23604
Carbon disulfide	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Dichlorodifluoromethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Dibromochloromethane	BDL	UG/KG-DW	12	1	8260	06/21	23604
Dibromomethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Ethylbenzene	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Ethyl methacrylate	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Iodomethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23604

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
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Center For Applied Engineering, Inc.
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ANALYSIS REPORT

ttention: Kathy Thalman
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ab ID: 96 0006498

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Methylene chloride	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
o-Xylene	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Styrene	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Trichloroethene	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Trichlorofluoromethane	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Tetrachloroethene	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Toluene	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.0	1	8260	06/21	23604
Vinyl acetate	BDL	UG/KG-DW	12	1	8260	06/21	23604
Vinyl chloride	BDL	UG/KG-DW	12	1	8260	06/21	23604
ET CHEM							
CHEMICAL							
Cyanide, Total	38	MG/KG-DW	1.2	1	9012	06/21	23193
PHYSICAL							
Percent Solids	83	%	.01	1	160.3	06/14	23040

COMMENTS

01 Results for antimony should be considered estimates due to low recovery in matrix spike and matrix spike duplicate.

Note 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

Distribution of Report:
Charles A. Jones - Sloss Industries

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		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
02	Results for semivolatile organics by method 8270 should be considered estimates due to low recovery of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene.							
03	QCRS recovery for acenaphthene was low also. Surrogate recoveries were within control limits as was calibration.							
04	Results for ethylmethacrylate, vinyl acetate, 1,2,3-trichloropropane, 1,4-dichloro-2-butene 2-hexanone should be considered estimates due to spike recoveries outside control limits							
05	Result for iodomethane should be considered an estimate due to high QCRS recovery.							
06	Method blank associated with this sample contained 1,1,2,2-tetrachloroethane and bromomethane. Sample results are reported without blank subtraction.							

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istribution of Report:
harles A. Jones - Sloss Industries

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
TALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.2	1	6010	06/24	23215
Arsenic, Total	8	MG/KG-DW	1	10	6020	06/24	23201
Barium, Total	200	MG/KG-DW	1.2	1	6010	06/24	23215
Beryllium, Total	3.4	MG/KG-DW	0.62	1	6010	06/24	23215
Cadmium, Total	BDL	MG/KG-DW	6.2	1	6010	06/24	23215
Chromium, Total	34	MG/KG-DW	6.2	1	6010	06/24	23215
Copper, Total	18	MG/KG-DW	3.1	1	6010	06/24	23215
Mercury, Total	0.72	MG/KG-DW	0.055	1	7471	06/24	23205
Nickel, Total	25	MG/KG-DW	5.0	1	6010	06/24	23215
Lead, Total	30	MG/KG-DW	6.2	1	6010	06/24	23215
Antimony, Total	BDL	MG/KG-DW	6.2	1	6010	06/24	23215
Selenium, Total	BDL	MG/KG-DW	62	1	6010	06/24	23215
Thallium, Total	BDL	MG/KG-DW	62	1	6010	06/24	23215
Zinc, Total	58	MG/KG-DW	2.5	1	6010	06/24	23215
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23603
1,2-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23603
1,3-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23603
1,4-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23603
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23603
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23603
2,4,6-Trichlorophenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
2,4-Dinitrophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23603
2,4-Dinitrotoluene	BDL	UG/KG-DW	410	1	8270	07/12	23603
2,6-Dichlorophenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
2,6-Dinitrotoluene	BDL	UG/KG-DW	410	1	8270	07/12	23603
2-Chloronaphthalene	BDL	UG/KG-DW	410	1	8270	07/12	23603

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istribution of Report:
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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	410	1	8270	07/12	23603
2-Methylnaphthalene	BDL	UG/KG-DW	410	1	8270	07/12	23603
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	410	1	8270	07/12	23603
2-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/12	23603
2-Nitrophenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	410	1	8270	07/12	23603
3-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/12	23603
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2100	1	8270	07/12	23603
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	410	1	8270	07/12	23603
4-Chloro-3-methylphenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
4-Chloroaniline	BDL	UG/KG-DW	820	1	8270	07/12	23603
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	410	1	8270	07/12	23603
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	410	1	8270	07/12	23603
4-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/12	23603
4-Nitrophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23603
Acenaphthene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Acenaphthylene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Anthracene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Benzyl alcohol	BDL	UG/KG-DW	410	1	8270	07/12	23603
Benzo(a)anthracene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Benzo(a)pyrene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Benzo (b) fluoranthene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Benzo (k) fluoranthene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Benzo (g,h,i) perylene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Chrysene	BDL	UG/KG-DW	410	1	8270	07/12	23603
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	410	1	8270	07/12	23603
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	410	1	8270	07/12	23603
Dibenzofuran	BDL	UG/KG-DW	410	1	8270	07/12	23603
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	410	1	8270	07/12	23603

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Laboratory Director

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	410	1	8270	07/12	23603
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2100	1	8270	07/12	23603
2,4-Dichlorophenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
Diethylphthalate	BDL	UG/KG-DW	410	1	8270	07/12	23603
2,4-Dimethylphenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
Dimethylphthalate	BDL	UG/KG-DW	410	1	8270	07/12	23603
n-Nitrosodimethylamine	BDL	UG/KG-DW	410	1	8270	07/12	23603
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	410	1	8270	07/12	23603
Di-n-octylphthalate	BDL	UG/KG-DW	410	1	8270	07/12	23603
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	410	1	8270	07/12	23603
Fluorene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Fluoranthene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Hexachlorocyclopentadiene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Hexachlorobutadiene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Hexachlorobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Hexachloroethane	BDL	UG/KG-DW	410	1	8270	07/12	23603
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Isophorone	BDL	UG/KG-DW	410	1	8270	07/12	23603
Naphthalene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Nitrobenzene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Pentachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/12	23603
Phenol	BDL	UG/KG-DW	410	1	8270	07/12	23603
Phenanthrene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Pyrene	BDL	UG/KG-DW	410	1	8270	07/12	23603
Pyridine	BDL	UG/KG-DW	410	1	8270	07/12	23603
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,1,2,2-Tetrachloroethane	3.0	UG/KG-DW	0.62	1	8260	06/25	23704
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,1-Dichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,2-Dichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,2-Dichloropropane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	12	1	8260	06/25	23704
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	62	1	8260	06/25	23704
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	12	1	8260	06/25	23704
2-Hexanone	BDL	UG/KG-DW	62	1	8260	06/25	23704
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	62	1	8260	06/25	23704
Acetone	86	UG/KG-DW	62	1	8260	06/25	23704
Acrolein	BDL	UG/KG-DW	250	1	8260	06/25	23704
Acrylonitrile	BDL	UG/KG-DW	120	1	8260	06/25	23704
Benzene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Bromodichloromethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Bromoform	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Bromomethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Carbon tetrachloride	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Chloroform	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Chlorobenzene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Chloroethane	BDL	UG/KG-DW	12	1	8260	06/25	23704
Chloromethane	BDL	UG/KG-DW	12	1	8260	06/25	23704
Carbon disulfide	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Dichlorodifluoromethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Dibromochloromethane	BDL	UG/KG-DW	12	1	8260	06/25	23704
Dibromomethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Ethylbenzene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Ethyl methacrylate	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Iodomethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704

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FL-DEP CompQAP: 900359G

b ID: 96 0006499

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Methylene chloride	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
o-Xylene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Styrene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Trichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Trichlorofluoromethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Tetrachloroethene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Toluene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Vinyl acetate	BDL	UG/KG-DW	12	1	8260	06/25	23704
Vinyl chloride	BDL	UG/KG-DW	12	1	8260	06/25	23704
T CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.2	1	9012	06/25	23243
PHYSICAL							
Percent Solids	80	%	.01	1	160.3	06/14	23040

OMMENTS

01 Results for antimony should be considered estimates due to low recovery in matrix spike and matrix spike duplicate.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

tention: Kathy Thalman
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st Proj: TF0320.014
mple Desc: 960611-CO-05-SL0001 (9-11), Birmingham, AL

b ID: 96 0006499

Date of Report: 07/26/96
C-of-C Number: C14822
Date Collected: 06/12/96 11:45
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FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Results for semivolatile organics by method 8270 should be considered estimates due to low recovery of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene.

03 QCRS recovery for acenaphthene was low also. Surrogate recoveries were within control limits as was calibration.

04 Results for 1,4-dichloro-2-butene, 2-hexanone acetone, 1,2,3-trichloropropane and iodomethane should be considered estimates due to QCRS recovery outside of project limit

05 Method blank associated with this sample contained 1,1,2,2-trichloroethane. Sample results are reported without blank subtraction.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
harles A. Jones - Sloss Industries

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Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
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ANALYSIS REPORT

ttention: Kathy Thalman
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ust Proj: TF0320.014
ample Desc: 960611-CO-05-SL0001 (11-13), Birmingham, AL

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FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006500

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.2	1	6010	06/24	23215
Arsenic, Total	7	MG/KG-DW	1	10	6020	06/24	23201
Barium, Total	150	MG/KG-DW	1.2	1	6010	06/24	23215
Beryllium, Total	2.6	MG/KG-DW	0.61	1	6010	06/24	23215
Cadmium, Total	BDL	MG/KG-DW	6.1	1	6010	06/24	23215
Chromium, Total	39	MG/KG-DW	6.1	1	6010	06/24	23215
Copper, Total	13	MG/KG-DW	3.0	1	6010	06/24	23215
Mercury, Total	0.34	MG/KG-DW	0.054	1	7471	06/24	23205
Nickel, Total	18	MG/KG-DW	4.9	1	6010	06/24	23215
Lead, Total	150	MG/KG-DW	6.1	1	6010	06/24	23215
Antimony, Total	BDL	MG/KG-DW	6.1	1	6010	06/24	23215
Selenium, Total	BDL	MG/KG-DW	61	1	6010	06/24	23215
Thallium, Total	BDL	MG/KG-DW	61	1	6010	06/24	23215
Zinc, Total	55	MG/KG-DW	2.4	1	6010	06/24	23215
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/15	23603
1,2-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/15	23603
1,3-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/15	23603
1,4-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/15	23603
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/15	23603
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2100	1	8270	07/15	23603
2,4,6-Trichlorophenol	BDL	UG/KG-DW	400	1	8270	07/15	23603
2,4-Dinitrophenol	BDL	UG/KG-DW	2100	1	8270	07/15	23603
2,4-Dinitrotoluene	BDL	UG/KG-DW	400	1	8270	07/15	23603
2,6-Dichlorophenol	BDL	UG/KG-DW	400	1	8270	07/15	23603
2,6-Dinitrotoluene	BDL	UG/KG-DW	400	1	8270	07/15	23603
2-Chloronaphthalene	BDL	UG/KG-DW	400	1	8270	07/15	23603

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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ıst Proj: TF0320.014
ımple Desc: 960611-CO-05-SL0001 (11-13), Birmingham, AL

ıb ID: 96 0006500

Date of Report: 07/26/96
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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	400	1	8270	07/15	23603
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	400	1	8270	07/15	23603
2-Methylnaphthalene	BDL	UG/KG-DW	400	1	8270	07/15	23603
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	400	1	8270	07/15	23603
2-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/15	23603
2-Nitrophenol	BDL	UG/KG-DW	400	1	8270	07/15	23603
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	400	1	8270	07/15	23603
3-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/15	23603
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2100	1	8270	07/15	23603
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	400	1	8270	07/15	23603
4-Chloro-3-methylphenol	BDL	UG/KG-DW	400	1	8270	07/15	23603
4-Chloroaniline	BDL	UG/KG-DW	800	1	8270	07/15	23603
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	400	1	8270	07/15	23603
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	400	1	8270	07/15	23603
4-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/15	23603
4-Nitrophenol	BDL	UG/KG-DW	2100	1	8270	07/15	23603
Acenaphthene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Acenaphthylene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Anthracene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Benzyl alcohol	BDL	UG/KG-DW	400	1	8270	07/15	23603
Benzo(a)anthracene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Benzo(a)pyrene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Benzo (b) fluoranthene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Benzo (k) fluoranthene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Benzo (g,h,i) perylene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Chrysene	BDL	UG/KG-DW	400	1	8270	07/15	23603
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	400	1	8270	07/15	23603
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	400	1	8270	07/15	23603
Dibenzofuran	BDL	UG/KG-DW	400	1	8270	07/15	23603
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	400	1	8270	07/15	23603

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
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Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

tention: Kathy Thalman
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ast Proj: TF0320.014
mple Desc: 960611-CO-05-SL0001 (11-13), Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14822
Date Collected: 06/12/96 11:55
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FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006500

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	400	1	8270	07/15	23603
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2100	1	8270	07/15	23603
2,4-Dichlorophenol	BDL	UG/KG-DW	400	1	8270	07/15	23603
Diethylphthalate	BDL	UG/KG-DW	400	1	8270	07/15	23603
2,4-Dimethylphenol	BDL	UG/KG-DW	400	1	8270	07/15	23603
Dimethylphthalate	BDL	UG/KG-DW	400	1	8270	07/15	23603
n-Nitrosodimethylamine	BDL	UG/KG-DW	400	1	8270	07/15	23603
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	400	1	8270	07/15	23603
Di-n-octylphthalate	BDL	UG/KG-DW	400	1	8270	07/15	23603
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	400	1	8270	07/15	23603
Fluorene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Fluoranthene	630	UG/KG-DW	400	1	8270	07/15	23603
Hexachlorocyclopentadiene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Hexachlorobutadiene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Hexachlorobenzene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Hexachloroethane	BDL	UG/KG-DW	400	1	8270	07/15	23603
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Isophorone	BDL	UG/KG-DW	400	1	8270	07/15	23603
Naphthalene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Nitrobenzene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Pentachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/15	23603
Phenol	BDL	UG/KG-DW	400	1	8270	07/15	23603
Phenanthrene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Pyrene	BDL	UG/KG-DW	400	1	8270	07/15	23603
Pyridine	BDL	UG/KG-DW	400	1	8270	07/15	23603
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,1,2,2-Tetrachloroethane	3.2	UG/KG-DW	0.61	1	8260	06/25	23704
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,1-Dichloroethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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ıst Proj: TF0320.014
ample Desc: 960611-CO-05-SL0001 (11-13), Birmingham, AL

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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,2-Dichloroethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,2-Dichloropropane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	12	1	8260	06/25	23704
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	61	1	8260	06/25	23704
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	12	1	8260	06/25	23704
2-Hexanone	BDL	UG/KG-DW	61	1	8260	06/25	23704
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	61	1	8260	06/25	23704
Acetone	BDL	UG/KG-DW	61	1	8260	06/25	23704
Acrolein	BDL	UG/KG-DW	240	1	8260	06/25	23704
Acrylonitrile	BDL	UG/KG-DW	120	1	8260	06/25	23704
Benzene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Bromodichloromethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Bromoform	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Bromomethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Carbon tetrachloride	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Chloroform	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Chlorobenzene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Chloroethane	BDL	UG/KG-DW	12	1	8260	06/25	23704
Chloromethane	BDL	UG/KG-DW	12	1	8260	06/25	23704
Carbon disulfide	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Dichlorodifluoromethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Dibromochloromethane	BDL	UG/KG-DW	12	1	8260	06/25	23704
Dibromomethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Ethylbenzene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Ethyl methacrylate	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Iodomethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704

000439

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ust Proj: TF0320.014
ample Desc: 960611-CO-05-SL0001 (11-13), Birmingham, AL

ab ID: 96 0006500

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FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Methylene chloride	6	UG/KG-DW	6	1	8260	06/25	23704
o-Xylene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Styrene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Trichloroethene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Trichlorofluoromethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Tetrachloroethene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Toluene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Vinyl acetate	BDL	UG/KG-DW	12	1	8260	06/25	23704
Vinyl chloride	BDL	UG/KG-DW	12	1	8260	06/25	23704
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.2	1	9012	06/25	23243
PHYSICAL							
Percent Solids	82	%	.01	1	160.3	06/14	23040

0004740

OMMENTS

01 Results for antimony should be considered estimates due to low recovery in matrix spike and matrix spike duplicate.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

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FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006500

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Results for semivolatile organics by method 8270 should be considered estimates due to low recovery of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene.

03 QCRS recovery for acenaphthene was low also. Surrogate recoveries were within control limits as was calibration.

04 Results for 1,4-dichloro-2-butene, 2-hexanone acetone, 1,2,3-trichloropropane and iodomethane should be considered estimates due to QCRS recovery outside of project limit

05 Method blank associated with this sample contained 1,1,2,2-trichloroethane. Sample results are reported without blank subtraction.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

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ıst Proj: TF0320.014
ımple Desc: 960612-CO-05-SL0002 (1-3), Birmingham, AL

Date of Report: 07/26/96
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Date Received: 06/13/96 10:20
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

.b ID: 96 0006501

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
TALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.2	1	6010	06/24	23215
Arsenic, Total	7	MG/KG-DW	1	10	6020	06/24	23201
Barium, Total	120	MG/KG-DW	1.2	1	6010	06/24	23215
Beryllium, Total	2.6	MG/KG-DW	0.61	1	6010	06/24	23215
Cadmium, Total	BDL	MG/KG-DW	6.1	1	6010	06/24	23215
Chromium, Total	49	MG/KG-DW	6.1	1	6010	06/24	23215
Copper, Total	7.0	MG/KG-DW	3.0	1	6010	06/24	23215
Mercury, Total	0.52	MG/KG-DW	0.054	1	7471	06/24	23205
Nickel, Total	8	MG/KG-DW	5	1	6010	06/24	23215
Lead, Total	39	MG/KG-DW	6.1	1	6010	06/24	23215
Antimony, Total	BDL	MG/KG-DW	6.1	1	6010	06/24	23215
Selenium, Total	BDL	MG/KG-DW	61	1	6010	06/24	23215
Thallium, Total	BDL	MG/KG-DW	61	1	6010	06/24	23215
Zinc, Total	44	MG/KG-DW	2.4	1	6010	06/24	23215
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
1,2-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
1,3-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
1,4-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/16	23603
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2100	1	8270	07/16	23603
2,4,6-Trichlorophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,4-Dinitrophenol	BDL	UG/KG-DW	2100	1	8270	07/16	23603
2,4-Dinitrotoluene	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,6-Dichlorophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,6-Dinitrotoluene	BDL	UG/KG-DW	400	1	8270	07/16	23603
2-Chloronaphthalene	BDL	UG/KG-DW	400	1	8270	07/16	23603

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

.stribution of Report:
ıarles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

:tention: Kathy Thalman
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14497 North Dale Mabry
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ıst Proj: TF0320.014
ımple Desc: 960612-CO-05-SL0002 (1-3), Birmingham, AL

ıb ID: 96 0006501

Date of Report: 07/26/96
C-of-C Number: C14822
Date Collected: 06/12/96 09:40
Collected By: CST
Date Received: 06/13/96 10:20
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
2-Methylnaphthalene	2400	UG/KG-DW	400	1	8270	07/16	23603
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	400	1	8270	07/16	23603
2-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/16	23603
2-Nitrophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	400	1	8270	07/16	23603
3-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/16	23603
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2100	1	8270	07/16	23603
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	400	1	8270	07/16	23603
4-Chloro-3-methylphenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
4-Chloroaniline	BDL	UG/KG-DW	800	1	8270	07/16	23603
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	400	1	8270	07/16	23603
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	400	1	8270	07/16	23603
4-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/16	23603
4-Nitrophenol	BDL	UG/KG-DW	2100	1	8270	07/16	23603
Acenaphthene	4500	UG/KG-DW	400	1	8270	07/16	23603
Acenaphthylene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Anthracene	6700	UG/KG-DW	400	1	8270	07/16	23603
Benzyl alcohol	BDL	UG/KG-DW	400	1	8270	07/16	23603
Benzo(a)anthracene	7100	UG/KG-DW	400	1	8270	07/16	23603
Benzo(a)pyrene	5200	UG/KG-DW	400	1	8270	07/16	23603
Benzo (b) fluoranthene	5200	UG/KG-DW	400	1	8270	07/16	23603
Benzo (k) fluoranthene	1100	UG/KG-DW	400	1	8270	07/16	23603
Benzo (g,h,i) perylene	3200	UG/KG-DW	400	1	8270	07/16	23603
Chrysene	5600	UG/KG-DW	400	1	8270	07/16	23603
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	400	1	8270	07/16	23603
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	400	1	8270	07/16	23603
Dibenzofuran	4900	UG/KG-DW	400	1	8270	07/16	23603
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	400	1	8270	07/16	23603

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Unit followed by 'DW' signifies Results in Dry Weight.

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ab ID: 96 0006501

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2100	1	8270	07/16	23603
2,4-Dichlorophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
Diethylphthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,4-Dimethylphenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
Dimethylphthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
n-Nitrosodimethylamine	BDL	UG/KG-DW	400	1	8270	07/16	23603
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	400	1	8270	07/16	23603
Di-n-octylphthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	400	1	8270	07/16	23603
Fluorene	7700	UG/KG-DW	400	1	8270	07/16	23603
Fluoranthene	29000	UG/KG-DW	20000	50	8270	07/20	23603
Hexachlorocyclopentadiene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Hexachlorobutadiene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Hexachlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Hexachloroethane	BDL	UG/KG-DW	400	1	8270	07/16	23603
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Isophorone	BDL	UG/KG-DW	400	1	8270	07/16	23603
Naphthalene	BDL	UG/KG-DW	20000	50	8270	07/20	23603
Nitrobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Pentachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/16	23603
Phenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
Phenanthrene	27000	UG/KG-DW	20000	50	8270	07/20	23603
Pyrene	29000	UG/KG-DW	20000	50	8270	07/20	23603
Pyridine	BDL	UG/KG-DW	400	1	8270	07/16	23603
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,1,2,2-Tetrachloroethane	2.2	UG/KG-DW	0.61	1	8260	06/25	23704
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,1-Dichloroethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704

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1,1-Dichloroethene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,2-Dichloroethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,2-Dichloropropane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	12	1	8260	06/25	23704
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	61	1	8260	06/25	23704
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	12	1	8260	06/25	23704
2-Hexanone	BDL	UG/KG-DW	61	1	8260	06/25	23704
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	61	1	8260	06/25	23704
Acetone	BDL	UG/KG-DW	61	1	8260	06/25	23704
Acrolein	BDL	UG/KG-DW	240	1	8260	06/25	23704
Acrylonitrile	BDL	UG/KG-DW	120	1	8260	06/25	23704
Benzene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Bromodichloromethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Bromoform	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Bromomethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Carbon tetrachloride	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Chloroform	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Chlorobenzene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Chloroethane	BDL	UG/KG-DW	12	1	8260	06/25	23704
Chloromethane	BDL	UG/KG-DW	12	1	8260	06/25	23704
Carbon disulfide	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Dichlorodifluoromethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Dibromochloromethane	BDL	UG/KG-DW	12	1	8260	06/25	23704
Dibromomethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Ethylbenzene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Ethyl methacrylate	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Iodomethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704

000445

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ab ID: 96 0006501

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Methylene chloride	13	UG/KG-DW	6.1	1	8260	06/25	23704
o-Xylene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Styrene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Trichloroethene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Trichlorofluoromethane	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Tetrachloroethene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Toluene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.1	1	8260	06/25	23704
Vinyl acetate	BDL	UG/KG-DW	12	1	8260	06/25	23704
Vinyl chloride	BDL	UG/KG-DW	12	1	8260	06/25	23704
T CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.2	1	9012	06/25	23243
PHYSICAL							
Percent Solids	82	%	.01	1	160.3	06/14	23040

0004

OMMENTS

01 Results for antimony should be considered estimates due to low recovery in matrix spike and matrix spike duplicate.

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		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Results for semivolatile organics by method 8270 should be considered estimates due to low recovery of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene.

03 QCRS recovery for acenaphthene was low also. Surrogate recoveries were within control limits as was calibration.

04 Results for 1,4-dichloro-2-butene, 2-hexanone acetone, 1,2,3-trichloropropane and iodomethane should be considered estimates due to QCRS recovery outside of project limit

05 Method blank associated with this sample contained 1,1,2,2-trichloroethane. Sample results are reported without blank subtraction.

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.2	1	6010	06/24	23215
Arsenic, Total	8	MG/KG-DW	1	10	6020	06/24	23201
Barium, Total	120	MG/KG-DW	1.2	1	6010	06/24	23215
Beryllium, Total	1	MG/KG-DW	0.6	1	6010	06/24	23215
Cadmium, Total	BDL	MG/KG-DW	6.2	1	6010	06/24	23215
Chromium, Total	8	MG/KG-DW	6	1	6010	06/24	23215
Copper, Total	BDL	MG/KG-DW	3.1	1	6010	06/24	23215
Mercury, Total	0.10	MG/KG-DW	0.055	1	7471	06/24	23205
Nickel, Total	8	MG/KG-DW	5	1	6010	06/24	23215
Lead, Total	25	MG/KG-DW	6.2	1	6010	06/24	23215
Antimony, Total	BDL	MG/KG-DW	6.2	1	6010	06/24	23215
Selenium, Total	BDL	MG/KG-DW	62	1	6010	06/24	23215
Thallium, Total	BDL	MG/KG-DW	62	1	6010	06/24	23215
Zinc, Total	24	MG/KG-DW	2.5	1	6010	06/24	23215
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/16	23603
1,2-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/16	23603
1,3-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/16	23603
1,4-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/16	23603
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/16	23603
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2100	1	8270	07/16	23603
2,4,6-Trichlorophenol	BDL	UG/KG-DW	410	1	8270	07/16	23603
2,4-Dinitrophenol	BDL	UG/KG-DW	2100	1	8270	07/16	23603
2,4-Dinitrotoluene	BDL	UG/KG-DW	410	1	8270	07/16	23603
2,6-Dichlorophenol	BDL	UG/KG-DW	410	1	8270	07/16	23603
2,6-Dinitrotoluene	BDL	UG/KG-DW	410	1	8270	07/16	23603
2-Chloronaphthalene	BDL	UG/KG-DW	410	1	8270	07/16	23603

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	410	1	8270	07/16	23603
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	410	1	8270	07/16	23603
2-Methylnaphthalene	4800	UG/KG-DW	410	1	8270	07/16	23603
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	410	1	8270	07/16	23603
2-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/16	23603
2-Nitrophenol	BDL	UG/KG-DW	410	1	8270	07/16	23603
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	410	1	8270	07/16	23603
3-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/16	23603
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2100	1	8270	07/16	23603
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	410	1	8270	07/16	23603
4-Chloro-3-methylphenol	BDL	UG/KG-DW	410	1	8270	07/16	23603
4-Chloroaniline	BDL	UG/KG-DW	820	1	8270	07/16	23603
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	410	1	8270	07/16	23603
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	410	1	8270	07/16	23603
4-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/16	23603
4-Nitrophenol	BDL	UG/KG-DW	2100	1	8270	07/16	23603
Acenaphthene	440	UG/KG-DW	410	1	8270	07/16	23603
Acenaphthylene	BDL	UG/KG-DW	410	1	8270	07/16	23603
Anthracene	1200	UG/KG-DW	410	1	8270	07/16	23603
Benzyl alcohol	BDL	UG/KG-DW	410	1	8270	07/16	23603
Benzo(a)anthracene	1500	UG/KG-DW	410	1	8270	07/16	23603
Benzo(a)pyrene	1200	UG/KG-DW	410	1	8270	07/16	23603
Benzo (b) fluoranthene	1200	UG/KG-DW	410	1	8270	07/16	23603
Benzo (k) fluoranthene	BDL	UG/KG-DW	410	1	8270	07/16	23603
Benzo (g,h,i) perylene	BDL	UG/KG-DW	410	1	8270	07/16	23603
Chrysene	1000	UG/KG-DW	410	1	8270	07/16	23603
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	410	1	8270	07/16	23603
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	410	1	8270	07/16	23603
Dibenzofuran	2200	UG/KG-DW	410	1	8270	07/16	23603
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	410	1	8270	07/16	23603

000449

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ab ID: 96 0006502

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	410	1	8270	07/16	23603
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2100	1	8270	07/16	23603
2,4-Dichlorophenol	BDL	UG/KG-DW	410	1	8270	07/16	23603
Diethylphthalate	BDL	UG/KG-DW	410	1	8270	07/16	23603
2,4-Dimethylphenol	BDL	UG/KG-DW	410	1	8270	07/16	23603
Dimethylphthalate	BDL	UG/KG-DW	410	1	8270	07/16	23603
n-Nitrosodimethylamine	BDL	UG/KG-DW	410	1	8270	07/16	23603
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	410	1	8270	07/16	23603
Di-n-octylphthalate	BDL	UG/KG-DW	410	1	8270	07/16	23603
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	410	1	8270	07/16	23603
Fluorene	2600	UG/KG-DW	410	1	8270	07/16	23603
Fluoranthene	5500	UG/KG-DW	410	1	8270	07/16	23603
Hexachlorocyclopentadiene	BDL	UG/KG-DW	410	1	8270	07/16	23603
Hexachlorobutadiene	BDL	UG/KG-DW	410	1	8270	07/16	23603
Hexachlorobenzene	BDL	UG/KG-DW	410	1	8270	07/16	23603
Hexachloroethane	BDL	UG/KG-DW	410	1	8270	07/16	23603
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	410	1	8270	07/16	23603
Isophorone	BDL	UG/KG-DW	410	1	8270	07/16	23603
Naphthalene	26000	UG/KG-DW	4100	10	8270	07/19	23603
Nitrobenzene	BDL	UG/KG-DW	410	1	8270	07/16	23603
Pentachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/16	23603
Phenol	BDL	UG/KG-DW	410	1	8270	07/16	23603
Phenanthrene	9400	UG/KG-DW	4100	10	8270	07/19	23603
Pyrene	7400	UG/KG-DW	410	1	8270	07/16	23603
Pyridine	BDL	UG/KG-DW	410	1	8270	07/16	23603
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,1,2,2-Tetrachloroethane	3.4	UG/KG-DW	0.62	1	8260	06/25	23704
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,1-Dichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

0006502

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
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Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960612-CO-05-SL0002 (11-13), Birmingham, AL

ab ID: 96 0006502

Date of Report: 07/26/96
C-of-C Number: C14822
Date Collected: 06/12/96 10:30
Collected By: CST
Date Received: 06/13/96 10:20
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,2-Dichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,2-Dichloropropane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	12	1	8260	06/25	23704
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	62	1	8260	06/25	23704
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	12	1	8260	06/25	23704
2-Hexanone	BDL	UG/KG-DW	62	1	8260	06/25	23704
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	62	1	8260	06/25	23704
Acetone	110	UG/KG-DW	62	1	8260	06/25	23704
Acrolein	BDL	UG/KG-DW	250	1	8260	06/25	23704
Acrylonitrile	BDL	UG/KG-DW	120	1	8260	06/25	23704
Benzene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Bromodichloromethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Bromoform	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Bromomethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Carbon tetrachloride	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Chloroform	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Chlorobenzene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Chloroethane	BDL	UG/KG-DW	12	1	8260	06/25	23704
Chloromethane	BDL	UG/KG-DW	12	1	8260	06/25	23704
Carbon disulfide	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Dichlorodifluoromethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Dibromochloromethane	BDL	UG/KG-DW	12	1	8260	06/25	23704
Dibromomethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Ethylbenzene	9	UG/KG-DW	6	1	8260	06/25	23704
Ethyl methacrylate	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Iodomethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704

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Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Methylene chloride	16	UG/KG-DW	6.2	1	8260	06/25	23704
o-Xylene	8	UG/KG-DW	6	1	8260	06/25	23704
Styrene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Trichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Trichlorofluoromethane	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Tetrachloroethene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Toluene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.2	1	8260	06/25	23704
Vinyl acetate	BDL	UG/KG-DW	12	1	8260	06/25	23704
Vinyl chloride	BDL	UG/KG-DW	12	1	8260	06/25	23704
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.2	1	9012	06/25	23243
PHYSICAL							
Percent Solids	80	%	4	1	160.3	06/18	23105

0004522

OMMENTS

01 Results for antimony should be considered estimates due to low recovery in matrix spike and matrix spike duplicate.

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Unit followed by 'DW' signifies Results in Dry Weight.

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		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Results for semivolatile organics by method 8270 should be considered estimates due to low recovery of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene.

03 QCRS recovery for acenaphthene was low also. Surrogate recoveries were within control limits as was calibration.

04 All volatile organic results for method 8260 should be considered estimates due to poor recovery of two of the three surrogates in this sample due to matrix interference.

05 Results for 1,4-dichloro-2-butene, 2-hexanone acetone, 1,2,3-trichloropropane and iodomethane should be considered estimates due to QCRS recovery outside of project limit

06 Method blank associated with this sample contained 1,1,2,2-trichloroethane. Sample results are reported without blank subtraction.

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b ID: 96 0006503

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
TALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.3	1	6010	06/24	23215
Arsenic, Total	3	MG/KG-DW	1	10	6020	06/24	23201
Barium, Total	93	MG/KG-DW	1.3	1	6010	06/24	23215
Beryllium, Total	1.6	MG/KG-DW	0.66	1	6010	06/24	23215
Cadmium, Total	BDL	MG/KG-DW	6.6	1	6010	06/24	23215
Chromium, Total	16	MG/KG-DW	6.6	1	6010	06/24	23215
Copper, Total	6.8	MG/KG-DW	3.3	1	6010	06/24	23215
Mercury, Total	0.14	MG/KG-DW	0.058	1	7471	06/24	23205
Nickel, Total	9	MG/KG-DW	5	1	6010	06/24	23215
Lead, Total	10	MG/KG-DW	6	1	6010	06/24	23215
Antimony, Total	BDL	MG/KG-DW	6.6	1	6010	06/24	23215
Selenium, Total	BDL	MG/KG-DW	66	1	6010	06/24	23215
Thallium, Total	BDL	MG/KG-DW	66	1	6010	06/24	23215
Zinc, Total	45	MG/KG-DW	2.6	1	6010	06/24	23215
GANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23603
1,2-Dichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23603
1,3-Dichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23603
1,4-Dichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23603
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2,4,6-Trichlorophenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
2,4-Dinitrophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2,4-Dinitrotoluene	BDL	UG/KG-DW	430	1	8270	07/16	23603
2,6-Dichlorophenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
2,6-Dinitrotoluene	BDL	UG/KG-DW	430	1	8270	07/16	23603
2-Chloronaphthalene	BDL	UG/KG-DW	430	1	8270	07/16	23603

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	430	1	8270	07/16	23603
2-Methylnaphthalene	780	UG/KG-DW	430	1	8270	07/16	23603
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	430	1	8270	07/16	23603
2-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2-Nitrophenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	430	1	8270	07/16	23603
3-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/16	23603
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	430	1	8270	07/16	23603
4-Chloro-3-methylphenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
4-Chloroaniline	BDL	UG/KG-DW	870	1	8270	07/16	23603
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	430	1	8270	07/16	23603
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	430	1	8270	07/16	23603
4-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/16	23603
4-Nitrophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
Acenaphthene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Acenaphthylene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Anthracene	660	UG/KG-DW	430	1	8270	07/16	23603
Benzyl alcohol	BDL	UG/KG-DW	430	1	8270	07/16	23603
Benzo(a)anthracene	1700	UG/KG-DW	430	1	8270	07/16	23603
Benzo(a)pyrene	2400	UG/KG-DW	430	1	8270	07/16	23603
Benzo (b) fluoranthene	2200	UG/KG-DW	430	1	8270	07/16	23603
Benzo (k) fluoranthene	470	UG/KG-DW	430	1	8270	07/16	23603
Benzo (g,h,i) perylene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Chrysene	1400	UG/KG-DW	430	1	8270	07/16	23603
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	430	1	8270	07/16	23603
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	430	1	8270	07/16	23603
Dibenzofuran	550	UG/KG-DW	430	1	8270	07/16	23603
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	430	1	8270	07/16	23603

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	430	1	8270	07/16	23603
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2,4-Dichlorophenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
Diethylphthalate	BDL	UG/KG-DW	430	1	8270	07/16	23603
2,4-Dimethylphenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
Dimethylphthalate	BDL	UG/KG-DW	430	1	8270	07/16	23603
n-Nitrosodimethylamine	BDL	UG/KG-DW	430	1	8270	07/16	23603
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	430	1	8270	07/16	23603
Di-n-octylphthalate	BDL	UG/KG-DW	430	1	8270	07/16	23603
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	430	1	8270	07/16	23603
Fluorene	750	UG/KG-DW	430	1	8270	07/16	23603
Fluoranthene	5500	UG/KG-DW	430	1	8270	07/16	23603
Hexachlorocyclopentadiene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Hexachlorobutadiene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Hexachlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Hexachloroethane	BDL	UG/KG-DW	430	1	8270	07/16	23603
Indeno(1,2,3-cd)pyrene	4100	UG/KG-DW	430	1	8270	07/16	23603
Isophorone	BDL	UG/KG-DW	430	1	8270	07/16	23603
Naphthalene	2000	UG/KG-DW	430	1	8270	07/16	23603
Nitrobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23603
Pentachlorophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
Phenol	BDL	UG/KG-DW	430	1	8270	07/16	23603
Phenanthrene	3200	UG/KG-DW	430	1	8270	07/16	23603
Pyrene	4200	UG/KG-DW	870	2	8270	07/19	23603
Pyridine	BDL	UG/KG-DW	430	1	8270	07/16	23603
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
1,1,2,2-Tetrachloroethane	2.1	UG/KG-DW	0.66	1	8260	06/25	23704
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
1,1-Dichloroethane	BDL	UG/KG-DW	6.6	1	8260	06/25	23704

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
1,2-Dichloroethane	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
1,2-Dichloropropane	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	13	1	8260	06/25	23704
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	66	1	8260	06/25	23704
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	13	1	8260	06/25	23704
2-Hexanone	BDL	UG/KG-DW	66	1	8260	06/25	23704
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	66	1	8260	06/25	23704
Acetone	BDL	UG/KG-DW	66	1	8260	06/25	23704
Acrolein	BDL	UG/KG-DW	260	1	8260	06/25	23704
Acrylonitrile	BDL	UG/KG-DW	130	1	8260	06/25	23704
Benzene	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Bromodichloromethane	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Bromoform	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Bromomethane	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Carbon tetrachloride	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Chloroform	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Chlorobenzene	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Chloroethane	BDL	UG/KG-DW	13	1	8260	06/25	23704
Chloromethane	BDL	UG/KG-DW	13	1	8260	06/25	23704
Carbon disulfide	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Dichlorodifluoromethane	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Dibromochloromethane	BDL	UG/KG-DW	13	1	8260	06/25	23704
Dibromomethane	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Ethylbenzene	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Ethyl methacrylate	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Iodomethane	BDL	UG/KG-DW	6.6	1	8260	06/25	23704

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
ıst Proj: TF0320.014
ımple Desc: 960612-CO-05-SL0002 (15-17), Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14822
Date Collected: 06/12/96 10:55
Collected By: CST
Date Received: 06/13/96 10:20
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ıb ID: 96 0006503

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Methylene chloride	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
o-Xylene	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Styrene	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Trichloroethene	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Trichlorofluoromethane	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Tetrachloroethene	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Toluene	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.6	1	8260	06/25	23704
Vinyl acetate	BDL	UG/KG-DW	13	1	8260	06/25	23704
Vinyl chloride	BDL	UG/KG-DW	13	1	8260	06/25	23704
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.3	1	9012	06/25	23243
PHYSICAL							
Percent Solids	76	%	4	1	160.3	06/18	23105

OMMENTS

01 Results for antimony should be considered estimates due to low recovery in matrix spike and matrix spike duplicate.

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 Results for semivolatile organics by method 8270 should be considered estimates due to low recovery of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene.

03 QCRS recovery for acenaphthene was low also. Surrogate recoveries were within control limits as was calibration.

04 Results for 1,4-dichloro-2-butene, 2-hexanone acetone, 1,2,3-trichloropropane and iodomethane should be considered estimates due to QCRS recovery outside of project limit

05 Method blank associated with this sample contained 1,1,2,2-trichloroethane. Sample results are reported without blank subtraction.

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Unit followed by 'DW' signifies Results in Dry Weight.

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ample Desc: 960612-CO-05-TB0009, Birmingham, AL

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
RGANIC							
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/20	23421
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/20	23421
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/20	23421
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/20	23421
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/20	23421
2-Hexanone	BDL	UG/L	50	1	8260	06/20	23421
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/20	23421
Acetone	BDL	UG/L	50	1	8260	06/20	23421
Acrolein	BDL	UG/L	100	1	8260	06/20	23421
Acrylonitrile	BDL	UG/L	100	1	8260	06/20	23421
Benzene	BDL	UG/L	5	1	8260	06/20	23421
Bromodichloromethane	BDL	UG/L	5	1	8260	06/20	23421
Bromoform	BDL	UG/L	5	1	8260	06/20	23421
Bromomethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/20	23421
Chloroform	BDL	UG/L	5	1	8260	06/20	23421
Chlorobenzene	BDL	UG/L	5	1	8260	06/20	23421
Chloroethane	BDL	UG/L	10	1	8260	06/20	23421
Chloromethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon disulfide	BDL	UG/L	5	1	8260	06/20	23421

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mple Desc: 960612-CO-05-TB0009, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006504

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/20	23421
Dibromochloromethane	BDL	UG/L	10	1	8260	06/20	23421
Dibromomethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/20	23421
Ethylbenzene	BDL	UG/L	5	1	8260	06/20	23421
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/20	23421
Iodomethane	BDL	UG/L	5	1	8260	06/20	23421
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/20	23421
Methylene chloride	BDL	UG/L	5	1	8260	06/20	23421
o-Xylene	BDL	UG/L	.5	1	8260	06/20	23421
Styrene	BDL	UG/L	5	1	8260	06/20	23421
Trichloroethene	BDL	UG/L	.5	1	8260	06/20	23421
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/20	23421
Tetrachloroethene	BDL	UG/L	5	1	8260	06/20	23421
Toluene	0.6	UG/L	.5	1	8260	06/20	23421
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Vinyl acetate	BDL	UG/L	10	1	8260	06/20	23421
Vinyl chloride	BDL	UG/L	10	1	8260	06/20	23421

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	UG/L	10	5	6020	06/19	23112
Arsenic, Total	BDL	UG/L	10	5	6020	06/19	23112
Barium, Total	BDL	UG/L	10	5	6020	06/19	23112
Beryllium, Total	BDL	UG/L	5	5	6020	06/19	23112
Cadmium, Total	BDL	UG/L	5	5	6020	06/19	23112
Chromium, Total	BDL	UG/L	10	5	6020	06/19	23112
Copper, Total	BDL	UG/L	25	5	6020	06/19	23112
Mercury, Total	BDL	UG/L	50	1	7470	06/25	23210
Nickel, Total	BDL	UG/L	40	5	6020	06/19	23112
Lead, Total	BDL	UG/L	50	5	6020	06/19	23112
Antimony, Total	BDL	UG/L	50	5	6020	06/19	23112
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23106
Thallium, Total	BDL	UG/L	10	5	6020	06/19	23112
Zinc, Total	BDL	UG/L	20	5	6020	06/19	23112
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/08	23523
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/08	23523
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23523
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23523

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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Chris Given
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st Proj: TF0320.014

mple Desc: 960612-CO-05-FB0005, Birmingham, AL

b ID: 96 0006505

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FL-DHRS Cert. No: E84254/84453

FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23523
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/08	23523
2-Chlorophenol	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Ethylhexyl) phthalate	BDL	UG/L	10	1	8270	07/08	23523
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/08	23523
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
2-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
2-Nitrophenol	BDL	UG/L	10	1	8270	07/08	23523
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
3-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/08	23523
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23523
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/08	23523
4-Chloroaniline	BDL	UG/L	20	1	8270	07/08	23523
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23523
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
4-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
4-Nitrophenol	BDL	UG/L	50	1	8270	07/08	23523
Acenaphthene	BDL	UG/L	10	1	8270	07/08	23523
Acenaphthylene	BDL	UG/L	10	1	8270	07/08	23523
Anthracene	BDL	UG/L	10	1	8270	07/08	23523
Benzyl alcohol	BDL	UG/L	10	1	8270	07/08	23523
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/08	23523
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/08	23523
Chrysene	BDL	UG/L	10	1	8270	07/08	23523

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/08	23523
Dibenzofuran	BDL	UG/L	10	1	8270	07/08	23523
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/08	23523
Di-n-butylphthalate	BDL	UG/L	10	1	8270	07/08	23523
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/08	23523
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
Diethylphthalate	BDL	UG/L	10	1	8270	07/08	23523
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/08	23523
Dimethylphthalate	BDL	UG/L	10	1	8270	07/08	23523
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/08	23523
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/08	23523
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/08	23523
Fluorene	BDL	UG/L	10	1	8270	07/08	23523
Fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
Hexachloroethane	BDL	UG/L	10	1	8270	07/08	23523
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/08	23523
Isophorone	BDL	UG/L	10	1	8270	07/08	23523
Naphthalene	BDL	UG/L	10	1	8270	07/08	23523
Nitrobenzene	BDL	UG/L	10	1	8270	07/08	23523
Pentachlorophenol	BDL	UG/L	50	1	8270	07/08	23523
Phenol	BDL	UG/L	10	1	8270	07/08	23523
Phenanthrene	BDL	UG/L	10	1	8270	07/08	23523
Pyrene	BDL	UG/L	10	1	8270	07/08	23523

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Pyridine	BDL	UG/L	200	1	8270	07/08	23523
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/20	23421
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/20	23421
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/20	23421
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/20	23421
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/20	23421
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/20	23421
2-Hexanone	BDL	UG/L	50	1	8260	06/20	23421
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/20	23421
Acetone	BDL	UG/L	50	1	8260	06/20	23421
Acrolein	BDL	UG/L	100	1	8260	06/20	23421
Acrylonitrile	BDL	UG/L	100	1	8260	06/20	23421
Benzene	BDL	UG/L	5	1	8260	06/20	23421
Bromodichloromethane	BDL	UG/L	5	1	8260	06/20	23421
Bromoform	BDL	UG/L	5	1	8260	06/20	23421
Bromomethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/20	23421
Chloroform	BDL	UG/L	5	1	8260	06/20	23421
Chlorobenzene	BDL	UG/L	5	1	8260	06/20	23421
Chloroethane	BDL	UG/L	10	1	8260	06/20	23421
Chloromethane	BDL	UG/L	10	1	8260	06/20	23421
Carbon disulfide	BDL	UG/L	5	1	8260	06/20	23421

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Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Date of Report: 07/26/96
C-of-C Number: C14823
Date Collected: 06/12/96 08:40
Collected By: CST
Date Received: 06/13/96 10:20

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960612-CO-05-FB0005, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006505

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/20	23421
Dibromochloromethane	BDL	UG/L	10	1	8260	06/20	23421
Dibromomethane	BDL	UG/L	5	1	8260	06/20	23421
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/20	23421
Ethylbenzene	BDL	UG/L	5	1	8260	06/20	23421
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/20	23421
Iodomethane	BDL	UG/L	5	1	8260	06/20	23421
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/20	23421
Methylene chloride	BDL	UG/L	5	1	8260	06/20	23421
o-Xylene	BDL	UG/L	.5	1	8260	06/20	23421
Styrene	BDL	UG/L	5	1	8260	06/20	23421
Trichloroethene	BDL	UG/L	.5	1	8260	06/20	23421
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/20	23421
Tetrachloroethene	BDL	UG/L	5	1	8260	06/20	23421
Toluene	BDL	UG/L	.5	1	8260	06/20	23421
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/20	23421
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/20	23421
Vinyl acetate	BDL	UG/L	10	1	8260	06/20	23421
Vinyl chloride	BDL	UG/L	10	1	8260	06/20	23421
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/25	23244

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

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FL-DEP CompQAP: 900359G

ab ID: 96 0006505

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

OMMENTS

01 Method blank associated with this sample contained di-n-butylphthalate. Sample result is reported without blank subtraction.

00167

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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Chris Given
Laboratory Director

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FL-DHRS Cert. No: E84254/84453

ample Desc: 960612-CO-05-SLEB05, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006506

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	UG/L	10	5	6020	06/19	23112
Arsenic, Total	BDL	UG/L	10	5	6020	06/19	23112
Barium, Total	BDL	UG/L	10	5	6020	06/19	23112
Beryllium, Total	BDL	UG/L	5	5	6020	06/19	23112
Cadmium, Total	BDL	UG/L	5	5	6020	06/19	23112
Chromium, Total	BDL	UG/L	10	5	6020	06/19	23112
Copper, Total	BDL	UG/L	25	5	6020	06/19	23112
Mercury, Total	BDL	UG/L	50	1	7470	06/25	23210
Nickel, Total	BDL	UG/L	40	5	6020	06/19	23112
Lead, Total	BDL	UG/L	50	5	6020	06/19	23112
Antimony, Total	BDL	UG/L	50	5	6020	06/19	23112
Selenium, Total	BDL	UG/L	10	1	7740	06/19	23106
Thallium, Total	BDL	UG/L	10	5	6020	06/19	23112
Zinc, Total	BDL	UG/L	20	5	6020	06/19	23112
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,2-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,3-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
1,4-Dichlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
2,3,4,6-tetrachlorophenol	BDL	UG/L	50	1	8270	07/08	23523
2,4,5-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
2,4,6-Trichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
2,4-Dinitrophenol	BDL	UG/L	50	1	8270	07/08	23523
2,4-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23523
2,6-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23523

ote 'BDL' = Below Detection Limit

.stribution of Report:
harles A. Jones - Sloss Industries

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FL-DHRS Cert. No: E84254/84453

ample Desc: 960612-CO-05-SLEB05, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006506

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2,6-Dinitrotoluene	BDL	UG/L	10	1	8270	07/08	23523
2-Chloronaphthalene	BDL	UG/L	10	1	8270	07/08	23523
2-Chlorophenol	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Ethylhexyl) phthalate	BDL	UG/L	10	1	8270	07/08	23523
2-Methylnaphthalene	BDL	UG/L	10	1	8270	07/08	23523
2-Methylphenol (o-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
2-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
2-Nitrophenol	BDL	UG/L	10	1	8270	07/08	23523
3-Methylphenol (m-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
3-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
4,6-Dinitro-2-methylphenol	BDL	UG/L	50	1	8270	07/08	23523
4-Bromophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23523
4-Chloro-3-methylphenol	BDL	UG/L	10	1	8270	07/08	23523
4-Chloroaniline	BDL	UG/L	20	1	8270	07/08	23523
4-Chlorophenyl phenyl ether	BDL	UG/L	10	1	8270	07/08	23523
4-Methylphenol (p-Cresol)	BDL	UG/L	10	1	8270	07/08	23523
4-Nitroaniline	BDL	UG/L	50	1	8270	07/08	23523
4-Nitrophenol	BDL	UG/L	50	1	8270	07/08	23523
Acenaphthene	BDL	UG/L	10	1	8270	07/08	23523
Acenaphthylene	BDL	UG/L	10	1	8270	07/08	23523
Anthracene	BDL	UG/L	10	1	8270	07/08	23523
Benzyl alcohol	BDL	UG/L	10	1	8270	07/08	23523
Benzo(a)anthracene	BDL	UG/L	10	1	8270	07/08	23523
Benzo(a)pyrene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (b) fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (k) fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Benzo (g,h,i) perylene	BDL	UG/L	10	1	8270	07/08	23523
Chrysene	BDL	UG/L	10	1	8270	07/08	23523

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istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
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Chris Given
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10301 NINTH STREET NORTH • ST. PETERSBURG, FLORIDA 33716 • PHONE (813) 577-9334 • FAX (813) 576-5384

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ab ID: 96 0006506

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
bis-(2-Chloroethyl) ether	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Chloroisopropyl) ether	BDL	UG/L	10	1	8270	07/08	23523
Dibenzofuran	BDL	UG/L	10	1	8270	07/08	23523
Dibenzo (a,h) anthracene	BDL	UG/L	10	1	8270	07/08	23523
Di-n-butylphthalate	3000	UG/L	10	1	8270	07/08	23523
3,3'-Dichlorobenzidine	BDL	UG/L	200	1	8270	07/08	23523
2,4-Dichlorophenol	BDL	UG/L	10	1	8270	07/08	23523
Diethylphthalate	BDL	UG/L	10	1	8270	07/08	23523
2,4-Dimethylphenol	BDL	UG/L	10	1	8270	07/08	23523
Dimethylphthalate	BDL	UG/L	10	1	8270	07/08	23523
n-Nitrosodimethylamine	BDL	UG/L	10	1	8270	07/08	23523
n-Nitroso-di-n-propylamine	BDL	UG/L	10	1	8270	07/08	23523
Di-n-octylphthalate	BDL	UG/L	10	1	8270	07/08	23523
bis-(2-Chloroethoxy) methane	BDL	UG/L	10	1	8270	07/08	23523
Fluorene	BDL	UG/L	10	1	8270	07/08	23523
Fluoranthene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorocyclopentadiene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorobutadiene	BDL	UG/L	10	1	8270	07/08	23523
Hexachlorobenzene	BDL	UG/L	10	1	8270	07/08	23523
Hexachloroethane	BDL	UG/L	10	1	8270	07/08	23523
Indeno(1,2,3-cd)pyrene	BDL	UG/L	10	1	8270	07/08	23523
Isophorone	BDL	UG/L	10	1	8270	07/08	23523
Naphthalene	BDL	UG/L	10	1	8270	07/08	23523
Nitrobenzene	BDL	UG/L	10	1	8270	07/08	23523
Pentachlorophenol	BDL	UG/L	50	1	8270	07/08	23523
Phenol	BDL	UG/L	10	1	8270	07/08	23523
Phenanthrene	BDL	UG/L	10	1	8270	07/08	23523
Pyrene	BDL	UG/L	10	1	8270	07/08	23523

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istribution of Report:
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ab ID: 96 0006506

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Pyridine	BDL	UG/L	200	1	8270	07/08	23523
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/21	23426
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/21	23426
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/21	23426
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/21	23426
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/21	23426
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/21	23426
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/21	23426
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/21	23426
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/21	23426
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/21	23426
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/21	23426
2-Hexanone	BDL	UG/L	50	1	8260	06/21	23426
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/21	23426
Acetone	BDL	UG/L	50	1	8260	06/21	23426
Acrolein	BDL	UG/L	100	1	8260	06/21	23426
Acrylonitrile	BDL	UG/L	100	1	8260	06/21	23426
Benzene	BDL	UG/L	5	1	8260	06/21	23426
Bromodichloromethane	BDL	UG/L	5	1	8260	06/21	23426
Bromoform	BDL	UG/L	5	1	8260	06/21	23426
Bromomethane	BDL	UG/L	10	1	8260	06/21	23426
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/21	23426
Chloroform	BDL	UG/L	5	1	8260	06/21	23426
Chlorobenzene	BDL	UG/L	5	1	8260	06/21	23426
Chloroethane	BDL	UG/L	10	1	8260	06/21	23426
Chloromethane	BDL	UG/L	10	1	8260	06/21	23426
Carbon disulfide	BDL	UG/L	5	1	8260	06/21	23426

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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ample Desc: 960612-CO-05-SLEB05, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006506

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/21	23426
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/21	23426
Dibromochloromethane	BDL	UG/L	10	1	8260	06/21	23426
Dibromomethane	BDL	UG/L	5	1	8260	06/21	23426
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/21	23426
Ethylbenzene	BDL	UG/L	5	1	8260	06/21	23426
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/21	23426
Iodomethane	BDL	UG/L	5	1	8260	06/21	23426
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/21	23426
Methylene chloride	BDL	UG/L	5	1	8260	06/21	23426
o-Xylene	BDL	UG/L	.5	1	8260	06/21	23426
Styrene	BDL	UG/L	5	1	8260	06/21	23426
Trichloroethene	BDL	UG/L	.5	1	8260	06/21	23426
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/21	23426
Tetrachloroethene	BDL	UG/L	5	1	8260	06/21	23426
Toluene	BDL	UG/L	.5	1	8260	06/21	23426
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/21	23426
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/21	23426
Vinyl acetate	BDL	UG/L	10	1	8260	06/21	23426
Vinyl chloride	BDL	UG/L	10	1	8260	06/21	23426
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/L	.01	1	9012	06/25	23244

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ample Desc: 960612-CO-05-SLEB05, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006506

Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

OMMENTS

01 Method blank associated with this sample contained di-n-butylphthalate. Sample result is reported without blank subtraction.

0004723

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

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ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
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Date of Report: 07/26/96
C-of-C Number: C14844
Date Collected: 06/13/96 00:00
Collected By: CST
Date Received: 06/14/96 10:40

ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960613-CO-01B-TB0011, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006586

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
RGANIC							
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/L	.5	1	8260	06/21	23426
1,1,2,2-Tetrachloroethane	BDL	UG/L	5	1	8260	06/21	23426
1,1,2-Trichloroethane	BDL	UG/L	.5	1	8260	06/21	23426
1,1-Dichloroethane	BDL	UG/L	5	1	8260	06/21	23426
1,1-Dichloroethene	BDL	UG/L	5	1	8260	06/21	23426
1,2,3-Trichloropropane	BDL	UG/L	.5	1	8260	06/21	23426
1,2-Dichloroethane	BDL	UG/L	5	1	8260	06/21	23426
1,2-Dichloropropane	BDL	UG/L	5	1	8260	06/21	23426
1,4-Dichloro-2-Butene	BDL	UG/L	10	1	8260	06/21	23426
2-Butanone (Methyl ethyl ketone)	BDL	UG/L	50	1	8260	06/21	23426
2-Chloroethyl vinyl ether	BDL	UG/L	10	1	8260	06/21	23426
2-Hexanone	BDL	UG/L	50	1	8260	06/21	23426
4-Methyl-2-pentanone (MIBK)	BDL	UG/L	50	1	8260	06/21	23426
Acetone	BDL	UG/L	50	1	8260	06/21	23426
Acrolein	BDL	UG/L	100	1	8260	06/21	23426
Acrylonitrile	BDL	UG/L	100	1	8260	06/21	23426
Benzene	BDL	UG/L	5	1	8260	06/21	23426
Bromodichloromethane	BDL	UG/L	5	1	8260	06/21	23426
Bromoform	BDL	UG/L	5	1	8260	06/21	23426
Bromomethane	BDL	UG/L	10	1	8260	06/21	23426
Carbon tetrachloride	BDL	UG/L	5	1	8260	06/21	23426
Chloroform	BDL	UG/L	5	1	8260	06/21	23426
Chlorobenzene	BDL	UG/L	5	1	8260	06/21	23426
Chloroethane	BDL	UG/L	10	1	8260	06/21	23426
Chloromethane	BDL	UG/L	10	1	8260	06/21	23426
Carbon disulfide	BDL	UG/L	5	1	8260	06/21	23426

ote 'BDL' = Below Detection Limit

0004274

istribution of Report:
harles A. Jones - Sloss Industries

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ust Proj: TF0320.014

FL-DHRS Cert. No: E84254/84453

ample Desc: 960613-CO-01B-TB0011, Birmingham, AL

FL-DEP CompQAP: 900359G

ab ID: 96 0006586

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
cis-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/21	23426
Dichlorodifluoromethane	BDL	UG/L	5	1	8260	06/21	23426
Dibromochloromethane	BDL	UG/L	10	1	8260	06/21	23426
Dibromomethane	BDL	UG/L	5	1	8260	06/21	23426
1,2-Dibromoethane (EDB)	BDL	UG/L	5	1	8260	06/21	23426
Ethylbenzene	BDL	UG/L	5	1	8260	06/21	23426
Ethyl methacrylate	BDL	UG/L	5	1	8260	06/21	23426
Iodomethane	BDL	UG/L	5	1	8260	06/21	23426
m- and p-Xylenes	BDL	UG/L	.5	1	8260	06/21	23426
Methylene chloride	BDL	UG/L	5	1	8260	06/21	23426
o-Xylene	BDL	UG/L	.5	1	8260	06/21	23426
Styrene	BDL	UG/L	5	1	8260	06/21	23426
Trichloroethene	BDL	UG/L	.5	1	8260	06/21	23426
Trichlorofluoromethane	BDL	UG/L	.5	1	8260	06/21	23426
Tetrachloroethene	BDL	UG/L	5	1	8260	06/21	23426
Toluene	BDL	UG/L	.5	1	8260	06/21	23426
trans-1,2-Dichloroethene	BDL	UG/L	5	1	8260	06/21	23426
trans-1,3-Dichloropropene	BDL	UG/L	5	1	8260	06/21	23426
Vinyl acetate	BDL	UG/L	10	1	8260	06/21	23426
Vinyl chloride	BDL	UG/L	10	1	8260	06/21	23426

0004715

ote 'BDL' = Below Detection Limit

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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ust Proj: TF0320.014
ample Desc: 960613-CO-05-SL0004 (7-9), Birmingham, AL

ab ID: 96 0006587

Date of Report: 07/26/96
C-of-C Number: C14844
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Collected By: CST
Date Received: 06/14/96 10:40
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.3	1	6010	06/24	23202
Arsenic, Total	9	MG/KG-DW	1	10	6020	06/25	23225
Barium, Total	140	MG/KG-DW	1.3	1	6010	06/24	23202
Beryllium, Total	4.2	MG/KG-DW	0.64	1	6010	06/24	23202
Cadmium, Total	BDL	MG/KG-DW	6.4	1	6010	06/24	23202
Chromium, Total	59	MG/KG-DW	6.4	1	6010	06/24	23202
Copper, Total	14	MG/KG-DW	3.2	1	6010	06/24	23202
Mercury, Total	0.18	MG/KG-DW	0.056	1	7471	06/24	23194
Nickel, Total	19	MG/KG-DW	5.1	1	6010	06/24	23202
Lead, Total	20	MG/KG-DW	6.4	1	6010	06/24	23202
Antimony, Total	59	MG/KG-DW	6.4	1	6010	06/24	23202
Selenium, Total	BDL	MG/KG-DW	64	1	6010	06/24	23202
Thallium, Total	BDL	MG/KG-DW	64	1	6010	06/24	23202
Zinc, Total	62	MG/KG-DW	2.6	1	6010	06/24	23202
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	420	1	8270	07/16	23603
1,2-Dichlorobenzene	BDL	UG/KG-DW	420	1	8270	07/16	23603
1,3-Dichlorobenzene	BDL	UG/KG-DW	420	1	8270	07/16	23603
1,4-Dichlorobenzene	BDL	UG/KG-DW	420	1	8270	07/16	23603
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2,4,6-Trichlorophenol	BDL	UG/KG-DW	420	1	8270	07/16	23603
2,4-Dinitrophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2,4-Dinitrotoluene	BDL	UG/KG-DW	420	1	8270	07/16	23603
2,6-Dichlorophenol	BDL	UG/KG-DW	420	1	8270	07/16	23603
2,6-Dinitrotoluene	BDL	UG/KG-DW	420	1	8270	07/16	23603
2-Chloronaphthalene	BDL	UG/KG-DW	420	1	8270	07/16	23603

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

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Center For Applied Engineering, Inc.
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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	420	1	8270	07/16	23603
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	420	1	8270	07/16	23603
2-Methylnaphthalene	BDL	UG/KG-DW	420	1	8270	07/16	23603
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	420	1	8270	07/16	23603
2-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2-Nitrophenol	BDL	UG/KG-DW	420	1	8270	07/16	23603
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	420	1	8270	07/16	23603
3-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/16	23603
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	420	1	8270	07/16	23603
4-Chloro-3-methylphenol	BDL	UG/KG-DW	420	1	8270	07/16	23603
4-Chloroaniline	BDL	UG/KG-DW	850	1	8270	07/16	23603
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	420	1	8270	07/16	23603
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	420	1	8270	07/16	23603
4-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/16	23603
4-Nitrophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
Acenaphthene	BDL	UG/KG-DW	420	1	8270	07/16	23603
Acenaphthylene	BDL	UG/KG-DW	420	1	8270	07/16	23603
Anthracene	450	UG/KG-DW	420	1	8270	07/16	23603
Benzyl alcohol	BDL	UG/KG-DW	420	1	8270	07/16	23603
Benzo(a)anthracene	830	UG/KG-DW	420	1	8270	07/16	23603
Benzo(a)pyrene	1300	UG/KG-DW	420	1	8270	07/16	23603
Benzo (b) fluoranthene	700	UG/KG-DW	420	1	8270	07/16	23603
Benzo (k) fluoranthene	BDL	UG/KG-DW	420	1	8270	07/16	23603
Benzo (g,h,i) perylene	BDL	UG/KG-DW	420	1	8270	07/16	23603
Chrysene	670	UG/KG-DW	420	1	8270	07/16	23603
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	420	1	8270	07/16	23603
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	420	1	8270	07/16	23603
Dibenzofuran	BDL	UG/KG-DW	420	1	8270	07/16	23603
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	420	1	8270	07/16	23603

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
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ab ID: 96 0006587

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	420	1	8270	07/16	23603
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2200	1	8270	07/16	23603
2,4-Dichlorophenol	BDL	UG/KG-DW	420	1	8270	07/16	23603
Diethylphthalate	BDL	UG/KG-DW	420	1	8270	07/16	23603
2,4-Dimethylphenol	BDL	UG/KG-DW	420	1	8270	07/16	23603
Dimethylphthalate	BDL	UG/KG-DW	420	1	8270	07/16	23603
n-Nitrosodimethylamine	BDL	UG/KG-DW	420	1	8270	07/16	23603
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	420	1	8270	07/16	23603
Di-n-octylphthalate	BDL	UG/KG-DW	420	1	8270	07/16	23603
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	420	1	8270	07/16	23603
Fluorene	460	UG/KG-DW	420	1	8270	07/16	23603
Fluoranthene	1400	UG/KG-DW	420	1	8270	07/16	23603
Hexachlorocyclopentadiene	BDL	UG/KG-DW	420	1	8270	07/16	23603
Hexachlorobutadiene	BDL	UG/KG-DW	420	1	8270	07/16	23603
Hexachlorobenzene	BDL	UG/KG-DW	420	1	8270	07/16	23603
Hexachloroethane	BDL	UG/KG-DW	420	1	8270	07/16	23603
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	420	1	8270	07/16	23603
Isophorone	BDL	UG/KG-DW	420	1	8270	07/16	23603
Naphthalene	2000	UG/KG-DW	420	1	8270	07/16	23603
Nitrobenzene	BDL	UG/KG-DW	420	1	8270	07/16	23603
Pentachlorophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23603
Phenol	BDL	UG/KG-DW	420	1	8270	07/16	23603
Phenanthrene	2800	UG/KG-DW	420	1	8270	07/16	23603
Pyrene	1400	UG/KG-DW	420	1	8270	07/16	23603
Pyridine	BDL	UG/KG-DW	420	1	8270	07/16	23603
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.64	1	8260	06/26	23704
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
1,1-Dichloroethane	BDL	UG/KG-DW	6.4	1	8260	06/26	23704

0004178

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
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Chris Given
Laboratory Director

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
1,2-Dichloroethane	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
1,2-Dichloropropane	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	13	1	8260	06/26	23704
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	64	1	8260	06/26	23704
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	13	1	8260	06/26	23704
2-Hexanone	BDL	UG/KG-DW	64	1	8260	06/26	23704
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	64	1	8260	06/26	23704
Acetone	BDL	UG/KG-DW	64	1	8260	06/26	23704
Acrolein	BDL	UG/KG-DW	260	1	8260	06/26	23704
Acrylonitrile	BDL	UG/KG-DW	130	1	8260	06/26	23704
Benzene	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Bromodichloromethane	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Bromoform	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Bromomethane	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Carbon tetrachloride	9	UG/KG-DW	6	1	8260	06/26	23704
Chloroform	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Chlorobenzene	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Chloroethane	BDL	UG/KG-DW	13	1	8260	06/26	23704
Chloromethane	BDL	UG/KG-DW	13	1	8260	06/26	23704
Carbon disulfide	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Dichlorodifluoromethane	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Dibromochloromethane	BDL	UG/KG-DW	13	1	8260	06/26	23704
Dibromomethane	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Ethylbenzene	23	UG/KG-DW	6.4	1	8260	06/26	23704
Ethyl methacrylate	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Iodomethane	BDL	UG/KG-DW	6.4	1	8260	06/26	23704

0004779

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
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Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
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ust Proj: TF0320.014
ample Desc: 960613-CO-05-SL0004 (7-9), Birmingham, AL

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	150	UG/KG-DW	6.4	1	8260	06/26	23704
Methylene chloride	10	UG/KG-DW	6	1	8260	06/26	23704
o-Xylene	100	UG/KG-DW	6.4	1	8260	06/26	23704
Styrene	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Trichloroethene	14	UG/KG-DW	6.4	1	8260	06/26	23704
Trichlorofluoromethane	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Tetrachloroethene	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Toluene	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.4	1	8260	06/26	23704
Vinyl acetate	BDL	UG/KG-DW	13	1	8260	06/26	23704
Vinyl chloride	BDL	UG/KG-DW	13	1	8260	06/26	23704
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.3	1	9012	06/25	23268
PHYSICAL							
Percent Solids	78	%	4	1	160.3	06/18	23105

0004130

OMMENTS

01 Results for semivolatile organics by method 8270 should be considered estimates due to low recovery of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene.

ote 'BDL' = Below Detection Limit
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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 QCRS recovery for acenaphthene was low also. Surrogate recoveries were within control limits as was calibration.

03 Results for 1,4-dichloro-2-butene, 2-hexanone acetone, 1,2,3-trichloropropane and iodomethane should be considered estimates due to QCRS recovery outside of project limit

04 Method blank associated with this sample contained 1,1,2,2-trichloroethane. Sample results are reported without blank subtraction.

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Unit followed by 'DW' signifies Results in Dry Weight.

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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.4	1	6010	06/24	23202
Arsenic, Total	8	MG/KG-DW	1	10	6020	06/25	23225
Barium, Total	79	MG/KG-DW	1.4	1	6010	06/24	23202
Beryllium, Total	2.7	MG/KG-DW	0.70	1	6010	06/24	23202
Cadmium, Total	BDL	MG/KG-DW	7.0	1	6010	06/24	23202
Chromium, Total	10	MG/KG-DW	7	1	6010	06/24	23202
Copper, Total	18	MG/KG-DW	3.5	1	6010	06/24	23202
Mercury, Total	0.21	MG/KG-DW	0.062	1	7471	06/24	23194
Nickel, Total	24	MG/KG-DW	5.6	1	6010	06/24	23202
Lead, Total	10	MG/KG-DW	7	1	6010	06/24	23202
Antimony, Total	BDL	MG/KG-DW	7.0	1	6010	06/24	23202
Selenium, Total	BDL	MG/KG-DW	70	1	6010	06/24	23202
Thallium, Total	BDL	MG/KG-DW	70	1	6010	06/24	23202
Zinc, Total	59	MG/KG-DW	2.8	1	6010	06/24	23202
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	460	1	8270	07/15	23603
1,2-Dichlorobenzene	BDL	UG/KG-DW	460	1	8270	07/15	23603
1,3-Dichlorobenzene	BDL	UG/KG-DW	460	1	8270	07/15	23603
1,4-Dichlorobenzene	BDL	UG/KG-DW	460	1	8270	07/15	23603
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2400	1	8270	07/15	23603
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2400	1	8270	07/15	23603
2,4,6-Trichlorophenol	BDL	UG/KG-DW	460	1	8270	07/15	23603
2,4-Dinitrophenol	BDL	UG/KG-DW	2400	1	8270	07/15	23603
2,4-Dinitrotoluene	BDL	UG/KG-DW	460	1	8270	07/15	23603
2,6-Dichlorophenol	BDL	UG/KG-DW	460	1	8270	07/15	23603
2,6-Dinitrotoluene	BDL	UG/KG-DW	460	1	8270	07/15	23603
2-Chloronaphthalene	BDL	UG/KG-DW	460	1	8270	07/15	23603

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Unit followed by 'DW' signifies Results in Dry Weight.

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Tampa FL 33618

ıst Proj: TF0320.014
ample Desc: 960613-CO-05-SL0004 (9-11), Birmingham, AL

ab ID: 96 0006588

Date of Report: 07/26/96
C-of-C Number: C14844
Date Collected: 06/13/96 09:40
Collected By: CST
Date Received: 06/14/96 10:40
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	460	1	8270	07/15	23603
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	460	1	8270	07/15	23603
2-Methylnaphthalene	BDL	UG/KG-DW	460	1	8270	07/15	23603
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	460	1	8270	07/15	23603
2-Nitroaniline	BDL	UG/KG-DW	2400	1	8270	07/15	23603
2-Nitrophenol	BDL	UG/KG-DW	460	1	8270	07/15	23603
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	460	1	8270	07/15	23603
3-Nitroaniline	BDL	UG/KG-DW	2400	1	8270	07/15	23603
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2400	1	8270	07/15	23603
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	460	1	8270	07/15	23603
4-Chloro-3-methylphenol	BDL	UG/KG-DW	460	1	8270	07/15	23603
4-Chloroaniline	BDL	UG/KG-DW	930	1	8270	07/15	23603
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	460	1	8270	07/15	23603
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	460	1	8270	07/15	23603
4-Nitroaniline	BDL	UG/KG-DW	2400	1	8270	07/15	23603
4-Nitrophenol	BDL	UG/KG-DW	2400	1	8270	07/15	23603
Acenaphthene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Acenaphthylene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Anthracene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Benzyl alcohol	BDL	UG/KG-DW	460	1	8270	07/15	23603
Benzo(a)anthracene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Benzo(a)pyrene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Benzo (b) fluoranthene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Benzo (k) fluoranthene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Benzo (g,h,i) perylene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Chrysene	BDL	UG/KG-DW	460	1	8270	07/15	23603
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	460	1	8270	07/15	23603
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	460	1	8270	07/15	23603
Dibenzofuran	BDL	UG/KG-DW	460	1	8270	07/15	23603
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	460	1	8270	07/15	23603

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

0004833

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

Attention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
Cust Proj: TF0320.014
Sample Desc: 960613-CO-05-SL0004 (9-11), Birmingham, AL

Lab ID: 96 0006588

Date of Report: 07/26/96
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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	460	1	8270	07/15	23603
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2400	1	8270	07/15	23603
2,4-Dichlorophenol	BDL	UG/KG-DW	460	1	8270	07/15	23603
Diethylphthalate	BDL	UG/KG-DW	460	1	8270	07/15	23603
2,4-Dimethylphenol	BDL	UG/KG-DW	460	1	8270	07/15	23603
Dimethylphthalate	BDL	UG/KG-DW	460	1	8270	07/15	23603
n-Nitrosodimethylamine	BDL	UG/KG-DW	460	1	8270	07/15	23603
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	460	1	8270	07/15	23603
Di-n-octylphthalate	BDL	UG/KG-DW	460	1	8270	07/15	23603
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	460	1	8270	07/15	23603
Fluorene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Fluoranthene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Hexachlorocyclopentadiene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Hexachlorobutadiene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Hexachlorobenzene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Hexachloroethane	BDL	UG/KG-DW	460	1	8270	07/15	23603
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Isophorone	BDL	UG/KG-DW	460	1	8270	07/15	23603
Naphthalene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Nitrobenzene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Pentachlorophenol	BDL	UG/KG-DW	2400	1	8270	07/15	23603
Phenol	BDL	UG/KG-DW	460	1	8270	07/15	23603
Phenanthrene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Pyrene	BDL	UG/KG-DW	460	1	8270	07/15	23603
Pyridine	BDL	UG/KG-DW	460	1	8270	07/15	23603
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
1,1,2,2-Tetrachloroethane	2.1	UG/KG-DW	0.70	1	8260	06/26	23704
1,1,2-Trichloroethane	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
1,1-Dichloroethane	BDL	UG/KG-DW	7.0	1	8260	06/26	23704

000484

Note 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

Distribution of Report:
Charles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
Suite 115
Tampa FL 33618
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ample Desc: 960613-CO-05-SL0004 (9-11), Birmingham, AL

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
1,2,3-Trichloropropane	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
1,2-Dichloroethane	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
1,2-Dichloropropane	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	14	1	8260	06/26	23704
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	70	1	8260	06/26	23704
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	14	1	8260	06/26	23704
2-Hexanone	BDL	UG/KG-DW	70	1	8260	06/26	23704
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	70	1	8260	06/26	23704
Acetone	BDL	UG/KG-DW	70	1	8260	06/26	23704
Acrolein	BDL	UG/KG-DW	280	1	8260	06/26	23704
Acrylonitrile	BDL	UG/KG-DW	140	1	8260	06/26	23704
Benzene	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Bromodichloromethane	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Bromoform	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Bromomethane	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Carbon tetrachloride	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Chloroform	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Chlorobenzene	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Chloroethane	BDL	UG/KG-DW	14	1	8260	06/26	23704
Chloromethane	BDL	UG/KG-DW	14	1	8260	06/26	23704
Carbon disulfide	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
cis-1,3-Dichloropropene	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Dichlorodifluoromethane	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Dibromochloromethane	BDL	UG/KG-DW	14	1	8260	06/26	23704
Dibromomethane	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Ethylbenzene	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Ethyl methacrylate	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Iodomethane	BDL	UG/KG-DW	7.0	1	8260	06/26	23704

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960613-CO-05-SL0004 (9-11), Birmingham, AL

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ab ID: 96 0006588

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Methylene chloride	8	UG/KG-DW	7	1	8260	06/26	23704
o-Xylene	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Styrene	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Trichloroethene	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Trichlorofluoromethane	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Tetrachloroethene	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Toluene	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
trans-1,2-Dichloroethene	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
trans-1,3-Dichloropropene	BDL	UG/KG-DW	7.0	1	8260	06/26	23704
Vinyl acetate	BDL	UG/KG-DW	14	1	8260	06/26	23704
Vinyl chloride	BDL	UG/KG-DW	14	1	8260	06/26	23704
ET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.4	1	9012	06/25	23268
PHYSICAL							
Percent Solids	71	%	4	1	160.3	06/18	23105

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OMMENTS

01 Results for semivolatile organics by method 8270 should be considered estimates due to low recovery of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene.

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Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
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		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 QCRS recovery for acenaphthene was low also. Surrogate recoveries were within control limits as was calibration.

03 Results for 1,4-dichloro-2-butene, 2-hexanone acetone, 1,2,3-trichloropropane and iodomethane should be considered estimates due to QCRS recovery outside of project limit

04 Method blank associated with this sample contained 1,1,2,2-trichloroethane. Sample results are reported without blank subtraction.

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Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

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Environmental Testing Services

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.2	1	6010	06/24	23202
Arsenic, Total	10	MG/KG-DW	1	10	6020	06/25	23225
Barium, Total	73	MG/KG-DW	1.2	1	6010	06/24	23202
Beryllium, Total	2.0	MG/KG-DW	0.60	1	6010	06/24	23202
Cadmium, Total	BDL	MG/KG-DW	6.0	1	6010	06/24	23202
Chromium, Total	17	MG/KG-DW	6.0	1	6010	06/24	23202
Copper, Total	10	MG/KG-DW	3.0	1	6010	06/24	23202
Mercury, Total	0.12	MG/KG-DW	0.053	1	7471	06/24	23194
Nickel, Total	7	MG/KG-DW	5	1	6010	06/24	23202
Lead, Total	77	MG/KG-DW	6.0	1	6010	06/24	23202
Antimony, Total	BDL	MG/KG-DW	6.0	1	6010	06/24	23202
Selenium, Total	BDL	MG/KG-DW	60	1	6010	06/24	23202
Thallium, Total	BDL	MG/KG-DW	60	1	6010	06/24	23202
Zinc, Total	42	MG/KG-DW	2.4	1	6010	06/24	23202
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
1,2-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
1,3-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
1,4-Dichlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2000	1	8270	07/16	23603
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2000	1	8270	07/16	23603
2,4,6-Trichlorophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,4-Dinitrophenol	BDL	UG/KG-DW	2000	1	8270	07/16	23603
2,4-Dinitrotoluene	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,6-Dichlorophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,6-Dinitrotoluene	BDL	UG/KG-DW	400	1	8270	07/16	23603
2-Chloronaphthalene	BDL	UG/KG-DW	400	1	8270	07/16	23603

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
2-Methylnaphthalene	3200	UG/KG-DW	400	1	8270	07/16	23603
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	400	1	8270	07/16	23603
2-Nitroaniline	BDL	UG/KG-DW	2000	1	8270	07/16	23603
2-Nitrophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	400	1	8270	07/16	23603
3-Nitroaniline	BDL	UG/KG-DW	2000	1	8270	07/16	23603
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2000	1	8270	07/16	23603
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	400	1	8270	07/16	23603
4-Chloro-3-methylphenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
4-Chloroaniline	BDL	UG/KG-DW	800	1	8270	07/16	23603
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	400	1	8270	07/16	23603
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	400	1	8270	07/16	23603
4-Nitroaniline	BDL	UG/KG-DW	2000	1	8270	07/16	23603
4-Nitrophenol	BDL	UG/KG-DW	2000	1	8270	07/16	23603
Acenaphthene	1600	UG/KG-DW	400	1	8270	07/16	23603
Acenaphthylene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Anthracene	3700	UG/KG-DW	400	1	8270	07/16	23603
Benzyl alcohol	BDL	UG/KG-DW	400	1	8270	07/16	23603
Benzo(a)anthracene	5100	UG/KG-DW	400	1	8270	07/16	23603
Benzo(a)pyrene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Benzo (b) fluoranthene	4600	UG/KG-DW	400	1	8270	07/16	23603
Benzo (k) fluoranthene	590	UG/KG-DW	400	1	8270	07/16	23603
Benzo (g,h,i) perylene	470	UG/KG-DW	400	1	8270	07/16	23603
Chrysene	3700	UG/KG-DW	400	1	8270	07/16	23603
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	400	1	8270	07/16	23603
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	400	1	8270	07/16	23603
Dibenzofuran	3100	UG/KG-DW	400	1	8270	07/16	23603
Dibenzo (a,h) anthracene	430	UG/KG-DW	400	1	8270	07/16	23603

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istribution of Report:
harles A. Jones - Sloss Industries

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2000	1	8270	07/16	23603
2,4-Dichlorophenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
Diethylphthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
2,4-Dimethylphenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
Dimethylphthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
n-Nitrosodimethylamine	BDL	UG/KG-DW	400	1	8270	07/16	23603
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	400	1	8270	07/16	23603
Di-n-octylphthalate	BDL	UG/KG-DW	400	1	8270	07/16	23603
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	400	1	8270	07/16	23603
Fluorene	5800	UG/KG-DW	400	1	8270	07/16	23603
Fluoranthene	34000	UG/KG-DW	20000	50	8270	07/20	23603
Hexachlorocyclopentadiene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Hexachlorobutadiene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Hexachlorobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Hexachloroethane	BDL	UG/KG-DW	400	1	8270	07/16	23603
Indeno(1,2,3-cd)pyrene	3000	UG/KG-DW	400	1	8270	07/16	23603
Isophorone	BDL	UG/KG-DW	400	1	8270	07/16	23603
Naphthalene	23000	UG/KG-DW	20000	50	8270	07/20	23603
Nitrobenzene	BDL	UG/KG-DW	400	1	8270	07/16	23603
Pentachlorophenol	BDL	UG/KG-DW	2000	1	8270	07/16	23603
Phenol	BDL	UG/KG-DW	400	1	8270	07/16	23603
Phenanthrene	22000	UG/KG-DW	20000	50	8270	07/20	23603
Pyrene	BDL	UG/KG-DW	20000	50	8270	07/20	23603
Pyridine	BDL	UG/KG-DW	400	1	8270	07/16	23603
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.60	1	8260	06/26	23705
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
1,1-Dichloroethane	BDL	UG/KG-DW	6.0	1	8260	06/26	23705

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

ust Proj: TF0320.014
ample Desc: 960613-CO-05-SL0005 (1-3), Birmingham, AL

ab ID: 96 0006589

Date of Report: 07/26/96
C-of-C Number: C14844
Date Collected: 06/13/96 13:05
Collected By: CST
Date Received: 06/14/96 10:40
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
1,2-Dichloroethane	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
1,2-Dichloropropane	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	12	1	8260	06/26	23705
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	60	1	8260	06/26	23705
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	12	1	8260	06/26	23705
2-Hexanone	BDL	UG/KG-DW	60	1	8260	06/26	23705
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	60	1	8260	06/26	23705
Acetone	120	UG/KG-DW	60	1	8260	06/26	23705
Acrolein	BDL	UG/KG-DW	240	1	8260	06/26	23705
Acrylonitrile	BDL	UG/KG-DW	120	1	8260	06/26	23705
Benzene	75	UG/KG-DW	60	10	8260	06/27	23705
Bromodichloromethane	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Bromoform	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Bromomethane	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Carbon tetrachloride	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Chloroform	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Chlorobenzene	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Chloroethane	BDL	UG/KG-DW	12	1	8260	06/26	23705
Chloromethane	BDL	UG/KG-DW	12	1	8260	06/26	23705
Carbon disulfide	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Dichlorodifluoromethane	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Dibromochloromethane	BDL	UG/KG-DW	12	1	8260	06/26	23705
Dibromomethane	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Ethylbenzene	430	UG/KG-DW	60	10	8260	06/27	23705
Ethyl methacrylate	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Iodomethane	BDL	UG/KG-DW	6.0	1	8260	06/26	23705

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
Suite 115
Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960613-CO-05-SL0005 (1-3), Birmingham, AL

ab ID: 96 0006589

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FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	110	UG/KG-DW	60	10	8260	06/27	23705
Methylene chloride	8.2	UG/KG-DW	6.0	1	8260	06/26	23705
o-Xylene	370	UG/KG-DW	60	10	8260	06/27	23705
Styrene	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Trichloroethene	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Trichlorofluoromethane	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Tetrachloroethene	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Toluene	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.0	1	8260	06/26	23705
Vinyl acetate	BDL	UG/KG-DW	12	1	8260	06/26	23705
Vinyl chloride	BDL	UG/KG-DW	12	1	8260	06/26	23705
ET CHEM							
CHEMICAL							
Cyanide, Total	1	MG/KG-DW	1	1	9012	06/25	23268
PHYSICAL							
Percent Solids	83	%	4	1	160.3	06/18	23105

OMMENTS

01 Results for semivolatile organics by method 8270 should be considered estimates due to low recovery of 1,4-dichlorobenzene and 1,2,4-trichlorobenzene.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number

02 QCRS recovery for acenaphthene was low also. Surrogate recoveries were within control limits as was calibration.

03 Results for 1,4-dichloro-2-butene, 2-hexanone 1,2-dibromoethane, iodomethane, vinyl acetate and styrene should be considered estimates due to low recovery in QCRS sample

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Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.2	1	6010	06/24	23202
Arsenic, Total	7	MG/KG-DW	1	10	6020	06/25	23225
Barium, Total	130	MG/KG-DW	1.2	1	6010	06/24	23202
Beryllium, Total	2.0	MG/KG-DW	0.58	1	6010	06/24	23202
Cadmium, Total	BDL	MG/KG-DW	5.8	1	6010	06/24	23202
Chromium, Total	28	MG/KG-DW	5.8	1	6010	06/24	23202
Copper, Total	BDL	MG/KG-DW	2.9	1	6010	06/24	23202
Mercury, Total	0.15	MG/KG-DW	0.051	1	7471	06/24	23194
Nickel, Total	BDL	MG/KG-DW	4.6	1	6010	06/24	23202
Lead, Total	12	MG/KG-DW	5.8	1	6010	06/24	23202
Antimony, Total	BDL	MG/KG-DW	5.8	1	6010	06/24	23202
Selenium, Total	BDL	MG/KG-DW	58	1	6010	06/24	23202
Thallium, Total	BDL	MG/KG-DW	58	1	6010	06/24	23202
Zinc, Total	26	MG/KG-DW	2.3	1	6010	06/24	23202
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
1,2-Dichlorobenzene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
1,3-Dichlorobenzene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
1,4-Dichlorobenzene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	99000	50	8270	07/20	23673
2,4,5-Trichlorophenol	BDL	UG/KG-DW	99000	50	8270	07/20	23673
2,4,6-Trichlorophenol	BDL	UG/KG-DW	19000	50	8270	07/20	23673
2,4-Dinitrophenol	BDL	UG/KG-DW	99000	50	8270	07/20	23673
2,4-Dinitrotoluene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
2,6-Dichlorophenol	BDL	UG/KG-DW	19000	50	8270	07/20	23673
2,6-Dinitrotoluene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
2-Chloronaphthalene	BDL	UG/KG-DW	19000	50	8270	07/20	23673

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	19000	50	8270	07/20	23673
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	19000	50	8270	07/20	23673
2-Methylnaphthalene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	19000	50	8270	07/20	23673
2-Nitroaniline	BDL	UG/KG-DW	99000	50	8270	07/20	23673
2-Nitrophenol	BDL	UG/KG-DW	19000	50	8270	07/20	23673
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	19000	50	8270	07/20	23673
3-Nitroaniline	BDL	UG/KG-DW	100000	50	8270	07/20	23673
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	100000	50	8270	07/20	23673
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	19000	50	8270	07/20	23673
4-Chloro-3-methylphenol	BDL	UG/KG-DW	19000	50	8270	07/20	23673
4-Chloroaniline	BDL	UG/KG-DW	38000	50	8270	07/20	23673
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	19000	50	8270	07/20	23673
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	19000	50	8270	07/20	23673
4-Nitroaniline	BDL	UG/KG-DW	99000	50	8270	07/20	23673
4-Nitrophenol	BDL	UG/KG-DW	99000	50	8270	07/20	23673
Acenaphthene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Acenaphthylene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Anthracene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Benzyl alcohol	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Benzo(a)anthracene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Benzo(a)pyrene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Benzo (b) fluoranthene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Benzo (k) fluoranthene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Benzo (g,h,i) perylene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Chrysene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	19000	50	8270	07/20	23673
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Dibenzofuran	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	19000	50	8270	07/20	23673

lote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

Attention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

Cust Proj: TF0320.014
Sample Desc: 960613-CO-05-SL0004 (1-3), Birmingham, AL

Lab ID: 96 0006590

Date of Report: 07/26/96
C-of-C Number: C14844
Date Collected: 06/13/96 08:25
Collected By: CST
Date Received: 06/14/96 10:40
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	19000	50	8270	07/20	23673
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	99000	50	8270	07/20	23673
2,4-Dichlorophenol	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Diethylphthalate	BDL	UG/KG-DW	19000	50	8270	07/20	23673
2,4-Dimethylphenol	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Dimethylphthalate	BDL	UG/KG-DW	19000	50	8270	07/20	23673
n-Nitrosodimethylamine	BDL	UG/KG-DW	19000	50	8270	07/20	23673
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Di-n-octylphthalate	BDL	UG/KG-DW	19000	50	8270	07/20	23673
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Fluorene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Fluoranthene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Hexachlorocyclopentadiene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Hexachlorobutadiene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Hexachlorobenzene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Hexachloroethane	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Isophorone	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Naphthalene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Nitrobenzene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Pentachlorophenol	BDL	UG/KG-DW	99000	50	8270	07/20	23673
Phenol	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Phenanthrene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Pyrene	BDL	UG/KG-DW	19000	50	8270	07/20	23673
Pyridine	BDL	UG/KG-DW	19000	50	8270	07/20	23673
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.58	1	8260	06/26	23705
1,1,2-Trichloroethane	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
1,1-Dichloroethane	BDL	UG/KG-DW	5.8	1	8260	06/26	23705

000496

Note 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

Distribution of Report:
Charles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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ab ID: 96 0006590

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
1,2,3-Trichloropropane	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
1,2-Dichloroethane	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
1,2-Dichloropropane	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	12	1	8260	06/26	23705
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	58	1	8260	06/26	23705
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	12	1	8260	06/26	23705
2-Hexanone	BDL	UG/KG-DW	58	1	8260	06/26	23705
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	58	1	8260	06/26	23705
Acetone	BDL	UG/KG-DW	58	1	8260	06/26	23705
Acrolein	BDL	UG/KG-DW	230	1	8260	06/26	23705
Acrylonitrile	BDL	UG/KG-DW	120	1	8260	06/26	23705
Benzene	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Bromodichloromethane	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Bromoform	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Bromomethane	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Carbon tetrachloride	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Chloroform	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Chlorobenzene	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Chloroethane	BDL	UG/KG-DW	12	1	8260	06/26	23705
Chloromethane	BDL	UG/KG-DW	12	1	8260	06/26	23705
Carbon disulfide	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
cis-1,3-Dichloropropene	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Dichlorodifluoromethane	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Dibromochloromethane	BDL	UG/KG-DW	12	1	8260	06/26	23705
Dibromomethane	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Ethylbenzene	57	UG/KG-DW	5.8	1	8260	06/26	23705
Ethyl methacrylate	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Iodomethane	BDL	UG/KG-DW	5.8	1	8260	06/26	23705

0004597

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960613-CO-05-SL0004 (1-3), Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14844
Date Collected: 06/13/96 08:25
Collected By: CST
Date Received: 06/14/96 10:40
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006590

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	370	UG/KG-DW	29	5	8260	06/27	23705
Methylene chloride	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
o-Xylene	350	UG/KG-DW	29	5	8260	06/27	23705
Styrene	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Trichloroethene	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Trichlorofluoromethane	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Tetrachloroethene	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Toluene	16	UG/KG-DW	5.8	1	8260	06/26	23705
trans-1,2-Dichloroethene	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
trans-1,3-Dichloropropene	BDL	UG/KG-DW	5.8	1	8260	06/26	23705
Vinyl acetate	BDL	UG/KG-DW	12	1	8260	06/26	23705
Vinyl chloride	BDL	UG/KG-DW	12	1	8260	06/26	23705
ET CHEM							
CHEMICAL							
Cyanide, Total	7	MG/KG-DW	1	1	9012	06/25	23268
PHYSICAL							
Percent Solids	86	%	4	1	160.3	06/18	23105

OMMENTS

01 Naphthalene concentration estimated to be 15,000 UG/KG.

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
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FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006590

		Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
02	Results for 1,4-dichloro-2-butene, 2-hexanone 1,2-dibromoethane, iodomethane, vinyl acetate and styrene should be considered estimates due to low recovery in QCRS sample							

000459

lote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960613-CO-05-SL0005 (5-7) MS/MSD, Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14844
Date Collected: 06/13/96 13:30
Collected By: CST
Date Received: 06/14/96 10:40
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006591

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.3	1	6010	06/24	23202
Arsenic, Total	8	MG/KG-DW	1	10	6020	06/25	23225
Barium, Total	88	MG/KG-DW	1.3	1	6010	06/24	23202
Beryllium, Total	3.6	MG/KG-DW	0.66	1	6010	06/24	23202
Cadmium, Total	BDL	MG/KG-DW	6.6	1	6010	06/24	23202
Chromium, Total	30	MG/KG-DW	6.6	1	6010	06/24	23202
Copper, Total	3.8	MG/KG-DW	3.3	1	6010	06/24	23202
Mercury, Total	0.14	MG/KG-DW	0.058	1	7471	06/24	23194
Nickel, Total	10	MG/KG-DW	5	1	6010	06/24	23202
Lead, Total	10	MG/KG-DW	6	1	6010	06/24	23202
Antimony, Total	BDL	MG/KG-DW	6.6	1	6010	06/24	23202
Selenium, Total	BDL	MG/KG-DW	66	1	6010	06/24	23202
Thallium, Total	BDL	MG/KG-DW	66	1	6010	06/24	23202
Zinc, Total	25	MG/KG-DW	2.6	1	6010	06/24	23202
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23673
1,2-Dichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23673
1,3-Dichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23673
1,4-Dichlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23673
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23673
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23673
2,4,6-Trichlorophenol	BDL	UG/KG-DW	430	1	8270	07/16	23673
2,4-Dinitrophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23673
2,4-Dinitrotoluene	BDL	UG/KG-DW	430	1	8270	07/16	23673
2,6-Dichlorophenol	BDL	UG/KG-DW	430	1	8270	07/16	23673
2,6-Dinitrotoluene	BDL	UG/KG-DW	430	1	8270	07/16	23673
2-Chloronaphthalene	BDL	UG/KG-DW	430	1	8270	07/16	23673

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
Suite 115
Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960613-CO-05-SL0005 (5-7) MS/MSD, Birmingham, AL

Date of Report: 07/26/96
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FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006591

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	430	1	8270	07/16	23673
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	430	1	8270	07/16	23673
2-Methylnaphthalene	7400	UG/KG-DW	430	1	8270	07/16	23673
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	430	1	8270	07/16	23673
2-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/16	23673
2-Nitrophenol	BDL	UG/KG-DW	430	1	8270	07/16	23673
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	430	1	8270	07/16	23673
3-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/16	23673
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2200	1	8270	07/16	23673
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	430	1	8270	07/16	23673
4-Chloro-3-methylphenol	BDL	UG/KG-DW	430	1	8270	07/16	23673
4-Chloroaniline	BDL	UG/KG-DW	870	1	8270	07/16	23673
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	430	1	8270	07/16	23673
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	430	1	8270	07/16	23673
4-Nitroaniline	BDL	UG/KG-DW	2200	1	8270	07/16	23673
4-Nitrophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23673
Acenaphthene	7100	UG/KG-DW	430	1	8270	07/16	23673
Acenaphthylene	450	UG/KG-DW	430	1	8270	07/16	23673
Anthracene	BDL	UG/KG-DW	22000	50	8270	07/20	23673
Benzyl alcohol	BDL	UG/KG-DW	430	1	8270	07/16	23673
Benzo(a)anthracene	BDL	UG/KG-DW	22000	50	8270	07/20	23673
Benzo(a)pyrene	7800	UG/KG-DW	430	1	8270	07/16	23673
Benzo (b) fluoranthene	6800	UG/KG-DW	430	1	8270	07/16	23673
Benzo (k) fluoranthene	1600	UG/KG-DW	430	1	8270	07/16	23673
Benzo (g,h,i) perylene	3300	UG/KG-DW	430	1	8270	07/16	23673
Chrysene	7600	UG/KG-DW	430	1	8270	07/16	23673
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	430	1	8270	07/16	23673
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	430	1	8270	07/16	23673
Dibenzofuran	7200	UG/KG-DW	430	1	8270	07/16	23673
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	430	1	8270	07/16	23673

0005001

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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14497 North Dale Mabry
Suite 115
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ust Proj: TF0320.014
ample Desc: 960613-CO-05-SL0005 (5-7) MS/MSD, Birmingham, AL

Date of Report: 07/26/96
C-of-C Number: C14844
Date Collected: 06/13/96 13:30
Collected By: CST
Date Received: 06/14/96 10:40
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

ab ID: 96 0006591

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	430	1	8270	07/16	23673
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2200	1	8270	07/16	23673
2,4-Dichlorophenol	BDL	UG/KG-DW	430	1	8270	07/16	23673
Diethylphthalate	BDL	UG/KG-DW	430	1	8270	07/16	23673
2,4-Dimethylphenol	BDL	UG/KG-DW	430	1	8270	07/16	23673
Dimethylphthalate	BDL	UG/KG-DW	430	1	8270	07/16	23673
n-Nitrosodimethylamine	BDL	UG/KG-DW	430	1	8270	07/16	23673
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	430	1	8270	07/16	23673
Di-n-octylphthalate	BDL	UG/KG-DW	430	1	8270	07/16	23673
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	430	1	8270	07/16	23673
Fluorene	22000	UG/KG-DW	22000	50	8270	07/20	23673
Fluoranthene	82000	UG/KG-DW	22000	50	8270	07/20	23673
Hexachlorocyclopentadiene	BDL	UG/KG-DW	430	1	8270	07/16	23673
Hexachlorobutadiene	BDL	UG/KG-DW	430	1	8270	07/16	23673
Hexachlorobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23673
Hexachloroethane	BDL	UG/KG-DW	430	1	8270	07/16	23673
Indeno(1,2,3-cd)pyrene	7900	UG/KG-DW	430	1	8270	07/16	23673
Isophorone	BDL	UG/KG-DW	430	1	8270	07/16	23673
Naphthalene	51000	UG/KG-DW	22000	50	8270	07/20	23673
Nitrobenzene	BDL	UG/KG-DW	430	1	8270	07/16	23673
Pentachlorophenol	BDL	UG/KG-DW	2200	1	8270	07/16	23673
Phenol	BDL	UG/KG-DW	430	1	8270	07/16	23673
Phenanthrene	58000	UG/KG-DW	22000	50	8270	07/20	23673
Pyrene	22000	UG/KG-DW	22000	50	8270	07/20	23673
Pyridine	BDL	UG/KG-DW	430	1	8270	07/16	23673
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
1,1,2,2-Tetrachloroethane	2.1	UG/KG-DW	0.66	1	8260	06/26	23705
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
1,1-Dichloroethane	BDL	UG/KG-DW	6.6	1	8260	06/26	23705

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

000502

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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618

ast Proj: TF0320.014
ample Desc: 960613-CO-05-SL0005 (5-7) MS/MSD, Birmingham, AL

ab ID: 96 0006591

Date of Report: 07/28/96
C-of-C Number: C14844
Date Collected: 06/13/96 13:30
Collected By: CST
Date Received: 06/14/96 10:40
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
1,2-Dichloroethane	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
1,2-Dichloropropane	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	13	1	8260	06/26	23705
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	66	1	8260	06/26	23705
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	13	1	8260	06/26	23705
2-Hexanone	BDL	UG/KG-DW	66	1	8260	06/26	23705
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	66	1	8260	06/26	23705
Acetone	BDL	UG/KG-DW	66	1	8260	06/26	23705
Acrolein	BDL	UG/KG-DW	260	1	8260	06/26	23705
Acrylonitrile	BDL	UG/KG-DW	130	1	8260	06/26	23705
Benzene	42	UG/KG-DW	6.6	1	8260	06/26	23705
Bromodichloromethane	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Bromoform	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Bromomethane	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Carbon tetrachloride	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Chloroform	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Chlorobenzene	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Chloroethane	BDL	UG/KG-DW	13	1	8260	06/26	23705
Chloromethane	BDL	UG/KG-DW	13	1	8260	06/26	23705
Carbon disulfide	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Dichlorodifluoromethane	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Dibromochloromethane	BDL	UG/KG-DW	13	1	8260	06/26	23705
Dibromomethane	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Ethylbenzene	18	UG/KG-DW	6.6	1	8260	06/26	23705
Ethyl methacrylate	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Iodomethane	BDL	UG/KG-DW	6.6	1	8260	06/26	23705

0000503

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

Attention: Kathy Thalman
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14497 North Dale Mabry
Suite 115
Tampa FL 33618
Cust Proj: TF0320.014
Sample Desc: 960613-CO-05-SL0005 (5-7) MS/MSD, Birmingham, AL

Lab ID: 96 0006591

Date of Report: 07/26/96
C-of-C Number: C14844
Date Collected: 06/13/96 13:30
Collected By: CST
Date Received: 06/14/96 10:40
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	10	UG/KG-DW	6	1	8260	06/26	23705
Methylene chloride	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
o-Xylene	16	UG/KG-DW	6.6	1	8260	06/26	23705
Styrene	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Trichloroethene	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Trichlorofluoromethane	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Tetrachloroethene	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Toluene	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.6	1	8260	06/26	23705
Vinyl acetate	BDL	UG/KG-DW	13	1	8260	06/26	23705
Vinyl chloride	BDL	UG/KG-DW	13	1	8260	06/26	23705
WET CHEM							
CHEMICAL							
Cyanide, Total	BDL	MG/KG-DW	1.3	1	9012	06/21	23193
PHYSICAL							
Percent Solids	76	%	4	1	160.3	06/18	23105

0006591

COMMENTS

01 Results for 1,4-dichloro-2-butene, 2-hexanone 1,2-dibromoethane, iodomethane, vinyl acetate and styrene should be considered estimates due to low recovery in QCRS sample

Note 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

Distribution of Report:
Charles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
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Center For Applied Engineering, Inc.
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ANALYSIS REPORT

ttention: Kathy Thalman
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Suite 115
Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960613-CO-01B-SL0004 (8-10), Birmingham, AL

ab ID: 96 0006592

Date of Report: 07/26/96
C-of-C Number: C14844
Date Collected: 06/13/96 15:50
Collected By: CST
Date Received: 06/14/96 10:40
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	2	MG/KG-DW	1	1	6010	06/24	23202
Arsenic, Total	9	MG/KG-DW	1	10	6020	06/25	23225
Barium, Total	30	MG/KG-DW	1.2	1	6010	06/24	23202
Beryllium, Total	1	MG/KG-DW	0.6	1	6010	06/24	23202
Cadmium, Total	BDL	MG/KG-DW	6.2	1	6010	06/24	23202
Chromium, Total	42	MG/KG-DW	6.2	1	6010	06/24	23202
Copper, Total	32000	MG/KG-DW	160	50	6010	06/24	23202
Mercury, Total	0.19	MG/KG-DW	0.055	1	7471	06/24	23194
Nickel, Total	44	MG/KG-DW	5.0	1	6010	06/24	23202
Lead, Total	1200	MG/KG-DW	6.2	1	6010	06/24	23202
Antimony, Total	BDL	MG/KG-DW	6.2	1	6010	06/24	23202
Selenium, Total	BDL	MG/KG-DW	62	1	6010	06/24	23202
Thallium, Total	BDL	MG/KG-DW	62	1	6010	06/24	23202
Zinc, Total	1100	MG/KG-DW	120	50	6010	06/24	23202
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/15	23673
1,2-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/15	23673
1,3-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/15	23673
1,4-Dichlorobenzene	BDL	UG/KG-DW	410	1	8270	07/15	23673
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/15	23673
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2100	1	8270	07/15	23673
2,4,6-Trichlorophenol	BDL	UG/KG-DW	410	1	8270	07/15	23673
2,4-Dinitrophenol	BDL	UG/KG-DW	2100	1	8270	07/15	23673
2,4-Dinitrotoluene	BDL	UG/KG-DW	410	1	8270	07/15	23673
2,6-Dichlorophenol	BDL	UG/KG-DW	410	1	8270	07/15	23673
2,6-Dinitrotoluene	BDL	UG/KG-DW	410	1	8270	07/15	23673
2-Chloronaphthalene	BDL	UG/KG-DW	410	1	8270	07/15	23673

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
Geraghty & Miller, Tampa, FL
14497 North Dale Mabry
Suite 115
Tampa FL 33618
ust Proj: TF0320.014
ample Desc: 960613-CO-01B-SL0004 (8-10), Birmingham, AL

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FL-DEP CompQAP: 900359G

ab ID: 96 0006592

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	410	1	8270	07/15	23673
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	410	1	8270	07/15	23673
2-Methylnaphthalene	BDL	UG/KG-DW	410	1	8270	07/15	23673
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	410	1	8270	07/15	23673
2-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/15	23673
2-Nitrophenol	BDL	UG/KG-DW	410	1	8270	07/15	23673
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	410	1	8270	07/15	23673
3-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/15	23673
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2100	1	8270	07/15	23673
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	410	1	8270	07/15	23673
4-Chloro-3-methylphenol	BDL	UG/KG-DW	410	1	8270	07/15	23673
4-Chloroaniline	BDL	UG/KG-DW	820	1	8270	07/15	23673
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	410	1	8270	07/15	23673
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	410	1	8270	07/15	23673
4-Nitroaniline	BDL	UG/KG-DW	2100	1	8270	07/15	23673
4-Nitrophenol	BDL	UG/KG-DW	2100	1	8270	07/15	23673
Acenaphthene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Acenaphthylene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Anthracene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Benzyl alcohol	BDL	UG/KG-DW	410	1	8270	07/15	23673
Benzo(a)anthracene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Benzo(a)pyrene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Benzo (b) fluoranthene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Benzo (k) fluoranthene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Benzo (g,h,i) perylene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Chrysene	BDL	UG/KG-DW	410	1	8270	07/15	23673
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	410	1	8270	07/15	23673
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	410	1	8270	07/15	23673
Dibenzofuran	BDL	UG/KG-DW	410	1	8270	07/15	23673
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	410	1	8270	07/15	23673

900359G

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Unit followed by 'DW' signifies Results in Dry Weight.

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	410	1	8270	07/15	23673
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2100	1	8270	07/15	23673
2,4-Dichlorophenol	BDL	UG/KG-DW	410	1	8270	07/15	23673
Diethylphthalate	BDL	UG/KG-DW	410	1	8270	07/15	23673
2,4-Dimethylphenol	BDL	UG/KG-DW	410	1	8270	07/15	23673
Dimethylphthalate	BDL	UG/KG-DW	410	1	8270	07/15	23673
n-Nitrosodimethylamine	BDL	UG/KG-DW	410	1	8270	07/15	23673
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	410	1	8270	07/15	23673
Di-n-octylphthalate	BDL	UG/KG-DW	410	1	8270	07/15	23673
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	410	1	8270	07/15	23673
Fluorene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Fluoranthene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Hexachlorocyclopentadiene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Hexachlorobutadiene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Hexachlorobenzene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Hexachloroethane	BDL	UG/KG-DW	410	1	8270	07/15	23673
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Isophorone	BDL	UG/KG-DW	410	1	8270	07/15	23673
Naphthalene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Nitrobenzene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Pentachlorophenol	BDL	UG/KG-DW	2100	1	8270	07/15	23673
Phenol	BDL	UG/KG-DW	410	1	8270	07/15	23673
Phenanthrene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Pyrene	BDL	UG/KG-DW	410	1	8270	07/15	23673
Pyridine	BDL	UG/KG-DW	410	1	8270	07/15	23673
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.62	1	8260	06/27	23705
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
1,1-Dichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/27	23705

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Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
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Chris Given
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Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
1,2-Dichloroethane	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
1,2-Dichloropropane	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	12	1	8260	06/27	23705
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	62	1	8260	06/27	23705
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	12	1	8260	06/27	23705
2-Hexanone	BDL	UG/KG-DW	62	1	8260	06/27	23705
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	62	1	8260	06/27	23705
Acetone	BDL	UG/KG-DW	62	1	8260	06/27	23705
Acrolein	BDL	UG/KG-DW	250	1	8260	06/27	23705
Acrylonitrile	BDL	UG/KG-DW	120	1	8260	06/27	23705
Benzene	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Bromodichloromethane	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Bromoform	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Bromomethane	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Carbon tetrachloride	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Chloroform	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Chlorobenzene	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Chloroethane	BDL	UG/KG-DW	12	1	8260	06/27	23705
Chloromethane	BDL	UG/KG-DW	12	1	8260	06/27	23705
Carbon disulfide	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Dichlorodifluoromethane	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Dibromochloromethane	BDL	UG/KG-DW	12	1	8260	06/27	23705
Dibromomethane	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Ethylbenzene	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Ethyl methacrylate	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Iodomethane	BDL	UG/KG-DW	6.2	1	8260	06/27	23705

000508

te 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

stribution of Report:
arles A. Jones - Sloss Industries

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Chris Given
Laboratory Director

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Environmental Testing Services

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ab ID: 96 0006592

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Methylene chloride	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
o-Xylene	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Styrene	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Trichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Trichlorofluoromethane	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Tetrachloroethene	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Toluene	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.2	1	8260	06/27	23705
Vinyl acetate	BDL	UG/KG-DW	12	1	8260	06/27	23705
Vinyl chloride	BDL	UG/KG-DW	12	1	8260	06/27	23705
ET CHEM							
CHEMICAL							
Cyanide, Total	2	MG/KG-DW	1	1	9012	06/25	23268
PHYSICAL							
Percent Solids	80	%	.1	1	160.3	06/19	23126

0006592

OMMENTS

01 Results for 1,4-dichloro-2-butene, 2-hexanone 1,2-dibromoethane, iodomethane, vinyl acetate and styrene should be considered estimates due to low recovery in QCRS sample

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.4	1	6010	06/24	23202
Arsenic, Total	10	MG/KG-DW	1	10	6020	06/25	23225
Barium, Total	18	MG/KG-DW	1.4	1	6010	06/24	23202
Beryllium, Total	1	MG/KG-DW	0.7	1	6010	06/24	23202
Cadmium, Total	BDL	MG/KG-DW	6.8	1	6010	06/24	23202
Chromium, Total	55	MG/KG-DW	6.8	1	6010	06/24	23202
Copper, Total	30	MG/KG-DW	3.4	1	6010	06/24	23202
Mercury, Total	0.23	MG/KG-DW	0.060	1	7471	06/24	23194
Nickel, Total	18	MG/KG-DW	5.5	1	6010	06/24	23202
Lead, Total	8	MG/KG-DW	7	1	6010	06/24	23202
Antimony, Total	BDL	MG/KG-DW	6.8	1	6010	06/24	23202
Selenium, Total	BDL	MG/KG-DW	68	1	6010	06/24	23202
Thallium, Total	BDL	MG/KG-DW	68	1	6010	06/24	23202
Zinc, Total	51	MG/KG-DW	2.7	1	6010	06/24	23202
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	450	1	8270	07/16	23673
1,2-Dichlorobenzene	BDL	UG/KG-DW	450	1	8270	07/16	23673
1,3-Dichlorobenzene	BDL	UG/KG-DW	450	1	8270	07/16	23673
1,4-Dichlorobenzene	BDL	UG/KG-DW	450	1	8270	07/16	23673
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2300	1	8270	07/16	23673
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2300	1	8270	07/16	23673
2,4,6-Trichlorophenol	BDL	UG/KG-DW	450	1	8270	07/16	23673
2,4-Dinitrophenol	BDL	UG/KG-DW	2300	1	8270	07/16	23673
2,4-Dinitrotoluene	BDL	UG/KG-DW	450	1	8270	07/16	23673
2,6-Dichlorophenol	BDL	UG/KG-DW	450	1	8270	07/16	23673
2,6-Dinitrotoluene	BDL	UG/KG-DW	450	1	8270	07/16	23673
2-Chloronaphthalene	BDL	UG/KG-DW	450	1	8270	07/16	23673

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0005 10

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
2-Chlorophenol	BDL	UG/KG-DW	450	1	8270	07/16	23673
bis-(2-Ethylhexyl) phthalate	BDL	UG/KG-DW	450	1	8270	07/16	23673
2-Methylnaphthalene	BDL	UG/KG-DW	450	1	8270	07/16	23673
2-Methylphenol (o-Cresol)	BDL	UG/KG-DW	450	1	8270	07/16	23673
2-Nitroaniline	BDL	UG/KG-DW	2300	1	8270	07/16	23673
2-Nitrophenol	BDL	UG/KG-DW	450	1	8270	07/16	23673
3-Methylphenol (m-Cresol)	BDL	UG/KG-DW	450	1	8270	07/16	23673
3-Nitroaniline	BDL	UG/KG-DW	2300	1	8270	07/16	23673
4,6-Dinitro-2-methylphenol	BDL	UG/KG-DW	2300	1	8270	07/16	23673
4-Bromophenyl phenyl ether	BDL	UG/KG-DW	450	1	8270	07/16	23673
4-Chloro-3-methylphenol	BDL	UG/KG-DW	450	1	8270	07/16	23673
4-Chloroaniline	BDL	UG/KG-DW	900	1	8270	07/16	23673
4-Chlorophenyl phenyl ether	BDL	UG/KG-DW	450	1	8270	07/16	23673
4-Methylphenol (p-Cresol)	BDL	UG/KG-DW	450	1	8270	07/16	23673
4-Nitroaniline	BDL	UG/KG-DW	2300	1	8270	07/16	23673
4-Nitrophenol	BDL	UG/KG-DW	2300	1	8270	07/16	23673
Acenaphthene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Acenaphthylene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Anthracene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Benzyl alcohol	BDL	UG/KG-DW	450	1	8270	07/16	23673
Benzo(a)anthracene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Benzo(a)pyrene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Benzo (b) fluoranthene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Benzo (k) fluoranthene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Benzo (g,h,i) perylene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Chrysene	BDL	UG/KG-DW	450	1	8270	07/16	23673
bis-(2-Chloroethyl) ether	BDL	UG/KG-DW	450	1	8270	07/16	23673
bis-(2-Chloroisopropyl) ether	BDL	UG/KG-DW	450	1	8270	07/16	23673
Dibenzofuran	BDL	UG/KG-DW	450	1	8270	07/16	23673
Dibenzo (a,h) anthracene	BDL	UG/KG-DW	450	1	8270	07/16	23673

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
Di-n-butylphthalate	BDL	UG/KG-DW	450	1	8270	07/16	23673
3,3'-Dichlorobenzidine	BDL	UG/KG-DW	2300	1	8270	07/16	23673
2,4-Dichlorophenol	BDL	UG/KG-DW	450	1	8270	07/16	23673
Diethylphthalate	BDL	UG/KG-DW	450	1	8270	07/16	23673
2,4-Dimethylphenol	BDL	UG/KG-DW	450	1	8270	07/16	23673
Dimethylphthalate	BDL	UG/KG-DW	450	1	8270	07/16	23673
n-Nitrosodimethylamine	BDL	UG/KG-DW	450	1	8270	07/16	23673
n-Nitroso-di-n-propylamine	BDL	UG/KG-DW	450	1	8270	07/16	23673
Di-n-octylphthalate	BDL	UG/KG-DW	450	1	8270	07/16	23673
bis-(2-Chloroethoxy) methane	BDL	UG/KG-DW	450	1	8270	07/16	23673
Fluorene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Fluoranthene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Hexachlorocyclopentadiene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Hexachlorobutadiene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Hexachlorobenzene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Hexachloroethane	BDL	UG/KG-DW	450	1	8270	07/16	23673
Indeno(1,2,3-cd)pyrene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Isophorone	BDL	UG/KG-DW	450	1	8270	07/16	23673
Naphthalene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Nitrobenzene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Pentachlorophenol	BDL	UG/KG-DW	2300	1	8270	07/16	23673
Phenol	BDL	UG/KG-DW	450	1	8270	07/16	23673
Phenanthrene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Pyrene	BDL	UG/KG-DW	450	1	8270	07/16	23673
Pyridine	BDL	UG/KG-DW	450	1	8270	07/16	23673
VOLATILES-GC/MS							
1,1,1-Trichloroethane	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
1,1,2,2-Tetrachloroethane	BDL	UG/KG-DW	0.68	1	8260	06/27	23379
1,1,2-Trichloroethane	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
1,1-Dichloroethane	BDL	UG/KG-DW	6.8	1	8260	06/27	23379

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

istribution of Report:
harles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
Reviewed and Approved by:

Chris Given
Laboratory Director

Center For Applied Engineering, Inc.
Environmental Testing Services

ANALYSIS REPORT

ttention: Kathy Thalman
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Tampa FL 33618

ast Proj: TF0320.014
ample Desc: 960613-CO-01B-SL0004 (4-6), Birmingham, AL

ab ID: 96 0006593

Date of Report: 07/26/96
C-of-C Number: C14844
Date Collected: 06/13/96 15:30
Collected By: CST
Date Received: 06/14/96 10:40
FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
1,1-Dichloroethene	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
1,2,3-Trichloropropane	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
1,2-Dichloroethane	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
1,2-Dichloropropane	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
1,4-Dichloro-2-Butene	BDL	UG/KG-DW	14	1	8260	06/27	23379
2-Butanone (Methyl ethyl ketone)	BDL	UG/KG-DW	68	1	8260	06/27	23379
2-Chloroethyl vinyl ether	BDL	UG/KG-DW	14	1	8260	06/27	23379
2-Hexanone	BDL	UG/KG-DW	68	1	8260	06/27	23379
4-Methyl-2-pentanone (MIBK)	BDL	UG/KG-DW	68	1	8260	06/27	23379
Acetone	BDL	UG/KG-DW	68	1	8260	06/27	23379
Acrolein	BDL	UG/KG-DW	270	1	8260	06/27	23379
Acrylonitrile	BDL	UG/KG-DW	140	1	8260	06/27	23379
Benzene	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Bromodichloromethane	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Bromoform	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Bromomethane	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Carbon tetrachloride	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Chloroform	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Chlorobenzene	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Chloroethane	BDL	UG/KG-DW	14	1	8260	06/27	23379
Chloromethane	BDL	UG/KG-DW	14	1	8260	06/27	23379
Carbon disulfide	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
cis-1,3-Dichloropropene	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Dichlorodifluoromethane	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Dibromochloromethane	BDL	UG/KG-DW	14	1	8260	06/27	23379
Dibromomethane	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
1,2-Dibromoethane (EDB)	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Ethylbenzene	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Ethyl methacrylate	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Iodomethane	BDL	UG/KG-DW	6.8	1	8260	06/27	23379

0005113

ote 'BDL' = Below Detection Limit
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istribution of Report:
harles A. Jones - Sloss Industries

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	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
m- and p-Xylenes	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Methylene chloride	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
o-Xylene	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Styrene	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Trichloroethene	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Trichlorofluoromethane	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Tetrachloroethene	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Toluene	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
trans-1,2-Dichloroethene	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
trans-1,3-Dichloropropene	BDL	UG/KG-DW	6.8	1	8260	06/27	23379
Vinyl acetate	BDL	UG/KG-DW	14	1	8260	06/27	23379
Vinyl chloride	BDL	UG/KG-DW	14	1	8260	06/27	23379
WET CHEM							
CHEMICAL							
Cyanide, Total	3	MG/KG-DW	1	1	9012	06/27	23270
PHYSICAL							
Percent Solids	73	%	.1	1	160.3	06/19	23126

0005144

COMMENTS

01 Results for 1,4-dichloro-2-butene, 2-hexanone 1,2-dibromoethane, iodomethane, vinyl acetate and styrene should be considered estimates due to low recovery in QCRS sample

Note 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

Distribution of Report:
Charles A. Jones - Sloss Industries

Respectfully Submitted
Center For Applied Eng., Inc.
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ANALYSIS REPORT

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FL-DHRS Cert. No: E84254/84453
FL-DEP CompQAP: 900359G

	Result	Unit	Det. Limit	Dilutn Factor	Procedure	Test Date	QC Number
ETALS							
TOTAL							
Silver, Total	BDL	MG/KG-DW	1.4	1	6010	06/24	23202
Arsenic, Total	9	MG/KG-DW	1	10	6020	06/25	23225
Barium, Total	93	MG/KG-DW	1.4	1	6010	06/24	23202
Beryllium, Total	3.8	MG/KG-DW	0.68	1	6010	06/24	23202
Cadmium, Total	BDL	MG/KG-DW	6.8	1	6010	06/24	23202
Chromium, Total	27	MG/KG-DW	6.8	1	6010	06/24	23202
Copper, Total	16	MG/KG-DW	3.4	1	6010	06/24	23202
Mercury, Total	0.50	MG/KG-DW	0.059	1	7471	06/24	23194
Nickel, Total	28	MG/KG-DW	5.4	1	6010	06/24	23202
Lead, Total	20	MG/KG-DW	6.8	1	6010	06/24	23202
Antimony, Total	BDL	MG/KG-DW	6.8	1	6010	06/24	23202
Selenium, Total	BDL	MG/KG-DW	68	1	6010	06/24	23202
Thallium, Total	BDL	MG/KG-DW	68	1	6010	06/24	23202
Zinc, Total	260	MG/KG-DW	2.7	1	6010	06/24	23202
RGANIC							
SEMI-VOL-GC/MS							
1,2,4-Trichlorobenzene	BDL	UG/KG-DW	440	1	8270	07/20	23673
1,2-Dichlorobenzene	BDL	UG/KG-DW	440	1	8270	07/20	23673
1,3-Dichlorobenzene	BDL	UG/KG-DW	440	1	8270	07/20	23673
1,4-Dichlorobenzene	BDL	UG/KG-DW	440	1	8270	07/20	23673
2,3,4,6-tetrachlorophenol	BDL	UG/KG-DW	2300	1	8270	07/20	23673
2,4,5-Trichlorophenol	BDL	UG/KG-DW	2300	1	8270	07/20	23673
2,4,6-Trichlorophenol	BDL	UG/KG-DW	440	1	8270	07/20	23673
2,4-Dinitrophenol	BDL	UG/KG-DW	2300	1	8270	07/20	23673
2,4-Dinitrotoluene	BDL	UG/KG-DW	440	1	8270	07/20	23673
2,6-Dichlorophenol	BDL	UG/KG-DW	440	1	8270	07/20	23673
2,6-Dinitrotoluene	BDL	UG/KG-DW	440	1	8270	07/20	23673
2-Chloronaphthalene	BDL	UG/KG-DW	440	1	8270	07/20	23673

ote 'BDL' = Below Detection Limit
Unit followed by 'DW' signifies Results in Dry Weight.

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