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LETTER OF TRANSMITTAL

From: Bruce Yare
575 Maryville Centre Drive
St. Louis, MO 63141
(314) 674-4922 FAX (314) 674-8957

Date: 6/20/02

Sauget Area 1

Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Michael Ribordy (SR-6J)
Environmental Protection Agency
77 West Jackson Blvd.
Chicago, IL 60604

The following items are:

_X_ Enclosed ____Requested ____ Sent Separately Via:_____

No. of Copies	Description
3	Engineering Evaluation/Cost Analysis,
3	Human Health Risk Assessment
3	Ecological Risk Assessment
3	Data Validation Report
3	Database (Compact Disk)

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Comments:

By: Bruce Yare

Sauget Area 1

Dead Creek Final Remedy

Volume 1

Engineering Evaluation/Feasibility Study

Sauget and Cahokia, Illinois

DRAFT

June 21, 2002

Submitted To:

US Environmental Protection Agency
Chicago, Illinois

Submitted By:

Solutia Inc.
St. Louis, Missouri

SOLUTIA
Applied Chemistry, Creative Solutions

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June 21, 2002

Mr. Michael Ribordy (SR-6J)
USEPA Region 5
77 West Jackson Blvd.
Chicago, IL 60604

Re: Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis
Sauget Area 1, Sauget and Cahokia, IL

Dear Mr. Ribordy,

On August 29, 2001, the United States Environmental Protection Agency issued a Unilateral Administrative Order to Monsanto Company and Solutia Inc. (Docket No. V-W-99-C-554) pursuant to section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended, 42 U.S.C. Section 9606(a). The Order required Solutia to conduct removal activities to abate a potential imminent and substantial endangerment to the public health, welfare or the environment that may be presented by the actual or threatened release of hazardous substances at or from impacted sediments and soil in Dead Creek. The Order also required post-removal sampling of all excavated areas. The post removal sampling results were to used in the Sauget Area 1 EE/CA and RI/FS processes to determine what, if any, excavated areas in addition to CS-B may require further remediation under the EE/CA process.

Sediment removal was completed in February 2002 when the last of 46,000 cubic yards of sediments from Creek Segments B, C, D, E and F, Site M and the lift station sump at Old Prairie du Pont Creek were transferred to an on-site, RCRA/TSCA-compliant, containment cell. Post-removal creek bottom soil sampling was started in October 2001 and completed in February 2002. Sample analysis and data validation were completed in May 2002. Validated data were used to prepare an Engineering Evaluation/Cost Analysis, a Human Health Risk Assessment and an Ecological Risk Assessment for creek bottom soil in Creek Segments B, C, D, E and F and Site M. This work was done to fulfill the requirements of Section I - Jurisdiction and General Provisions and Section V.3.4 - Excavated Area Soil Sampling of the UAO.

The Engineering Evaluation/Cost analysis is attached to this letter. The Human Health Risk Assessment, Ecological Risk Assessment and Data Validation Report are being sent under separate covers.

Sincerely,

Bruce S. Yare, for

Alan G. Faust
ESH Lead, Industrial Products

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VOLUME 3 ECOCOLOGICAL RISK ASSESSMENT

VOLUME 4 DATA VALIDATION REPORT

Section 1.0

1.0 Executive Summary

1.1 Introduction

On May 31, 2000, the United States Environmental Protection Agency issued a Unilateral Administrative Order to Monsanto Company and Solutia Inc. (Docket No. V-W-99-C-554) pursuant to section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended, 42 U.S.C. Section 9606(a). This Order, which was modified on August 29, 2001, required the following response activities at Sauget Area 1 Creek Segments B and Site M, Creek Segments C, D, E and F at the lift station at Old Prairie du Pont Creek, which are located in Sauget and Cahokia, Illinois:

- Implementation of a Removal Action to mitigate the threats posed by presence of contamination in Dead Creek sediments and certain adjacent soils and their potential migration via overflow and flood waters from the Site;
- Removal of materials from Sauget Area 1 CS-B (creek sediments, creek bed soils and flood plain soils); CS-C, D, E and F (non-native creek sediments only); Site M (pond sediments and pond bottom soils) and non-native sediments in the lift station sump, while minimizing adverse impacts to area wetlands and habitat;
- Dewatering, excavation and transfer of contaminated sediment and soil to an on-site containment cell; and
- Placement of membrane liner material over CS-B and in all other excavated areas where, based on post-removal sample results, such liner is determined to be necessary.

The Order required Solutia to conduct these removal activities to abate a potential imminent and substantial endangerment to the public health, welfare or the environment that may be presented by the actual or threatened release of hazardous substances at or from the site. A Time-Critical Removal Action was appropriate for the following reasons:

1) The threat of migration due to sediment mobilization and downstream transport during flood conditions in Creek Segment B and Site M. Sediments in CS-B and Site M contain Zinc, Copper, Lead, Barium, Nickel and PCBs with maximum concentrations of 71,000 ppm; 44,800 ppm; 24,000 ppm; 17,300 ppm; 3,500 ppm and 17,000 ppm, respectively.

2) Although the culvert at the downstream end of Creek Segment B was blocked sometime between 1940 and 1970, the Village of Cahokia has installed a high level overflow to mitigate flooding due to the plugged culvert. In addition, the Village has attempted to pump water from Creek Segment B to Creek Segment C to prevent flooding of residential areas and Judith Lane. These actions, taken to protect homes and transportation routes, create a threat of migration due to downstream movement of sediments during flood conditions.

3) The threat of migration due to sediment mobilization and downstream transport during flood conditions in Creek Segment C. Sediments in CS-C contain Zinc, Copper, Barium, Nickel, Lead and PCBs with maximum concentrations of 21,000 ppm; 17,200 ppm; 4,700 ppm; 2,300 ppm; 1,300 ppm and 23 ppm, respectively..

4) The threat of migration due to sediment mobilization and downstream transport during flood conditions in Creek Segment D. Sediments in CS-D contain Zinc, Copper, Nickel, Barium, Lead and PCBs with maximum concentrations of 6,950 ppm; 1,630 ppm; 665 ppm; 622 ppm; 480 ppm and 12 ppm, respectively.

5) The threat of migration due to sediment mobilization and downstream transport during flood conditions in Creek Segment E. Sediments in CS-E contain Zinc, Copper, Barium, Nickel, Lead and PCBs with maximum concentrations of 9,970 ppm; 8,540 ppm; 3,690 ppm; 2,130 ppm; 1,270 ppm and 60 ppm, respectively.

6) An evaluation of the factors identified in Section 300.415 of the National Contingency Plan and attendant concerns for risks posed by sediments in Creek Segment B and Site M and Creek Segments C, D and E.

Parties, identified by USEPA, who generated wastes that were disposed of, released into and/or transported wastes to Sauget Area 1, including parties whose wastes migrated from various disposal areas into other sites or segments of Dead Creek, include but are not limited to the following:

- Amax Zinc
- American Zinc
- Cardinal Construction Company
- Cerro Copper Products
- Darling Fertilizer
- ExxonMobil
- Industrial Disposal, Inc.
- Midwest Rubber
- Monsanto Company/Solutia Inc.
- Paul Sauget
- Rogers Cartage
- Ruan Transportation Corporation
- Sauget and Company
- Sterling Steel Casting Co.
- Village of Sauget
- Waggoner and Company
- US Chemical Warfare Service

Sediment removal was completed in February 2002 when the last of 46,000 cubic yards of sediments from Creek Segments B, C, D, E and F, Site M and the lift station sump were transferred to the RCRA/TSCA-compliant, on-site containment cell. Post-removal creek bottom soil sampling was started in October 2001 and completed in February 2002. Sample analysis and data validation were completed in May 2002. Validated data were used to prepare an Engineering Evaluation/Cost Analysis, a Human Health Risk Assessment and an Ecological Risk Assessment for creek bottom soil in Creek Segments B, C, D, E and F and Site M. This work was done to fulfill the requirements of Section I - Jurisdiction and General Provisions of the UAO:

> "The Order also requires ... post-removal sampling in all excavated areas. The post removal sampling results will be used in the [Sauget] Area One EE/CA and RI/FS processes to determine what, if any, excavated areas in addition to CS-B may require further remediation under the EE/CA process."

and Section V. 3. 4. Excavated Area Soil Sampling:

> " After the sediment and soils removal has taken place, Respondents shall collect soil samples from, at a minimum, all excavated areas of CS-B, C, D, E at and a portion of F, and the basin area located at the lift station at 100 ft. intervals (to be referred to as "transects"), starting at the upstream end of the channel at Queeny Road and terminating near the downstream end of the channel at Route 3. Each creek transect, and sample location, shall be identified and numbered for reference purposes. Sampling at each creek transect shall occur at a frequency of no less than 3 samples per transect. Of the 3 samples, one shall be located at the transect center line and the other two shall be located equidistant to the center and the edge of the excavation area. Due to the fact that soils leaching to groundwater is the primary concern, bottom soil samples shall be extracted using TCLP and analyzed for Total Compound List/Total Analyte List (TCL/TAL) parameters and dioxin/furans.
>
> Soil samples shall be collected from the bottom of Site M at 100 ft. grid intervals covering the entire excavated area. Pond bottom soils will be extracted using the TCLP and analyzed for TCL/TAL parameters and dioxin/furans."

Dead Creek was also investigated by Solutia under a January 21, 1999 AOC that required collection of waste, sediment, surface water, soil, air and groundwater data as part of a site investigation program called the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan. Data collection was started in September 1999 and completed in April 2000. Waste, sediment, surface water, soil and air data were incorporated into an Engineering Evaluation/Cost Analysis

Report and groundwater data were used to prepare a Remedial Investigation/Feasibility Study Report. Both documents were submitted to USEPA Region 5 as a combined report in January 2001 and revised in accordance with Agency comments in June 2001. Background information and analytical data used to prepare this Dead Creek Final Remedy EE/CA was obtained from the Engineering Evaluation/Cost Analysis and Remedial Investigation/Feasibility Study Report prepared by Roux Associates for Solutia Inc and submitted to USEPA on June 8, 2001.

1.2 Site Characteristics

1.2.1 Site Location and Physical Setting

Sauget Area 1 is situated in a floodplain of the Mississippi River that is called the American Bottoms. It is located on the eastern side of the river directly opposite St. Louis, Missouri. As a whole, the floodplain encompasses 175 square miles, is 30 miles long, and has a maximum width of 11 miles. It is bordered on the west by the Mississippi River and on the east by bluffs that rise 150 to 200 feet above the valley bottom. The floodplain is relatively flat and generally slopes from north to south and from east to west. Land surface lies between 400 and 445 feet above mean sea level (MSL). Locally across Sauget Area 1, the topography consists of nearly flat bottomland with slight irregularities. Elevations across the study area range from 400 to 410 feet MSL, and the land surface trends in a southeastward/northwestward direction.

Dead Creek, a 17,000 ft. long intermittent stream located in Sauget and Cahokia, St. Clair County, Illinois, is part of the Sauget Area 1 Site (Figure 1-1). Dead Creek is an urbanized drainage channel situated in an industrial and residential setting that was subdivided into six segments by IEPA during past investigations of Sauget Area 1:

Creek Segment A	Alton & Southern Railroad to Queeny Avenue
Creek Segment B	Queeny Avenue to Judith Lane
Creek Segment C	Judith Lane to Cahokia Street
Creek Segment D	Cahokia Street to Jerome Lane
Creek Segment E	Jerome Lane to Route 157
Creek Segment F	Route 157 to Old Prairie du Pont Creek

1.2.2 Present and Past Facility Operations and Disposal Practices

Historically, Dead Creek was used as part of the Village of Sauget sewer system. Consequently, any industry discharging wastewaters into the sewer is a suspect source of contamination in Dead Creek. There were a number of Industrial dischargers to the Village of Sauget sewer system and the constituents known or suspected to be in their wastewater discharges are listed below:

- **Volatile Organics**
  Acetone
  Benzene
  Toluene
  Xylene

  Chlorobenzene
  Chloroform
  Methylene Chloride
  1,1,1-Trichloroethane
  Trichloroethene

- **Metals**
  Antimony
  Arsenic
  Beryllium
  Cadmium
  Chromium
  Copper
  Iron
  Lead
  Magnesium
  Nickel
  Silver
  Zinc

- **Inorganics**
  Caustic Soda
  Chlorine
  Hydrochloric Acid
  Muriatic Acid
  Phosphoric Acid
  Phosphorous Oxychloride
  Phosphorous Trichloride
  Nitric Acid
  Sulfuric Acid
  Zinc Sulfate

- **Semivolatile Organics**
  Adipic Acid
  Alkylbenzene
  Aniline
  Benzyl Chloride
  Biphenyl
  Butyl Benzyl Chloride
  Calcium Benzene Sulfonate
  Chorinated Cyanuric Acid
  Chlorosulfonic Acid
  Chlorosulfuric Acid
  Chloryl Acetyl Chloride
  Dichlorobenzene
  2,4-D
  Fatty Acid Chloride
  Monochloroacetic Acid
  Napthalene
  Nitrochlorobenzene
  Phenanthrene
  Phenols

- **Petroleum Hydrocarbons**

- **PCBs**

- **Oil Additives**

- **Urea**

1.2.3 Geology/Hydrology/Hydrogeology

Geology - The American Bottoms are underlain by unconsolidated valley fill composed of recent alluvium, known as the Cahokia Alluvium, which overlies a unit of glacial material known as the Henry Formation. The Cahokia Alluvium is approximately 40 feet thick and consists of

unconsolidated, poorly sorted, fine-grained material with some local sand and clay lenses. These alluvial deposits unconformably overlie the Henry Formation, which is composed of medium to coarse sand and gravel that increases in grain size with depth. This unit is approximately 95 feet thick and generally becomes thinner with increasing distance from the Mississippi River.

The valley fill throughout the floodplain is underlain by a bedrock system of Mississippian and Pennsylvanian age. The bedrock consists primarily of limestone and dolomite with some sandstone and shale, and is older in the central and western sections of the American Bottoms.

Hydrology - The Mississippi River, bordering the American Bottoms to the west, is the major surface-water body draining the area fed by a complex network of natural and artificial channels that have undergone extensive improvement throughout the 20th Century. According to an investigation of ground-water resources conducted by the Illinois State Water Survey Division, at least 40 miles of improved drainage ditch have been constructed and the natural lake area in the center of the floodplain has been reduced by more than 40 percent.

Dead Creek serves as the main conduit for surface-water drainage through the Sauget Area 1 Site. The creek flows to a floodway south of Cahokia, which in turn discharges to the Cahokia Chute of the Mississippi River. Surface drainage across the study area is generally toward Dead Creek, although site-specific drainage patterns are present.

Flooding occurs in Sauget Area 1 during periods of significant precipitation due to low topographic relief, lack of a storm-water drainage system in developed areas and limited hydraulic capacity in Dead Creek resulting from under-sized road culverts. During such events, surface-water runoff is unable to drain sufficiently to prevent ponding and backup. The creek overflows at the same time that the banks and adjacent areas begin to flood due to lack of relief, resulting in flooding of the entire area.

Hydrogeology - Sauget Area 1 is located in the southwestern section of the American Bottoms floodplain. More specifically, it is situated south of East St. Louis, and extends approximately three-quarters to one mile east of the eastern bank of the Mississippi River. The stratigraphy beneath the site is much like that of the rest of the floodplain.

Geologic data show that the unconsolidated deposits range from 140 feet thick near the river to about 100 feet in the eastern part of the study area. At most locations, the contact between Cahokia Alluvium and the Henry Formation cannot be distinguished. However, three distinct hydrogeologic units can be identified: 1) a shallow hydrogeologic unit (SHU); 2) a middle hydrogeologic unit (MHU); and 3) a deep hydrogeologic unit (DHU). The 20 feet thick SHU includes the Cahokia Alluvium (recent deposits) and the uppermost portion of the Henry Formation. This unit is primarily unconsolidated, fine-grained silty sand with low to moderate permeability. The 30 feet thick MHU is the upper to middle, medium to coarse sand portion of the Henry Formation. It contains higher permeability sand than found in the overlying shallow hydrogeologic unit, and these sands become coarser with depth. At the bottom of the aquifer is the DHU, which includes the high permeability, coarse-grained deposits of the lower Henry Formation. This zone is estimated to be about 30 to 40 feet thick. In some areas, clays with limestone fragments were encountered 10 to 15 feet above the bedrock. Evidently, these deposits are a limestone bedrock weathering residuum.

Groundwater beneath Sauget Area 1 flows generally from east to west, toward the Mississippi river. Horizontal groundwater gradients beneath Sauget Area 1 average about 0.001 feet per foot (ft/ft) to the west. Downward vertical gradients occur on parts of the site, with varying magnitudes depending on location and season. Groundwater level is typically between 10 to 20 feet below ground surface during dry weather, but fluctuates during times of heavy and light precipitation. Ground surface elevation ranges from 405 to 416 ft. amsl.

Aquifer tests performed over a span of 30 years have established characteristics such as transmissivity, hydraulic conductivity, storage coefficient and groundwater velocity. Tests have been conducted for all three (3) groundwater units and are summarized as follows:

	Transmissivity gpd/ft	Hydraulic Conductivity	Storage Coefficient
Shallow Hydrogeologic Unit	141.5 gpd/ft	9.5 gpd/ft^2 (4 x 10^{-4} cm/s)	**Not Available**

Middle Hydrogeologic Unit	165,000 gpd/ft	3,300 gpd/ft^2 (1.6 x 10^{-1} cm/s)	0.04
Deep Hydrogeologic Unit	211,000 gpd/ft	2,600 gpd/ft^2 (1.2 x 10^{-1} cm/s)	0.002 - 0.100

Note: Results are averages.

1.2.4 Current and Past Groundwater Use

Historically, ground water from the American Bottoms aquifer was a major source of water for the area and was used for industrial, public, and irrigation purposes. Currently, no ground water is being pumped from the American Bottoms aquifer in the vicinity of Sauget Area 1 for public or industrial supply purposes. Nine residential wells use groundwater for lawn and garden irrigation within Sauget Area 1. Cahokia and Sauget both have city ordinances that prohibit use of groundwater as potable water.

Public water supply, obtained from a surface water intake in the Mississippi River three miles north of Dead Creek at River Mile 181, is the exclusive potable water source for area residents. This drinking water intake is owned and operated by the Illinois American Water Company (IAWC) of East St. Louis, and it serves the majority of residences in the area. IAWC supplies water to Sauget. The Commonfields of Cahokia Public Water District purchases water from IAWC and distributes it to portions of Cahokia and Centerville Township. The Cahokia Water Department also purchases water from IAWC and distributes it to small residential areas in the west and southwest portions of Cahokia.

Although agricultural land is found throughout the study area but it is not irrigated.

1.2.5 Surrounding Land Use and Populations

Active and inactive facilities operating in or near Sauget Area 1 are listed below and their locations are shown on Figure 1-1. Inactive facilities are indicated with an asterisk.

West of Mississippi Avenue (Route 3)

American Bottoms POTW	Wastewater Treatment
AmerenUE	Electricity Distribution
Cahokia Marine Services	Coal Bulk Storage and Transfer
Clayton Chemical/Resource Recovery*	Spent Solvent Reprocessing
Darling Fertilizer*	Fertilizer Manufacturing
Eagle Marine Industries	Barge Terminal and Fleeting
Midwest Rubber*	Tire Reprocessing
Phillips Pipe Line Company	Petroleum Bulk Storage and Transfer
Onyx Environmental Services	Hazardous Waste Treatment
Peavey/ConAgra	Bulk Grain Storage and Transfer
River City Landscape and Supply	Lawn and Garden Product Storage
Slay Terminals	Coal Bulk Storage and Transfer
St. Louis Grain Company	Bulk Grain Storage and Transfer
Union Electric*	Electricity Generation
Village of Sauget PChem Plant	Industrial Wastewater Treatment

East of Mississippi Avenue (Route 3)

Astaris	Phosphorous Pentasulfide Manufacturing
Big River Zinc	Zinc Refining
Cerro Copper	Copper Tubing Manufacturing
Ethyl Corporation	Petroleum Additives Manufacturing
Mobil*	Petroleum Refining
Exxon/Mobil	Petroleum Bulk Storage and Transfer
Flexsys	Rubber Chemicals Manufacturing
Oxychem	Swimming Pool Chlorine Manufacturing
Solutia	Monochlorobenzene Production
Sterling Steel Castings	Steel Foundry
T.J. Moss*	Wood Preservation
US Chemical Warfare Service*	Chemical Warfare Agents

A number of petroleum, petroleum product and natural gas pipelines, operated by Explorer Pipeline Company, Marathon, Phillips Pipe Line Company, ExxonMobil and Laclede Gas, are also located in the area.

Historically, Sauget Area 1 and its surroundings were used for waste disposal. Six closed landfills (Sauget Area 1 Sites G, H and I and Sauget Area 2 Sites P, Q and R), four closed sludge lagoons (Sauget Area 2 Site O), a closed tank-truck wash-water lagoon (Sauget Area 1 Site L), a waste disposal site associated with an abandoned solvent reclamation facility (Sauget Area 2 Site S) and borrow pit backfilled with concrete rubble, demolition debris and chemical waste solids (Sauget Area 1 Site N) are located in the Sauget area.

1.2.6 Sensitive Ecosystems

Threatened and Endangered Species - There are two federally listed endangered species that can potentially be found at (or adjacent to) the Sauget Area 1: 1) the Indiana bat (*Myotis sodalis*) and 2) the pallid sturgeon (Scaphirhynchus albus). One federally listed threatened species recorded in St. Clair County is the decurrent false aster (*Boltonia decurrens*). A federally listed species that is known to winter in the region and identified in the area is the bald eagle (*Haliaeetus leucocephalus*). The bald eagle was recently upgraded to threatened status from endangered by the USFWS.

Several state-listed bird species are likely to utilize the Sauget Area 1 including the: black-crowned night heron (*Nycticorax nycticorax*), little blue heron (*Egretta caerulea*), snowy egret (*Egretta thula*), great egret (*Casmerodius albus*) and pied-billed grebe (*Podilymbus podiceps*). The great egret and pied-billed grebe are listed as threatened by the State of Illinois; the other three species are listed as endangered by the State. Only the black-crowned night heron has been sighted within two miles of the site.

Sensitive Habitats - Sensitive habitats include those ecological systems that support endangered or threatened species (either federally or state listed) or support wetlands. Given the lack of endangered or threatened species expected at the site, habitat to support these species is not expected to be present. A pair of bald eagles attempted to nest on the southern end of Arsenal Island, south of the Sites, in 1993. While the pair failed in their first attempt, it is not know whether later attempts were successful. A nest was observed in 1996, but it did not appear to be in use.

1.2.7 Meteorology/Climatology

The National Climatic Data Center (NCDC) describes the areas' climate as modified continental, subject to four-season climate changes without the undue hardship of prolonged periods of extreme heat or high humidity. The normal annual precipitation for the area is slightly less than 34 inches. The winter months are the driest, with an average total of about six (6) inches of precipitation. The spring months of March through May are normally the wettest with normal precipitation of just under 10.5 inches.

1.3 Previous Removal/Remedial Actions

1.3.1 1988 Creek Segment B Removal Action

Creek Segment B, Site M and most of Site G were fenced in 1988 pursuant to a USEPA CERCLA removal action.

1.3.2 1991 Creek Segment A Remedial Action

Cerro Copper conducted remediation of CS-A in 1990 and 1991 under an IEPA-approved plan. Approximately 27,500 tons of contaminated sediments were removed from depths of 10 to 15 feet below grade and transported to RCRA and TSCA permitted facilities (Waste Management Landfill in Emelle, Alabama). Subsequent to the installation of an HDPE vapor barrier, CS-A was filled and covered with crushed gravel. A portion of CS-A is now used for controlled-access truck parking. Land use surrounding CS-A is industrial. Since Segment A was remediated under an Agreement with the IEPA, no additional remedial or removal actions are planned.

1.3.3 1995 Site G Removal Action

The USEPA conducted a CERCLA removal action at Site G in 1995 following several persistent fires that could not be put out by the local fire department. This removal action involved the excavation of PCBs, organics, metals and dioxin impacted soils on and surrounding Site G; solidification of open oil pits on the site; and covering part of the site with a clean soil cap approximately 18 to 24-inches thick. Most of Site G is vegetated and enclosed by a fence. A portion of Site G is believed to extend beneath the Wiese Engineering facility and parking area.

1.3.4 2001 Dead Creek Culvert Replacement Removal Action

The USEPA issued a UAO on June 21, 1999 requiring replacement of Dead Creek culverts. Solutia and USEPA reached agreement that the UAO would be limited to the culverts at Cargill Road and the Terminal Railroad Embankment. Replacement of these culverts is complete.

1.3.5 2002 CS-B, C, D, E and F and Site M Sediment Removal Action

USEPA issued a UAO on May 31, 2000 for a Time-Critical Removal Action of sediments in Creek Segment B, C, D and E to eliminate potential risks associated with flooding and to eliminate adverse ecological impact. On August 29, 2001, the UAO was amended to include sediments in CS-F between Route 157 (Camp Jackson Road) and the confluence of Dead Creek with the Borrow Pit Lake and sediments in the Old Prairie du Pont Creek lift station sump were included in the sediment removal action. Work under this order continues.

1.4 Source, Nature and Extent of Contamination

1.4.1 Sediments

Dead Creek serves as the main conduit for surface water drainage from Sauget Area 1. The Creek flows southwesterly from Creek Segment B, intersects a flooded former borrow pit (Borrow Pit Lake) near the downstream end of Creek Segment F and discharges to Old Prairie du Pont Creek through levee flap valves during low stage in the Mississippi River. When the Mississippi River is at flood stage, discharge from Dead Creek is pumped over the levee by a lift station. Land use along the creek is primarily residential with some mixed agricultural, industrial and commercial use. The widest segment occurs where Creek Segment F is bordered by several hundred feet of wetlands. A series of culverts have been installed in developed areas of the Creek to channel water under roads and parking lots.

1998 Ecology & Environment Data Report - Only five metals, Barium, Copper, Lead, Nickel and Zinc, were found in all study area sediments at concentrations higher than 100 ppm. ?

	CS-B	CS-C	CS-D	CS-E
Metals (> 100 ppm)				
Arsenic	•			
Barium	•	•	•	•
Cadmium	•			
Chromium	•			•
Cobalt	•			
Copper	•	•	•	•

Lead	•	•	•	•
Nickel	•	•	•	•
Selenium	•			
Silver	•			
Strontium	•	•		
Vanadium	•			
Zinc	•	•	•	•

PCBs were the only organic constituents found at concentrations higher than 1 ppm in sediment samples from Creek Segments B, C, D and E.

	CS-B	CS-C	CS-D	CS-E
VOCs (> 1 ppm)				
Acetone	•			
2-Butanone	•			
Chlorobenzene	•			
Ethylbenzene	•			
4-Methyl-2-Pentanone		•	•	
Toluene	•			
SVOCs (> 1 ppm)				
Acenapthene	•			
Anthracene	•			
Benzo(a)anthracene	•	•		
Benzo(b)fluoranthene	•	•		•
Benzo(k)fluoranthene	•			
Benzo(g,h,I)perylene	•	•		
Benzo(a)pyrene	•	•		
Bis(2-ethylhexyl)phthalate	•			
Butylbenzylphthalate	•	•		
Chrysene	•	•		•
Chloronitrobenzene	•			
Dibenzo(a,h)anthracene	•	•		
Dibenzofuran	•			
1,2-Dichlorobenzene	•			
1,3-Dichlorobenzene	•			
1,4-Dichlorobenzene	•			•
Di-ni-octyl phthalate	•			
Fluoranthene	•	•		
Fluorene	•			
Hexachlorobenzene	•			
Indeno(1,2,3-cd)pyrene	•	•		
2-Methylnapthalene	•			
Napthalene	•			

4-Nitrophenol	•			
Pentachlorophenol	•			
Phenanthrene	•			
Pyrene	•	•		•
1,2,4-Trichlorobenzene	•			
PCBs	•	•	•	•

2001 Sauget Area 1 EE/CA and RI/FS Report - While the sediments in Dead Creek contain a variety of individual VOCs, SVOCs, Metals, and Herbicides/Pesticides; Total SVOCs, Total PCBs, Dioxin TEQs and Zinc are representative indicator classes of compounds to evaluate sediment transport behavior in Dead Creek. The maximum concentrations of these constituents in the various downstream Creek segments are summarized below (upstream to downstream).

DEAD CREEK SEGMENT CONSTITUENT DISTRIBUTION				
	Maximum Concentration (μg/kg)			
Creek Segment	SVOCs	PCBs	Dioxins	Zinc (mg/kg)
Reference Areas	**ND**	**ND**	**0.006**	**96**
CS-B	19,830	226,140	12.497	26,000
CS-C	13,430	48,250	2.939	76,000
CS-D	7,810	10,616	0.673	19,000
CS-E	6,280	8,758	0.470	55,000
CS-F	194	6,290	0.332	11.000
Borrow Pit Lake	ND	ND	0.033	450
Prairie duPont Creek	ND	ND	0.004	63

Notes:
1) Sediments in CS-B, C, D, E and F were removal in 2001/02 under a UAO
2) ND = not detected.
3) Dioxins reported as TEQs.
4) Reference Area concentrations are average concentrations.

Maximum detected SVOC and PCB concentrations are one to two orders of magnitude lower in Creek Segment F compared to Creek Segment B. No SVOCs or PCBs were detected in sediments from the Borrow Pit Lake or Old Prairie du Pont Creek. Dioxin and zinc concentrations are at least three orders of magnitude lower in Borrow Pit Lake than in CS-B, and comparable to background concentration. Sediment toxicity was observed in all creek segments.

1.4.2 Surface Water

Surface-water sampling results indicate generally low concentrations of organic and inorganic constituents throughout the study area. Total VOCs were detected at a maximum concentration of 18 µg/L in Creek Segment B, decreasing to none detected at the confluence with the Borrow Pit Lake. The primary VOC found in the Dead Creek surface-water samples was acetone (estimated values, typical laboratory artifact). Chlorobenzene was detected in one sample (SW-CSB-51) at a concentration of 2.8 µg/L (the Class I standard is 100 µg/L). Benzene was detected in one sample (SW-CSF-52) at a concentration of 1.7 µg/L (the Class I standard is 5 µg/L).

SVOCs were detected in four of 20 samples (maximum detection = 8.22 µg/L) and were generally limited to PNA compounds typically found in industrial areas.

Total pesticide concentrations in Dead Creek ranged from a high of 0.1218 µg/L in Creek Segment B to none detected in Creek Segment F and Old Prairie du Pont Creek. Maximum detected total pesticide concentrations in Borrow Pit Lake (0.037 µg/L) were less than the average concentrations found at the two reference areas (0.046 µg/L). Herbicides were detected in one of 20 samples (Creek Segment B) at a concentration of 1.0 µg/L (Pentachlorophenol). PCBs were detected in one of 20 samples at an estimated concentration of 0.055 µg/L (Creek Segment D).

Dioxin TEQs ranged from maximum values of 21.9 parts per quadrillion (ppq) in Creek Segment B to 5.3 ppq in the downstream sample from Old Prairie du Pont Creek. Average dioxin values measured in the reference area samples were 8.52 ppq (Reference Area 1) and 23.59 ppq (Reference Area 2).

The maximum average concentrations of zinc, nickel and lead found in Dead Creek are at or below the average concentrations measured in the two reference areas. The average copper concentration in Creek Segment F and Borrow Pit Lake were below the average reference area concentrations, and no copper was detected in Old Prairie du Pont Creek.

These data indicate that constituent transport from sediments to surface water was not a significant pathway of concern prior to implementation of the Dead Creek Sediment Removal Action. Removal of impacted sediments in Dead Creek Segments B, C, D, E and F and Site M eliminated any future potential for migration by this route. Since constituent transport from sediments to surface water was not a significant pathway of concern when impacted sediments were in place, it is unlikely that constituent transport from creek bottom soils, which have lower constituent concentrations than the former impacted sediments, to surface water will be a significant pathway now that they are exposure to the water column.

1.4.3 Groundwater

Shallow ground water bordering Dead Creek Segment B at Judith Lane and Site M at Walnut Street, locations where impacted sediment concentrations were the highest detected in Dead Creek during past investigations, and nearby domestic irrigation wells on Judith Lane (100, 102, 104 and 109 Judith Lane) were sampled during the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan to evaluate the potential transport of constituents from impacted sediments to ground water.

The maximum concentration of Total VOCs detected in these groundwater samples was 1.5 µg/L at the residence at 102 Judith Lane. The maximum concentration of Total SVOCs detected was 6.7 µg/L after 24 hours of pumping at location TS-S1 (Site M). Some of these SVOCs included concentrations above Class I standards. No PCBs were detected in any of the domestic wells. PCBs were initially detected at 0.06 µg/L at the 40-feet sampling interval at the Site M sampling location; however, no PCBs were detected during subsequent time-series sampling at this location. Pesticides were detected at a maximum concentration of 0.004 µg/L at the residence at 100 Judith Lane. Total Pesticides were initially detected at 0.04 µg/L at one of the time-series sampling locations; however, no pesticides were detected during subsequent time-series sampling events. Herbicides were not detected in any of the domestic wells. The maximum concentration of Total Herbicides detected at the time-series sampling locations was 0.66 µg/L at the 15-feet depth interval at the CS-B sampling location. Total Dioxin TEQs were measured in all domestic wells at concentrations ranging from 2 ppq to 3 ppq. Total Dioxin TEQs measured in initial samples collected from the time-series sampling locations ranged from

2.8 ppq to 114 ppq; however, concentrations measured during subsequent time-series sampling under pumping conditions were all below 5 ppq.

These data indicate that constituent transport from sediments to groundwater water is not a significant pathway of concern. Removal of impacted sediments in Dead Creek Segments B, C, D, E and F and Site M eliminated any future potential for migration by this route. Since constituent transport from sediments to groundwater was not a significant pathway of concern when impacted sediments were in place, it is unlikely that constituent transport from creek bottom soils, which have lower constituent concentrations than the former impacted sediments, to groundwater will be a significant pathway now that they are exposure to the water column.

1.4.4 Creek Bottom Soil

Zinc is ubiquitous in Dead Creek bottom soil, occurring at concentrations greater than 1,000 ppm in 57 out of the 66 sampling transects in CS-B, C, D, E and F. As set out in the table below, there are a few areas of isolated impacted soils in Creek Segments B, D, E and F and Site M where total organic constituent concentrations are greater than 1 ppm and Copper, Lead and Nickel concentrations are greater than 1,000 ppm:

• **Creek Segment B**	Transects T0 to T5	VOCs, SVOCs, PCBs and Copper
	T6, T7	Herbicides
	T9	Herbicides
	T12	SVOCs
	T16	Copper
• **Site M**	Samples S3 to S10	VOCs, SVOCs, Pesticides, Herbicides, PCBs Copper, Nickel
• **Creek Segment D**	T6	VOCs, Pesticides, PCBs Copper
• **Creek Segment E**	T16, T17	SVOCs, PCBs Copper
• **Creek Segment F**	T3	SVOCs
	T11	Herbicides
	T14	SVOCs

Creek bottom soil samples CS-B T0 to T5 were collected from the northern end of Creek Segment B adjacent to Site G. After sediment removal, a plastic liner was installed and the channel was backfilled with dense-grade gravel. Samples T6, T7, T9, T12 and T16, which are isolated areas of impacted creek bottom soil, were collected 600, 700, 900, 1200 and 1600 ft. south of the north end of the 1800 ft. long channel. Section V.3.B.5, Excavated Areas Bottom Liner Requirements, of the Dead Creek Sediment Removal Action UAO requires the following actions in Creek Segment B after sediment removal:

> "After excavation and sampling, Respondents shall properly install and maintain a 40 mil, HDPE liner in CS-B of Dead Creek."

Impacted soils at Creek Segment B Transects T0 to T5, T6, T7, T9, T12 and T16 will be isolated from the environment by installation of the channel liner described in Figures 6-1, 6-2 and 6-3. Trespasser contact with these soils will be prevented by installation of rip-rap on top of the HDPE liner and maintenance of existing fencing around Creek Segment B. Worker exposure will be controlled with institutional controls.

Section V.3.B.5, Excavated Areas Bottom Liner Requirements, of the Dead Creek Sediment Removal Action UAO also requires the following actions after sediment removal:

> "A liner shall be installed in other excavated areas of Site M and CS-C, D, E and a portion of F, and the basin area located at the lift station, as determined to be necessary based on post-excavation sampling to isolated impacted soils from surface water."

4/04

CSF T3, 11, 14 → Herb. SVOCs

Site M was backfilled with three feet of clean soil during the Dead Creek Sediment Removal Action to stabilize the site. Impacted soils at S3 to S10 are isolated from the environment by this clean soil. Trespasser contact with these soils is prevented by the clean soil cover and existing fencing around Site M. Worker exposure will be controlled with institutional controls.

Creek Segment F creek bottom soil samples T3, T11 and T14 are isolated impacted areas that can be controlled by excavation and transfer to the on-site containment cell if the Human Health and Ecological Risk Assessments indicate that exposure to these soils may result in actual or potential human health or ecological impacts in excess of acceptable risk range.

1.5 Human Health Risk Assessment

ENSR conducted the Human Health Risk Assessment (HHRA) in accordance with the USEPA approved August 6, 1999 Sauget Area 1 EE/CA and RI/FS Support Sampling Plan HHRA Work Plan. It was performed using data from creek bottom soil samples collected from the study area after completion of sediment removal (Section 2.3.4). Samples were collected and analyzed in accordance with the methods, procedures and protocols included in the September 9, 1999 Sauget Area 1 Support Sampling Plan, Field Sampling Plan, Quality Assurance Project Plan and Health and Safety Plan. Background or reference area sediment sample analytical results from the January 2001 Sauget Area 1 EE/CA and RI/FS Support Sampling Plan Data Report were also used in this HHRA.

VOCs, SVOCs, Pesticides, Herbicides, PCBs, Dioxin, Metals, Mercury, Cyanide analytical results were evaluated for inclusion in the HHRA during the data evaluation and hazard identification process of the HHRA. Based on this evaluation, sixteen Constituents of Potential Concern (COPCs) were identified. In addition to PCBs and Dioxin, the COPCs included the following constituents:

SVOCs

- 1,4-Dichlorobenzene
- 4-Nitroaniline
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Bis(2-ethylhexyl)phthalate
- Dibenzo(a,h)anthracene
- Pentachlorophenol

Metals

- Arsenic
- Copper
- Nickel

Pesticides

- Dieldrin
- Heptachlor
- Heptachlor epoxide

Access to Dead Creek is generally uncontrolled except for Creek Segment B, which is secured with a fence. Therefore, two exposure scenarios were evaluated in the HHRA: 1) a recreational receptor (i.e., teenager) exposed to COPCs in the creek bottom through wading or swimming and 2) a construction worker exposed to soil during excavation activities in the creek channel.

Potential carcinogenic risks for a recreational teenager exposed to creek bottom soils in Creek Segments B, D, E and F and pond bottom soils in Site M are within the target risk range of 1E-6 to 1E-4.

	Potential Risk		Hazard Index	
	RME	MLE	RME	MLE
CS-B	1.95E-06	6.61E-07	2.77E-02	1.25E-02
CS-D	7.30E-07	7.02E-08	3.58E-02	2.91E-03
CS-E	1.69E-07	3.77E-08	9.78E-03	1.69E-03
CS-F	1.40E-07	3.29E-08	1.84E-03	4.18E-04
Site M	2.23E-05	2.32E-06	2.19E-01	2.68E-02

Hazard Indices for each segment are less than 1.0.

Potential carcinogenic risks for a recreational teenager exposed to creek bottom soils in Creek Segments B, D, E and F and pond bottom soils in Site M are within the target risk range of 1E-6 to 1E-4.

Cost. worker R.

	Potential Risk		Hazard Index	
	RME	MLE	RME	MLE
CS-B	2.56E-07	9.78E-08	3.67E-02	2.17E-02
CS-D	7.89E-08	9.17E-09	4.74E-02	4.46E-03
CS-E	1.78E-08	4.94E-09	1.14E-02	2.48E-03
CS-F	1.40E-08	4.16E-09	1.98E-03	5.71E-04
Site M	4.00E-06	3.62E-07	4.58E-01	4.27E-02

Hazard Indices for each segment are less than 1.0.

No constituents of concern were identified in Creek Segment C; all constituents present in CS-C creek bottom soils were screened out during the COPC identification process.

Based on the results of this baseline risk assessment, it is considered appropriate that no further remedial action is necessary to protect human health in Creek Segments B, C, D, E and F and Site M.

1.6 Ecological Risk Assessment

Menzie-Cura & Associates, Inc. evaluated ecological risks due to Dead Creek bottom soils exposed after completion of the Dead Creek Sediment Removal Action, which removed impacted sediment in Creek Segments B, C, D, E and F and Site M down to native soils.

Sediment and forage fish tissue analytical data from the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan were used to calculate site-specific sediment to fish uptake values for chemicals detected in sediment. These site-specific uptake factors, in conjunction with literature values for body burdens in fish associated with toxic effects, were used to back-calculate risk-based creek bottom soil concentrations protective of fish. These site-specific uptake factors were also used in food chain models to calculate risk-based creek bottom soil concentration protective of great blue heron. No risks were predicted for the river otter.

Risk-based concentrations were calculated for the following COPCs:

- **SVOCS** Bis(2-ethylhexyl)phthalate
- **Pesticides** Total DDT, Dieldrin, gamma-Chlordane
- **Total PCBs**
- **Dioxin TEQs**
- **Metals** Aluminum, Chromium, Copper, Lead, Zinc

Risk-based concentrations were compared to the 95% UCL concentrations in creek bottom soils for each creek segment except in Creek Segment D, where the average was used because not enough data were available to calculate UCLs. Risks due to PCBs and Zinc were identified in Creek Segment B and risks due to Zinc were identified in Creek Segment F. If Sampling Transects T0, T3, T4 and T11 were removed from the CS-B creek bottom soil data set and

Sampling Transect T5 was removed from the CS-F data set, UCLs in both creek segments would be below risk-based concentrations.

In summary, results from the Ecological Risk Assessment indicate that the samples listed below need to be isolated or removed from the creek channel in order to reduce potential ecological impacts resulting from impacted creek bottom soils to acceptable levels:

- **CS-B** T0, T3, T4, T11
- **CS-F** T5

PCBs and zinc are the risk drivers for creek bottom soil in Creek Segment B and Zinc is the risk driver for creek bottom soil in Creek Segment F.

Based on these ecological risks, it is considered appropriate to take additional remedial action at Creek Segment B Transects T0, T3, T4 and T11 and Creek Segment F Transect T5. Zinc concentrations at CS-F T5 are anomalously high and may be from a non-Sauget Area 1 facility. Zinc concentrations in the wetland between Cargill Road and CS-F range up to 2,480 mg/kg and concentrations in the ditch along the north side of the Cargill Road are as high as 2,470 mg/kg.

Remediation area and volume are estimated below:

Creek Segment	Transects Exceeding Risk Based Concentrations	Upstream Clean Transect	Downstream Clean Transect	Impacted Channel Length (Feet)	Impacted Channel Area (Feet^2)	Impacted Channel Volume (Yards^3)
• **CS-B**	T0	T0	T1	100	10,000 (1	2,960 (3,4,5
	T3, T4	T2	T5	300	30,000 (1	8,890 (3,4,5
	T11	T10	T12	200	20,000 (1	5,930 (3,4,5
			Subtotal	**600**	**60,000**	**17,780**
• **CS-F**	T5	T4	T6	800	40,000 (2	11,850 (3,4,5
			Subtotal	**1,400**	**100,000**	**29,630**

Notes:
1) Typical creek channel width in CS-B = 100 feet check
2) Typical creek channel width in CS-C = 50 feet
3) Typical creek channel bottom elevation = EL 398 ft. amsl
4) Typical low groundwater elevation = EL 390 ft. amsl
5) Typical excavation depth = 8 ft.

1.7 Engineering Evaluation/Cost Analysis

1.7.1 Remedial Action Objectives

The following Remedial Action Objectives (RAOs) were identified for the Final Remedial Action in Dead Creek:

- Prevent or abate actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances, pollutants or contaminants;
- Prevent or abate actual or potential contamination of surface water, groundwater and ecosystems;
- Achieve acceptable chemical-specific contaminant levels, or range of levels, for all applicable exposure routes; and
- Mitigate or abate other situations or factors that may pose threats to public health, welfare or the environment.

To achieve these RAOs, the Final Dead Creek Remedy should focus on protecting the health and welfare of residents living on or near the creek channel, protecting workers who perform invasive activities in the channel and abating or preventing adverse ecological impacts resulting from exposure to impacted creek bottom soils or surface water in contact with these soils. Site-specific, risk-based concentrations can be derived for constituents detected in creek bottom soils to identify those portions of the channel that pose unacceptable actual or potential risks to humans or ecosystems. Isolating creek bottom soils with concentrations above acceptable risk-based levels by installing a liner or by excavating and transferring them to the on-site containment cell will protect public health and environment.

For these reasons, the goal of the Dead Creek Final Remedy is to protect residents, workers and the aquatic ecosystem by isolating or removing impacted creek bottom soils with

concentrations above acceptable, site-specific, risk-based concentrations and, thereby, abating or preventing:

- Exposure of human populations, animals or the food chain to contaminants;
- Contamination of surface water, groundwater and ecosystems;
- Chemical-specific contamination for all applicable exposure routes; and
- Threats to public health, welfare or the environment.

Surface water not impacted?

Surface water quality monitoring for Zinc and fish tissue bioaccumulation monitoring for PCBs are appropriate performance measure for these Dead Creek Final Remedy objectives.

Liner performance monitoring?

1.7.2 Remedial Action Alternatives

This section presents evaluation of alternatives In the context of specific evaluation criteria developed to address CERCLA requirements and technical and policy considerations proven to be important for selecting remedial alternatives. The Human Health Risk Assessment (Section 2.4.1) indicates there are no unacceptable risks to recreational teenagers and/or construction workers resulting from exposure to creek bottom soils. The Ecological Risk Assessment (Section 2.4.2) indicates there is an adverse impact resulting from exposure to creek bottom soils within portions of Creek Segment B (Transects T0, T3, T4 and T11) and Creek Segment F (Transect T5). Based on the results of the risk assessments, further remedial action for creek bottom soils in these two sections of Dead Creek is appropriate to protect ecological receptors. Containment and removal with on-site disposal and ex-situ treatment and/or disposal for any soil that can not be transferred to the on-site containment cell are the only remedial technologies that are implementable and will be effective at managing the risks associated with the creek bottom soil in Creek Segment B Transects T0, T3, T4 and T11 (Figure 1-2) and Creek Segment F Transect T5 (Figure 1-3). For that reason, only the three alternatives listed below are compared in this Engineering Evaluation/Cost Assessment.

- **Creek Bottom Soils Alternative A – No Action**
- **Creek Bottom Soils Alternative B – Containment**
  - Institutional Controls

- Containment
- Monitoring
  - Surface Water Quality
  - Fish Tissue Bioaccumulation
  - Liner? Performance

- **Creek Bottom Soils Alternative C – Removal**

  - Institutional Controls
  - Removal
    - Excavation and On-Site Disposal For Soil Volumes Up To 20,000 CY
    - Excavation and Off-Site Treatment For Soil Volumes In Excess of 20,000 CY
  - Monitoring
    - Surface Water Quality
    - Fish Tissue Bioaccumulation
    - Liner Performance?

This suite of remedial alternatives is intended to be representative of the remedial alternatives that are available, rather than inclusive of all possible approaches. The use of these alternatives in this EE/CA does not necessarily preclude the use of more than one alternative throughout Dead Creek, or the selection of different process options for containment or disposal, assuming those other alternatives are implementable and effective. For example, some portions of the creek may be treated by excavation and disposal while others are contained.

1.7.3 Comparative Analysis of Alternatives

In the following sections, Creek Bottom Soil Remedial Alternatives A (No Action), B (Containment) and C (Excavation and Disposal) are compared to one another to identify the relative advantages and disadvantages of each. A forced ranking system was used to identify the alternative that best achieves the requirements of the seven evaluation criteria used to evaluate remedial alternatives. In this forced ranking system, the alternative that best meets the requirements of a criterion was awarded a score of 1, the second best alternative was awarded a score of 2 and the third best alternative was awarded a score of 3. Using this ranking method, the alternative with the lowest score is the one that best meets the requirements of the seven criteria. The comparative analysis is summarized in the following table:

	Alternative A (No Action)	Alternative B (Containment)	Alternative C (Removal)
Threshold Criteria			

• Overall Protection of Human Health and the Environment	3	1	2
• Compliance with ARARs	3	2	1
Subtotal	**6**	**3**	**3**
Balancing Criteria			
• Long-term Effectiveness and Permanence	3	1	2
• Reduction of Toxicity, Mobility or Volume Through Treatment	3	2	1
• Short-Term Effectiveness	3	1	2
• Implementability	1	2	3
• Cost	1	2	3
Subtotal	**11**	**8**	**11**
Total Score	**17**	**11**	**14**

While Alternative A is clearly in lower cost and more readily implementable, Alternatives B and C are more effective short term and are the better alternatives for protecting public health and the environment, complying with ARARs, providing long-term effectiveness and permanence and reducing mobility, toxicity or volume. Alternative B scores higher than Alternative C because it provides greater long-term effectiveness and permanence by preventing the discharge of impacted groundwater from Sites G, H and L into Creek Segment B. Alternative C provides more reduction of mobility, toxicity and volume than Alternative B. Alternative B and Alternative C can both achieve compliance with ARARs. Alternative C (Removal) is considered to be better able to achieve ARARs than Alternative B (Containment). Alternative B provides effective protection of public health and the environment at a lower cost than Alternative C.

Overall Protection of Human Health and the Environment - Alternative A does not provide for additional protection of human health and the environment, but is already adequately protective of human health based on the risk assessment.

Alternative B provides for protection of human health and the environment by installing physical barriers in CS-B and CS-F to isolate impacted soils from ecological receptors and to reduce the transport of COCs via storm water. All of Creek Segment B (1,800 ft.) will be lined to comply with the requirements of the Sauget Area 1 Sediment Removal Action UAO and to isolate impacted creek bottom soils and to prevent the discharge of impacted groundwater from Sites G, H and L to Creek Segment B. An 800 ft. long liner will be installed in Creek Segment F, starting at the downstream side of the Terminal Railroad embankment, to isolate impacted soils from the environment. These composite liners will be comprised of a nonwoven geotextile base layer, a 40-mil HDPE liner, a nonwoven geotextile protective layer and rip-rap armoring. Alternative B is more protective of human health and the environment than Alternative A.

Alternative C provides for protection of human health by removal of COCs from Creek Segments B and F. This removal will eliminate exposure to ecological receptors and allow for the subsequent isolation (in the on-site containment cell) or destruction (through off-site incineration and land disposal) of COCs. Alternative C entails removal of 29,630 cubic yards of creek bottom soil from a total of 1,400 linear feet of Dead Creek (CS-B Transects T0 to T1, T2 to T5 and T10 to T12 and CS-F Transects T4 to T6).

Not when removed & lined

Since soil volumes exceed the available 20,000 cy capacity of the on-site containment cell, the excess volume (9,630 cy) will be transported to a commercial incineration facility permitted to treat PCBs and the other constituents present in the excavated soil. Alternative C is less protective of human health and the environment than Alternative B because impacted groundwater from Sites G, H and L may discharge to Creek Segment B during periods of high groundwater levels, subsequently re-contaminating creek bottom soils and potentially resulting in downstream migration of contaminants via the surface water pathway. ?

Compliance with ARARS - Alternative B and Alternative C achieve compliance with ARARs.

Long-Term Effectiveness and Permanence - Alternative A provides no long-term effectiveness and permanence. Alternative B provides more long-term effectiveness and permanence than Alternative C because it prevents the discharge of impacted groundwater to surface water in Creek Segment B. ?

Reduction of Toxicity, Mobility or Volume through Treatment - Groundwater Alternative A relies on natural processes to reduce the toxicity, mobility and volume of contaminants. Alternative B reduces the mobility of contaminants by physical containment of creek bottom soils. Alternative C reduces the mobility of contaminants through the removal of creek bottom soils. In the long term, both Alternative B and Alternative C also reduce the toxicity and volume of soil contaminants through the action of natural processes, such as biodegradation, adsorption, dilution and chemical reactions with subsurface materials. However, Alternative C is more effective than Alternative B at reducing the toxicity and volume of soil contaminants through its use of incineration of a portion of the material. Both Alternatives B and C are more effective than Alternative A in reducing toxicity, mobility or volume. However Alternative C reduces toxicity, mobility and volume more than Alternative B because it relies on removal and treatment instead of containment.

Short-Term Effectiveness - Alternative A is not effective in controlling threats to the environment in the short term because it relies on long-term, natural processes to reduce the adverse ecologic impacts associated with certain of the creek bottom soils. Natural processes will not reduce adverse impacts to ecological receptors in the short term due to the nature of COCs.

Alternative B addresses the adverse impacts resulting from groundwater discharge to surface water in CS-B by the addition of physical containment of the entire creek segment. Alternative C does not address the impact of groundwater discharge to surface water adjacent to Sites G, H and L. Alternative B more quickly mitigates the adverse surface water impacts resulting from transport of creek bottom soil COCs than Alternative C because of the faster implementation time frame. A temporary impermeable liner was installed in the northern 500 ft. of CS-B after completion of sediment removal to prevent the discharge of impacted groundwater from Sites G, H and I. Nonwoven geotextile was installed in the remainder of Creek Segment B to prevent entrainment of creek bottom soils during storm events. Consequently, Alternative B is more effective in the short term than Alternative C.

Implementation of Alternative B and Alternative C pose minimal short-term risk to human health and the environment.

Implementability - Alternative A is more readily implementable than Alternative B or Alternative C because no action is required to implement this alternative. Alternative B can be implemented more readily than Alternative C because a temporary liner is already in place in Creek Segment B and a channel liner design for this creek segment was included in the June 30, 2000 Dead Creek Sediment and Soil Time Critical Removal Action Work Plan. Both of these alternatives are implementable with conventional materials and equipment. Alternative C requires the availability of an incinerator permitted for the disposal of PCBs for the management of creek bottom soil in excess of the remaining capacity in the on-site containment cell. There is only one incinerator in the United States that is permitted to accept PCBs, and this facility may have significant capacity limitations. In addition, soil removed from Creek Segment B will have zinc concentrations ranging from 2,000 to 7,000 ppm while excavated soil from CS-F will have concentrations ranging from 1,100 to 15,000 ppm. Volatile metal concentrations this high may overload incinerator air emission control systems. If so, blending may be required to meet air emission limits for metals and treatment time (and cost) may increase.

? for good

show?

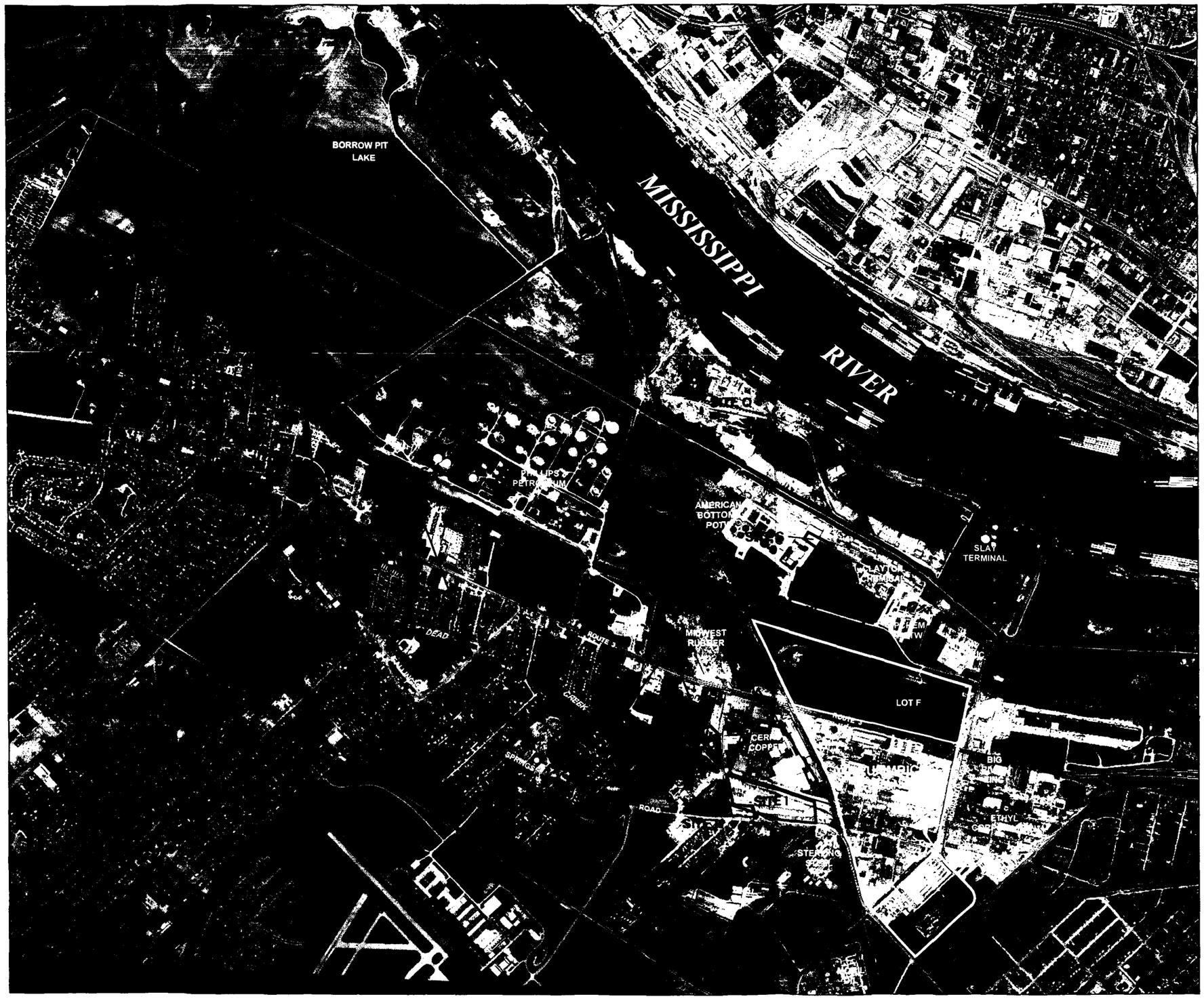
Cost - No costs are associated with Alternative A. Alternative B ($2,016,647) is less expensive than Alternative C ($7,516,988) on a 30-year present value basis and provides similar protection of public health and the environment.

Estimated costs for each alternative are summarized below:

~~cost~~ cost break down?

Project Element	Alternative B (Containment)	Alternative C (Removal)
Institutional Controls	155,113	155,113
Monitoring	453,426	453,426
Remedial Action	1,139,220	6,712,310
Operation and Maintenance	268,888	196,139
30-Year Present Value Cost	$2,016,647	$7,516,988

Discussion only focused on CSB for alternative comparison. what about CSF



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LEGEND

SAUGET AREA 1

SAUGET AREA 2

1,000' 0 1,000'

Title:

SITE LOCATION MAP

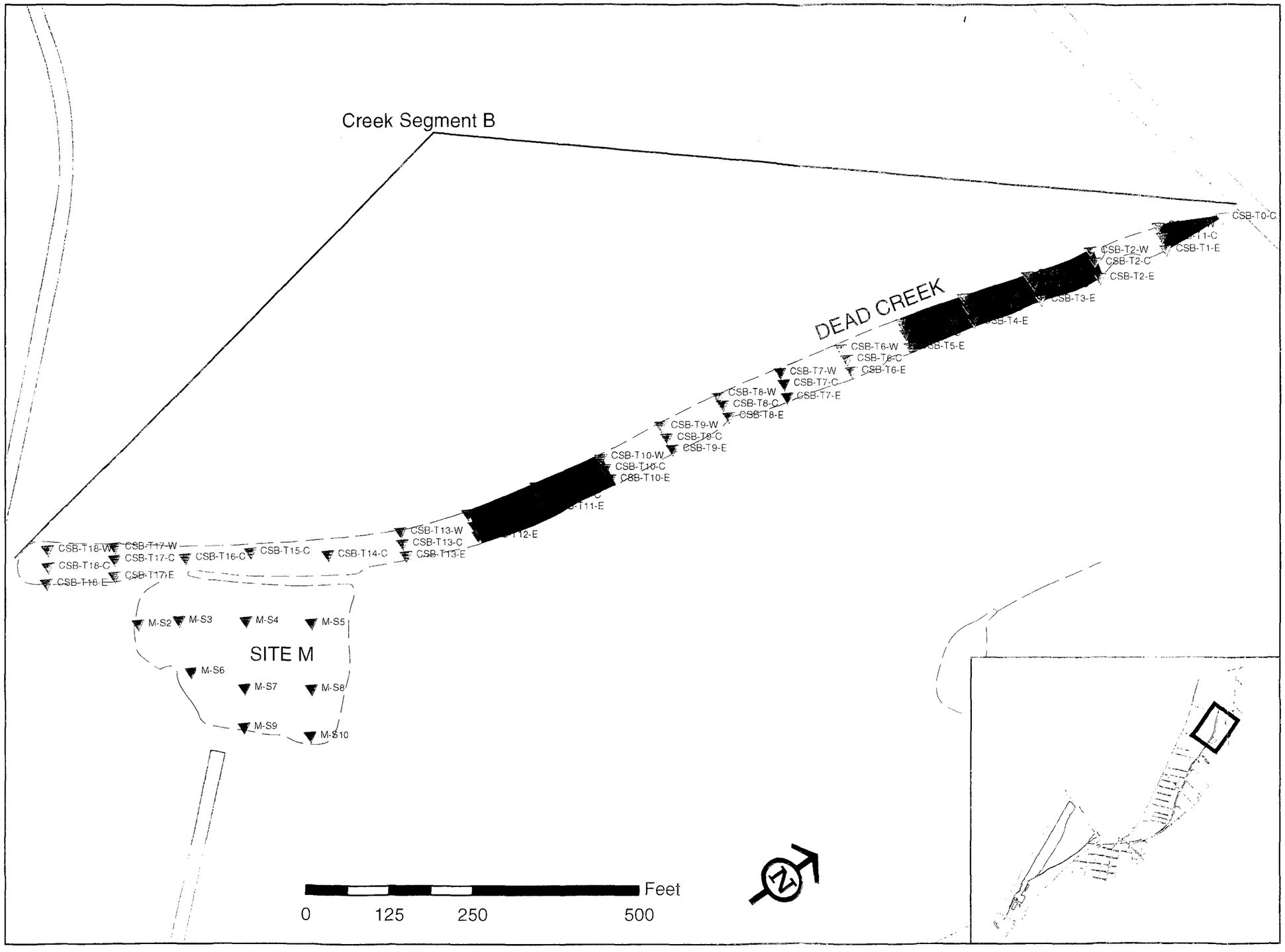
SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
	Prepared by: JSG	Scale: NTS	1-1
	Project Mgr: WBS	Office: NJ	
	File No: 06655005	Project: 06655J	

Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 1-2
Creek Segment B
Creek Bottom Soil
Remedial Action Area



LEGEND

- Sample Locations
- Water
- Roads
- Remedial Action Area

Solutia, Inc.
Remediation Technology Group
St. Louis, Missouri

ENSR INTERNATIONAL

June 21, 2002
Revision 0

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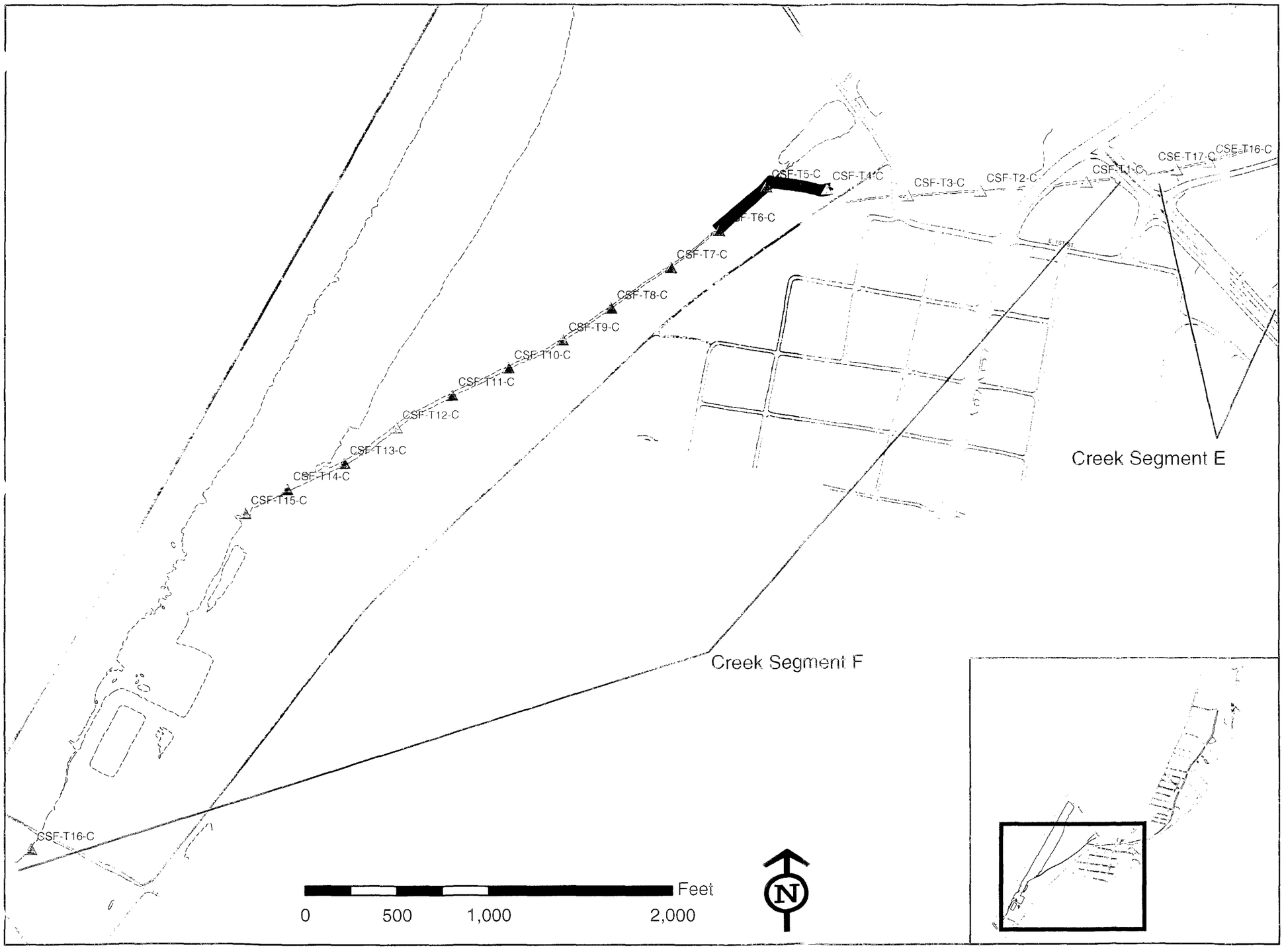
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 1-3

Creek Segment F
Creek Bottom Soil
Remedial Action Area



LEGEND

- Sample Locations
- Water
- Roads
- Remedial Action Area

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ENSR INTERNATIONAL

June 21, 2002
Revision 0

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Section 2.0

2.0 Site Characterization

On May 31, 2000, the United States Environmental Protection Agency issued a Unilateral Administrative Order to Monsanto Company and Solutia Inc. (Docket No. V-W-99-C-554) pursuant to section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended, 42 U.S.C. Section 9606(a). This Order, which was modified on August 29, 2001, required the following response activities at Sauget Area 1 Creek Segments B and Site M, Creek Segments C, D, E and F at the lift station at Old Prairie du Pont Creek, which are located in Sauget and Cahokia, Illinois:

Not what order requires

- Implementation of a Removal Action to mitigate the threats posed by presence of contamination in Dead Creek sediments and certain adjacent soils and their potential migration via overflow and flood waters from the Site;
- Removal of materials from Sauget Area 1 CS-B (creek sediments, creek bed soils and flood plain soils); CS-C, D, E and F (non-native creek sediments only); Site M (pond sediments and pond bottom soils) and non-native sediments in the lift station sump, while minimizing adverse impacts to area wetlands and habitat;
- Dewatering, excavation and transfer of contaminated sediment and soil to an on-site containment cell; and
- Placement of membrane liner material over CS-B and in all other excavated areas where, based on post-removal sample results, such liner is determined to be necessary.

The Order required Solutia to conduct these removal activities to abate a potential imminent and substantial endangerment to the public health, welfare or the environment that may be presented by the actual or threatened release of hazardous substances at or from the site. A Time-Critical Removal Action was appropriate for the following reasons:

1) The threat of migration due to sediment mobilization and downstream transport during flood conditions in Creek Segment B and Site M. Sediments in CS-B and Site M contain Zinc, Copper, Lead, Barium, Nickel and PCBs with maximum concentrations of 71,000 ppm; 44,800 ppm; 24,000 ppm; 17,300 ppm; 3,500 ppm and 17,000 ppm, respectively.

2) Although the culvert at the downstream end of Creek Segment B was blocked sometime between 1940 and 1970, the Village of Cahokia has installed a high level overflow to mitigate flooding due to the plugged culvert. In

addition, the Village has attempted to pump water from Creek Segment B to Creek Segment C to prevent flooding of residential areas and Judith Lane. These actions, taken to protect homes and transportation routes, create a threat of migration due to downstream movement of sediments during flood conditions.

3) The threat of migration due to sediment mobilization and downstream transport during flood conditions in Creek Segment C. Sediments in CS-C contain Zinc, Copper, Barium, Nickel, Lead and PCBs with maximum concentrations of 21,000 ppm; 17,200 ppm; 4,700 ppm; 2,300 ppm; 1,300 ppm and 23 ppm, respectively..

4) The threat of migration due to sediment mobilization and downstream transport during flood conditions in Creek Segment D. Sediments in CS-D contain Zinc, Copper, Nickel, Barium, Lead and PCBs with maximum concentrations of 6,950 ppm; 1,630 ppm; 665 ppm; 622 ppm; 480 ppm and 12 ppm, respectively.

5) The threat of migration due to sediment mobilization and downstream transport during flood conditions in Creek Segment E. Sediments in CS-E contain Zinc, Copper, Barium, Nickel, Lead and PCBs with maximum concentrations of 9,970 ppm; 8,540 ppm; 3,690 ppm; 2,130 ppm; 1,270 ppm and 60 ppm, respectively.

6) An evaluation of the factors identified in Section 300.415 of the National Contingency Plan and attendant concerns for risks posed by sediments in Creek Segment B and Site M and Creek Segments C, D and E.

Parties, identified by USEPA, who generated wastes that were disposed of, released into and/or transported wastes to Sauget Area 1, including parties whose wastes migrated from various disposal areas into other sites or segments of Dead Creek, include but are not limited to the following:

- Amax Zinc
- American Zinc
- Cardinal Construction Company
- Cerro Copper Products
- Darling Fertilizer
- ExxonMobil
- Industrial Disposal, Inc.
- Midwest Rubber
- Monsanto Company/Solutia Inc.
- Paul Sauget
- Rogers Cartage
- Ruan Transportation Corporation
- Sauget and Company
- Sterling Steel Casting Co.
- Village of Sauget
- Waggoner and Company
- US Chemical Warfare Service

Sediment removal was completed in February 2002 when the last of 46,000 cubic yards of sediments from Creek Segments B, C, D, E and F, Site M and the lift station sump were

transferred to the RCRA/TSCA-compliant, on-site containment cell. Post-removal creek bottom soil sampling was started in October 2001 and completed in February 2002. Sample analysis and data validation were completed in May 2002. Validated data were used to prepare an Engineering Evaluation/Cost Analysis, a Human Health Risk Assessment and an Ecological Risk Assessment for creek bottom soil in Creek Segments B, C, D, E and F and Site M. This work was done to fulfill the requirements of Section I - Jurisdiction and General Provisions of the UAO:

> "The Order also requires ... post-removal sampling in all excavated areas. The post removal sampling results will be used in the [Sauget] Area One EE/CA and RI/FS processes to determine what, if any, excavated areas in addition to CS-B may require further remediation under the EE/CA process."

and Section V. 3. 4. Excavated Area Soil Sampling:

> " After the sediment and soils removal has taken place, Respondents shall collect soil samples from, at a minimum, all excavated areas of CS-B, C, D, E at and a portion of F, and the basin area located at the lift station at 100 ft. intervals (to be referred to as "transects"), starting at the upstream end of the channel at Queeny Road and terminating near the downstream end of the channel at Route 3. Each creek transect, and sample location, shall be identified and numbered for reference purposes. Sampling at each creek transect shall occur at a frequency of no less than 3 samples per transect. Of the 3 samples, one shall be located at the transect center line and the other two shall be located equidistant to the center and the edge of the excavation area. Due to the fact that soils leaching to groundwater is the primary concern, bottom soil samples shall be extracted using TCLP and analyzed for Total Compound List/Total Analyte List (TCL/TAL) parameters and dioxin/furans.
>
> Soil samples shall be collected from the bottom of Site M at 100 ft. grid intervals covering the entire excavated area. Pond bottom soils will be extracted using the TCLP and analyzed for TCL/TAL parameters and dioxin/furans."

Dead Creek was also investigated by Solutia under a January 21, 1999 AOC that required collection of waste, sediment, surface water, soil, air and groundwater data as part of a site investigation program called the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan. Data collection was started in September 1999 and completed in April 2000. Waste, sediment, surface water, soil and air data were incorporated into an Engineering Evaluation/Cost Analysis Report and groundwater data were used to prepare a Remedial Investigation/Feasibility Study Report. Both documents were submitted to USEPA Region 5 as a combined report in January 2001 and revised in accordance with Agency comments in June 2001. Background information

and analytical data used to prepare this Dead Creek Final Remedy EE/CA was obtained from the Engineering Evaluation/Cost Analysis and Remedial Investigation/Feasibility Study Report prepared by Roux Associates for Solutia Inc and submitted to USEPA on June 8, 2001.

2.1 Site Description and Background

2.1.1 Site Location and Physical Setting

Sauget Area 1 is situated in a floodplain of the Mississippi River that is called the American Bottoms. It is located on the eastern side of the river directly opposite St. Louis, Missouri. As a whole, the floodplain encompasses 175 square miles, is 30 miles long, and has a maximum width of 11 miles. It is bordered on the west by the Mississippi River and on the east by bluffs that rise 150 to 200 feet above the valley bottom. The floodplain is relatively flat and generally slopes from north to south and from east to west. Land surface lies between 400 and 445 feet above mean sea level (MSL). Locally across Sauget Area 1, the topography consists of nearly flat bottomland with slight irregularities. Elevations across the study area range from 400 to 410 feet MSL, and the land surface trends in a southeastward/northwestward direction.

Dead Creek, a 17,000 ft. long intermittent stream located in Sauget and Cahokia, St. Clair County, Illinois, is part of the Sauget Area 1 Site (Figure 2-1). Dead Creek is an urbanized drainage channel situated in an industrial and residential setting that was subdivided into six segments by IEPA during past investigations of Sauget Area 1:

Creek Segment A	Alton & Southern Railroad to Queeny Avenue
Creek Segment B	Queeny Avenue to Judith Lane
Creek Segment C	Judith Lane to Cahokia Street
Creek Segment D	Cahokia Street to Jerome Lane
Creek Segment E	Jerome Lane to Route 157
Creek Segment F	Route 157 to Old Prairie du Pont Creek

Creek Segment A - Creek Segment (CS) CS-A was the northernmost segment of Dead Creek. It was approximately 1,800 feet long and 100 feet wide, running from the Alton & Southern Railroad to Queeny Avenue. This segment of the creek originally consisted of two holding

ponds, which were periodically dredged. For several years, CS-A and available downstream segments (e.g., ones that were not blocked off) received direct wastewater discharges from industrial sources and served as a surcharge basin for the Village of Sauget (formerly the Village of Monsanto) municipal sewer collection system.

Cerro Copper performed an IEPA approved remedial action at CS-A in 1990. Approximately 27,500 tons (20,000 cubic yards) of contaminated sediments were removed to Resource Conservation and Recovery Act (RCRA) and Toxic Substance Control Act (TSCA) permitted facilities. CS-A is now backfilled and covered with crushed gravel. Before backfilling, a high-density polyethylene (HDPE) membrane was installed in the excavated channel.

Creek Segment B - Creek Segment CS-B extends for approximately 1,800 feet from Queeny Avenue to Judith Lane. Fencing restricts access to this segment of Dead Creek. Land use surrounding CS-B is primarily commercial with a small residential area near the southern end of this segment. Agricultural land lies to the west of the creek and south of Site G although a portion of this land is now occupied for the RCRA/TSCA-compliant containment cell constructed for the Dead Creek Time Critical Sediment Removal Action. Some time after 1932 and before 1943, the Judith Lane culvert, which allowed creek water to pass from CS-B to CS-C, was blocked.

Sauget Area 1 Sites G, L and M border Creek Segment CS-B. Sites G and L are described below in Section 2.1.5.3. Site M is located along the eastern side of Dead Creek Segment B (south of Site L) at the western end of Walnut Street in the Village of Cahokia. Site M was originally a sand borrow pit in the middle to late 1940s. This pit was approximately 59,200 square feet in size and approximately 14 feet deep. Prior to the Dead Creek Time Critical Sediment Removal Action, Site M was hydraulically connected to Dead Creek through an eight-foot opening at the southwest portion of the pit. Wastes from Dead Creek Segment B migrated into Site M via this connection in the past. Previous investigations indicated that approximately 3,600 cubic yards of contaminated sediments were contained within the pit. Fencing, installed by USEPA and Solutia, restricts access to Site M.

Creek Segment C - Creek Segment CS-C extends for approximately 1,300 feet from Judith Lane south to Cahokia Street. Land use is primarily residential along both sides of CS-C.

Creek Segment D - Creek Segment CS-D extends for approximately 1,100 feet from Cahokia Street to Jerome Lane. Land use is primarily residential along both sides of CS-D.

Creek Segment E - Creek Segment CS-E extends approximately 4,300 feet from Jerome Lane to the intersection of Illinois Route 3 and Route 157. Land use surrounding CS-E is predominantly commercial with some mixed residential use. Dead Creek passes through a buried culvert at the Parks College parking lot at the south end of CS-E.

Creek Segment F - Creek Segment CS-F is approximately 6,500 feet long and extends from Route 157 to the Old Prairie du Pont Creek. CS-F is the widest segment of Dead Creek, and a wetland area extends out from both sides of the creek. This area, known as the Borrow Pit Lake, is a long (6,000 ft), narrow (500 ft) rectangular water body that intersects CS-F near the midsection of the lake (Figure 2-1). Borrow Pit Lake is a borrow pit that was excavated during construction of a local levee system sometime after 1954. CS-F discharges into the Borrow Pit Lake about 1,400 ft. north of its southern end. The Borrow Pit Lake, in turn, discharges to Old Prairie du Pont Creek at the Metro East Sanitary District lift station. Metro East uses the Borrow Pit Lake as a storm water detention basin, not turning the lift station pumps on until water levels in the Borrow Pit Lake reach EL 10 ft., which results in a water depth of 6 to 7 feet in the BPL. When not being used as a storm-water detention basin, water in the BPL is stagnant with little or no water flow or dries up during periods of no or low precipitation.

2.1.2 Present and Past Facility Operations and Disposal Practices

Up until sometime in the 1930s, Dead Creek flowed through the property now occupied by Solutia Inc.'s William G. Krummrich (WGK) plant. In the 1930s, the Village of Sauget sewer system was installed. Prior to this installation, industrial process wastewater from many of the East St. Louis and Sauget Industries flowed directly into Dead Creek. Sometime in the 1930s, Monsanto filled in the portion of Dead Creek located on its property. Storm water continued to flow off the property into Dead Creek via a 36-inch diameter culvert under the railroad tracks at the south side of the property.

In 1932, the first public system of sewers was designed for the Village. The new sewers were constructed in 1932 and 1933. This included a 24-inch sewer north of Dead Creek running east to west. The 36-inch culvert under the railroad tracks remained in place but was not connected to the sewer at this time. An 18-inch sewer line that flowed from Route 3 eastward into Dead Creek was also included in the new system. The 18-inch line served Midwest Rubber and possibly Darling Fertilizer. It handled both storm water and process water. It may have also carried sanitary and commercial waste to Dead Creek.

The Village of Sauget installed Manhole 24 in the 24-inch sewer line at the north end of Dead Creek and ran the 36-inch culvert pipe (which ran under the railroad track to Dead Creek) into this manhole. By connecting the 36-inch pipe to the sewer system, the pipe could act as a conduit for water in the section of Dead Creek south of WGK to flow north into the sewer, and during times of overload on the sewer, the pipe would act as a conduit of sewer backflow into Dead Creek. At about this same time, Dead Creek was blocked at Judith Lane to function as a surge pond for the Village of Sauget sewer system.

In 1935, the creek was dredged between Monsanto's plant and Queeny Avenue. Dredged material was deposited along the east bank. Such dredging may have occurred more than one time.

In 1951, additional sewers along Mississippi Avenue were constructed. At this time, the 18-inch overflow line from Mississippi Avenue was connected to the Village sewer system so that normally only storm water would be discharged to Dead Creek. The industrial wastewater was discharged northward and stayed in the Village sewer system. The 18-inch line was still able to act as an overflow, however, for the rest of the system.

Cerro's effluent discharged through eight pipes directly into Dead Creek Segment A until 1966 when an interceptor line along Dead Creek was constructed for the purpose of discharging Cerro's waste water into the Village sewer system. An interceptor box was constructed during the Cerro sewer work. It was designed to allow the overflow of waste water from Manhole 24 to Dead Creek to continue. Even after the interceptor line was installed, it is possible that unidentified sewer discharges form Cerro entered the creek through the direct discharge pipes and through the Cerro connection to the Village sewer.

The amount of sewer discharges from area industries gradually decreased over the years. In 1966, various industries started to implement process changes that reduced the quantity of wastewater discharged into the sewer. After 1984, increased sewer capacity further reduced the frequency of overflows to Dead Creek.

In addition to the 18-inch overflow line that ran from Mississippi Avenue east to Dead Creek Segment B, there were two sewer overflow lines that entered CS-A on the east side. These two overflow lines are in addition to the junction box at the north end of the Creek. One outfall was on the north end of CS-A. The other line ran west from the 8-inch north-south line along Queeny Avenue to Dead Creek. This line was basically residential but could also have been a source of industrial discharges.

Based on the above description of the history of the use of Dead Creek as part of the Sauget Village sewer system, it is evident that any industry discharging wastewaters into the sewer is a suspect source of contamination in Dead Creek. The following descriptions give additional information on the industrial discharges into the Village sewer system.

Amax Zinc - The wastewater discharged from the plant contained zinc, copper, iron, cadmium, magnesium, and PCBs. Wastewater was directly discharged into Dead Creek at least until 1932, and likely continued for some time after that.

Cerro Copper - Cerro's waste water was known to include the following contaminants: arsenic, cadmium, copper, nickel, zinc, antimony, beryllium, lead, silver, chromium, oil and grease, chloroform, 1,1,1-trichloroethane, trichloroethene, methylene chloride, toluene, xylene, acetone, naphthalene, and phenanthrene.

Darling Fertilizer - The wastewater from the plant likely contained hydrofluosilic acid contaminated with metals and phosphorous.

Edwin Cooper & Company (now Ethyl) - Edwin Cooper and Company's discharges included acid and oil.

Midwest Rubber - Midwest discharged waste directly into the creek through an effluent pipe into CS-B. Wastewater would have contained pine tars, naphthalene, metals, PCBs and other waste oil. In 1971, sampling found rubber particles in the discharges as well as zinc. During sampling of wastewaters of many Sauget area industries in 1971, it was found that Midwest's wastewater flow contained PCBs.

ExxonMobil - Prior to 1932, when the sewer was installed, Mobil discharged directly into Dead Creek. Wastewater was discharged daily into the Village sewer system plant when the refinery was in operation up to 1970, then intermittently when the fuels terminal was in operation. The wastewater was likely a combination of petroleum process water after separation, cooling water and storm water. A May 6, 1982 USEPA memo states that Mobil was one of many industries discharging wastes into Dead Creek. Contaminants in Mobil's wastewater included petroleum hydrocarbons and heavy metals.

Monsanto - From 1917 to 1997, the Monsanto William G. Krummrich Plant in Sauget was engaged in the manufacture of various inorganic and organic chemicals including adipic acid, alkylbenzene, benzyl chloride, butyl benzyl chloride, calcium benzene sulfonate, caustic soda, chlorine, chlorinated cyanuric acid, chlorophenols, monochloroacetic acid, monochlorobenzene, 2,4-D, fatty acid chloride, muriatic acid, nitric acid, 4-nitrodiphenylamine, ortho-dichlorobenzene, ortho-nitrophenol, PCBs, para-dichlorobenzene, para-nitroaniline, para-nitrochlorobenzene, pentachlorophenol, phenol, phosphoric acid, phosphorous trichloride, phosphorus pentasulfide, potassium phenyl acetate, potash, Santoflex®, Santomerse®, Santolube® 393, sulfuric acid, 2,4,5-tricresyl phosphate, and zinc chloride. The waste-water stream leaving the plant varied over the years, but may have contained the following: nitric acid, sulfuric acid, hydrochloric acid, chlorine, and chlorinated and nitrated aromatics.

Rogers Cartage - Rogers Cartage owned and operated a fleet of tanker trucks. They hauled products for many companies in the Metropolitan St. Louis area. During Rogers operation in Area 1, it washed out tanker trucks that had been used to transport product and some wastes for many of the industries in Sauget and the surrounding area. Trucks were washed with caustic solution. Wash water was discharged to the ground and to the Village of Sauget sewer system.

Documentation in the field indicates that Rogers began using the sewer system in 1969. Rinse water was discharged into the Village sewer south trunk and then traveled to the sewer connection at the north end of Dead Creek. Also, there was a 12-inch sewer overflow line that was located at the Rogers Cartage property and discharged directly into Dead Creek Segment A near Queeny Avenue. It was installed sometime before 1965. This line was installed to allow relief of the northward traveling sewer line at times of heavy flow. Thus, this line would have caused truck-washing wastewater to discharge into Dead Creek. A Monsanto memo dated January 5, 1971 indicates that a significant quantity of PCBs in the Village sewer probably came from Roger's terminal.

The types of products Rogers hauled which were likely washed into the Village sewer including Dead Creek were: ortho-nitrochlorobenzene, monochlorobenzene, ortho-dichlorobenzene, sulfuric acid, maleic anhydride, phosphorus oxychloride, Therminol®, alkylbenzene, muriatic acid, monochloroacetic acid, aroclors, oleum, phosphorus oxychloride, phosphorus trichloride, phenol, petroleum and oil additives, zinc sulphate solution, sulfuric acid, phenol, acetone, toluene, benzene, and xylene mixtures.

Sauget & Company - Sauget & Company, or its predecessors, operated landfills at Sites G, H and I for a number of years. IEPA reported that waste from Site I would routinely overflow and leach into Dead Creek.

Sterling Steel - Cooling water from electric furnaces, compressors and air conditioning was discharged into the 24-inch sewer line at the north end of Dead Creek. PCB-containing materials were commonly used in casting facilities for fire prevention.

US Chemical Warfare Service - Spills and leaks at the plant were washed into the plant sewer that was connected to the Village sewer.

Waggoner and Company - Waggoner started operations on Site L in 1964. Waggoner owned/operated approximately 23 stainless steel trucks and a couple of rubber-lined trucks. They washed their trucks at Site L and drained the tank washings into Dead Creek. In addition, floor drains from the building flowed directly into Dead Creek. IEPA notified the company of its unacceptable discharges, and Waggoner responded that the discharges had been eliminated.

After the IEPA required that discharges to CS-A cease, Waggoner excavated a pit which was used by Waggoner until 1974 when the company was sold to Ruan.

In 1973, the IEPA visited Waggoner and found that a hole had been excavated nearby into which the tanker truck wash water discharged. Use of a second pit appears to have begun in 1973. According to an IEPA memorandum drafted by Mr. Tim Murphy (1992 to USEPA), these pits were designed to overflow into Dead Creek.

Ruan reportedly continued using the pit until 1978. The IEPA estimated that between 1971 and 1978, 164,000 gallons of wash water were disposed in the pit. The pit was not lined and consisted of medium to coarse-grained sand.

The following materials include those hauled by Waggoner and thus were likely washed into Dead Creek as rinsate from the truck washings: phosphorous trichloride, phosphorous oxychloride, biphenyl, aroclors, pyranols, phenol, alkylbenzene, petroleum additives, chloryl acetyl chloride, muriatic acid, monochloroacetic acid, sulfuric acid, chlorosulfuric acid, Santolube®, chlorosufonic acid, muriatic acid, sulfuric acid, oleum, plasticizers, caustic metal cleaners, oil additives, phosphoric acid, and Phostri (commercial name).

2.1.3 Geology/Hydrology/Hydrogeology

Geology - The American Bottoms are underlain by unconsolidated valley fill composed of recent alluvium, known as the Cahokia Alluvium, which overlies a unit of glacial material known as the Henry Formation. The Cahokia Alluvium is approximately 40 feet thick and consists of unconsolidated, poorly sorted, fine-grained material with some local sand and clay lenses. These alluvial deposits unconformably overlie the Henry Formation, which is composed of medium to coarse sand and gravel that increases in grain size with depth. This unit is approximately 95 feet thick and generally becomes thinner with increasing distance from the Mississippi River.

The valley fill throughout the floodplain is underlain by a bedrock system of Mississippian and Pennsylvanian age. The bedrock consists primarily of limestone and dolomite with some sandstone and shale, and is older in the central and western sections of the American Bottoms.

A generalized geologic cross is provided as Figure 2-2.

Two types of water-bearing formations exist in the American Bottoms: unconsolidated and consolidated. The unconsolidated formations (predominantly silt, sand, and gravel) are those that lie between the ground surface and the bedrock/gravel interface. The thickness of the unconsolidated formation varies throughout the area, but is typically estimated to be approximately 100 feet. Finer-grained sediments generally dominate at the ground surface and become coarser and more permeable with depth, creating semi-confined conditions within the aquifer. Thus, permeability and porosity increase in the unconsolidated formation with depth. The consolidated formations are deep bedrock units of limestone and dolomite that exhibit low permeability and are not considered to be a significant source for groundwater in the area.

As reported in "Groundwater Management in the American Bottoms, Illinois (Ritchey and Schict, 1982)," hydraulic properties of the unconsolidated aquifer have been determined from 10 aquifer tests and 100 specific capacity tests conducted on industrial, municipal, irrigation and relief wells. The coefficient of storage for the aquifer ranged from 0.002 to 0.155. Reported hydraulic conductivity values average 3,000 gallons per day per square foot (gpd/ft^2) which is equivalent to 1.4×10^{-1} cm/s.

Recharge to the aquifer occurs through four (4) sources: precipitation, infiltration from the Mississippi River, inflow from the buried valley channel of the Mississippi River, and subsurface flow from the bluffs that border the floodplain on the east.

Hydrology - The Mississippi River, bordering the American Bottoms to the west, is the major surface-water body draining the area fed by a complex network of natural and artificial channels that have undergone extensive improvement throughout the 20th Century. According to an investigation of ground-water resources conducted by the Illinois State Water Survey Division, at least 40 miles of improved drainage ditch have been constructed and the natural lake area in the center of the floodplain has been reduced by more than 40 percent.

Dead Creek serves as the main conduit for surface-water drainage through the Sauget Area 1 Site. The creek flows to a floodway south of Cahokia, which in turn discharges to the Cahokia

Chute of the Mississippi River. Surface drainage across the study area is generally toward Dead Creek, although site-specific drainage patterns are present:

- An emergency action response by the USEPA in 1995 resulted in the capping of Site G. Because of this, surface water flows radially away from the site.
- Drainage at Site H is typically toward Dead Creek, although the site is relatively flat and contains several depressions capable of retaining water. Water accumulating in these depressions due to precipitation infiltrates into the ash cinder cover rather than draining from the site across the surface.
- The majority of drainage at Site I is to the west although the grade is relatively flat. Water flows to an interceptor and is ultimately carried through a series of storm sewers and effluent pipes to the American Bottoms Regional Treatment Facility. Currently, storm water runoff from the southern end of Site I drains to a catch basin on the north side of Queeny Avenue. This catch basin drains into CS-B. Water also infiltrates into the subsurface due to the flay grade and permeable stone parking areas
- Drainage at Site L flows to the west toward the creek across a cover of highly permeable material (cinders).
- Site M is the recipient of surface runoff from a small residential area located to the southeast of the area. Surface water drains into Dead Creek through a cut-through located in the southwest corner of the site.
- Site N receives runoff from the surrounding area.

Flooding occurs in Sauget Area 1 during periods of significant precipitation due to low topographic relief, lack of a storm-water drainage system in developed areas and limited hydraulic capacity in Dead Creek resulting from under-sized road culverts. During such events, surface-water runoff is unable to drain sufficiently to prevent ponding and backup. The creek overflows at the same time that the banks and adjacent areas begin to flood due to lack of relief, resulting in flooding of the entire area.

Hydrogeology - Sauget Area 1 is located in the southwestern section of the American Bottoms floodplain. More specifically, it is situated south of East St. Louis, and extends approximately three-quarters to one mile east of the eastern bank of the Mississippi River. Stratigraphy beneath the site is much like that of the rest of the floodplain. The Cahokia Alluvium is about 30 feet thick and is a fine silty sand that is gray and brown in color. Below this, the unconsolidated deposits of the Henry Formation are present. Locally, the Henry Formation is characterized by

medium-to-coarse sand that becomes coarser and more permeable with depth. The thickness of this unit ranges from 140 feet near the river to about 100 feet on the east side of the site. Groundwater level is between 10 to 20 feet below ground surface, but fluctuates during times of heavy and light precipitation. Ground surface elevation ranges from 400 to 420 ft. amsl.

Geologic data show that the unconsolidated deposits range from 140 feet thick near the river to about 100 feet in the eastern part of the study area. At most locations, the contact between Cahokia Alluvium and the Henry Formation cannot be distinguished. However, three distinct hydrogeologic units can be identified: 1) a shallow hydrogeologic unit (SHU); 2) a middle hydrogeologic unit (MHU); and 3) a deep hydrogeologic unit (DHU). The 20 feet thick SHU includes the Cahokia Alluvium (recent deposits) and the uppermost portion of the Henry Formation. This unit is primarily unconsolidated, fine-grained silty sand with low to moderate permeability. The 30 feet thick MHU is the upper to middle, medium to coarse sand portion of the Henry Formation. It contains higher permeability sand than found in the overlying shallow hydrogeologic unit, and these sands become coarser with depth. At the bottom of the aquifer is the DHU, which includes the high permeability, coarse-grained deposits of the lower Henry Formation. This zone is estimated to be about 30 to 40 feet thick. In some areas, clays with limestone fragments were encountered 10 to 15 feet above the bedrock. Evidently, these deposits are a limestone bedrock weathering residuum.

Groundwater beneath Sauget Area 1 flows generally from east to west, toward the Mississippi river. Horizontal groundwater gradients beneath Sauget Area 1 average about 0.001 feet per foot (ft/ft) to the west. Downward vertical gradients occur on parts of the site, with varying magnitudes depending on location and season. Based on depth to water measurements made during the third and fourth quarters of 1999 and the first and second quarters of 2000 as part of the Sauget Area 1 Support Sampling Plan, depth to groundwater in the study area ranges from 7.3 to 25.5 feet below ground surface. Groundwater elevation ranges from 390.8 to 399.0 feet above mean sea level with ground surface elevations ranging from 405 to 416 feet above mean sea level. Groundwater level fluctuations of 2.4 feet and 4.6 feet were observed between Fall 1999 and Spring 2000 during SSP data collection activities. Highest and lowest depth to water and groundwater elevation data collected during the SSP are summarized below:

	Depth to Water	**Groundwater Elevation**

	(feet below ground surface)		(feet above mean sea level)	
	Highest	**Lowest**	**Highest**	**Lowest**
Third Quarter 1999	7.3	20.9	399.0	395.4
Fourth Quarter 1999	8.6	23.7	397.7	392.6
First Quarter 2000	9.7	25.5	396.6	390.8
Second Quarter 2002	NA	NA	401.8	392.8

Historical records of groundwater levels during high surface water levels are limited, however, some information is available. In August 1993, surface water level in the Mississippi River at St. Louis peaked at 429.4 ft. amsl, the highest recorded flood level. Groundwater elevation at Solutia's W.G. Krummrich plant was 405 ft. amsl during this flood. In 1981 and 1982, respectively, flood levels in the Mississippi River were 410 and 412 ft msl while groundwater levels at the Krummrich plant were 398 and 400 ft. msl.

Aquifer tests performed over a span of 30 years have established characteristics such as transmissivity, hydraulic conductivity, storage coefficient and groundwater velocity. Tests have been conducted for all three (3) groundwater units and are summarized as follows:

	Transmissivity gpd/ft	Hydraulic Conductivity	Storage Coefficient
Shallow Hydrogeologic Unit	141.5 gpd/ft	9.5 gpd/ft^2 (4 x 10^{-4} cm/s)	**Not Available**
Middle Hydrogeologic Unit	165,000 gpd/ft	3,300 gpd/ft^2 (1.6 x 10^{-1} cm/s)	0.04
Deep Hydrogeologic Unit	211,000 gpd/ft	2,600 gpd/ft^2 (1.2 x 10^{-1} cm/s)	0.002 - 0.100

Note: Results are averages.

2.1.4 Current and Past Groundwater Usage

Historically, ground water from the American Bottoms aquifer was a major source of water for the area and was used for industrial, public, and irrigation purposes. Ground-water levels prior to industrial and urban development were near land surface. Intensive industrial withdrawal and use and construction of a system of drainage ditches, levees, and canals to protect developed areas lowered the ground-water elevation for many years. However, by the mid-1980s, the ground-water levels increased due to reduced pumpage, high river stages, and high precipitation. Currently, no ground water is being pumped from the American Bottoms aquifer in the vicinity of Sauget Area 1 for public or industrial supply purposes. Nine individual residential wells have been identified within Sauget Area 1 and are listed in the SSP. These wells are used for irrigation purposes. Four were sampled as part of the SSP investigation. However, Cahokia and Sauget both have city ordinances that prohibit use of groundwater as potable water. The public water supply is the exclusive potable water source.

The source of drinking water for area residents is an intake in the Mississippi River. This intake is located at river mile 181, approximately three miles north of Dead Creek. The drinking water intake is owned and operated by the Illinois American Water Company (IAWC) of East St. Louis, and it serves the majority of residences in the area. IAWC supplies water to Sauget. The Commonfields of Cahokia Public Water District purchases water from IAWC and distributes it to portions of Cahokia and Centerville Township. The Cahokia Water Department also purchases water from IAWC and distributes it to small residential areas in the west and southwest portions of Cahokia.

The nearest downstream surface-water intake on the Illinois side of the Mississippi River is located at river mile 110, approximately 64 miles south of the study area. This intake supplies drinking water to residents in the Town of Chester and surrounding areas in Randolf County, Illinois. The nearest potentially impacted public water supply on the Missouri side of the river is located at river mile 149, approximately 28 miles south of Dead Creek. The Village of Crystal City, Missouri (pop. 4,000) located 28 miles south of Dead Creek, utilizes a Ranney well adjacent to the Mississippi River as a source for drinking water.

Although agricultural land is found throughout the immediate project area, this land is apparently not irrigated. The nearest irrigated land, other than residential lawns and gardens, is located in the Schmids Lake-East Carondelet area, which is south of Old Prairie du Pont Creek.

2.1.5 Surrounding Land Use and Population

Heavy industry has located on the east bank of the Mississippi River between Cahokia to Alton, Illinois for nearly a century. Industrial activity peaked in the 1960s. Although heavy industry has shut down throughout the American Bottoms, the Sauget area is still highly industrialized. In addition to heavy industry, the area currently has warehouses, trucking companies, commercial facilities, bars, nightclubs, convenience stores and restaurants. Residential areas are interspersed with the commercial and industrial areas in the American Bottoms region. According to 1990 census figures, the population of the Village of Cahokia is 17,550 people and the population of the Village of Sauget is 197 people. An additional 40,944 residents live in nearby East St. Louis.

2.1.5.1 Current Industrial Land Use

Industrial facilities operating in the area are listed below and their locations are shown on Figure 2-1:

West of Mississippi Avenue (Route 3)

Cahokia Marine Services	Coal Bulk Storage and Transfer
Eagle Marine Industries	Barge Terminal and Fleeting
Phillips Pipe Line Company	Petroleum Bulk Storage and Transfer
Onyx Environmental Services	Hazardous Waste Treatment
Peavey/ConAgra	Bulk Grain Storage and Transfer
River City Landscape and Supply	Lawn and Garden Product Storage
Slay Terminals	Coal Bulk Storage and Transfer
St. Louis Grain Company	Bulk Grain Storage and Transfer
AmerenUE	Electricity Distribution

East of Mississippi Avenue (Route 3)

Astaris	Phosphorous Pentasulfide Manufacturing
Big River Zinc	Zinc Refining
Cerro Copper	Copper Tubing Manufacturing
Ethyl Corporation	Petroleum Additives Manufacturing
Exxon/Mobil	Petroleum Bulk Storage and Transfer
Flexsys	Rubber Chemicals Manufacturing
Oxychem	Swimming Pool Chlorine Manufacturing
Solutia	Monochlorobenzene Production

Sterling Steel Castings	Steel Foundry

A number of petroleum, petroleum product and natural gas pipelines, operated by Explorer Pipeline Company, Marathon, Phillips Pipe Line Company, ExxonMobil and Laclede Gas, are also located in the area.

2.1.5.2 Past Industrial Land Use

Industrial facilities formerly operating in the area include:

Clayton Chemical/Resource Recovery Group - Clayton Chemical, which is owned by the bankrupt Resource Recovery Group (RRG), was built on a site used a railroad repair yard, complete with roundhouse and terminal, from 1930 to 1962. In 1962, a crude oil topping plant began operating at the site producing white gas, distillate fuel oils and residual bottoms materials. Clayton Chemical began solvent reclamation in the mid 1960s and continued until 1978. In 1983, IEPA modified the site's permit to allow acceptance and distillation of spent solvents. Clayton Chemical was sold to Emerald Environmental in December 1993 and later renamed the Resource Recovery Group. The Resource Recovery Group solvent reclamation facility was shut down and subject to a USEPA emergency response action in 2001.

Darling Fertilizer - Darling was in the business of manufacturing chemical fertilizers. The process appears to have involved acidulation of phosphate rock and the subsequent blending of the rock with nitrates, lime, etc. Darling abandoned operations sometime after 1965.

Midwest Rubber - Midwest Rubber began operations in 1928. The company reclaimed rubber, principally from discarded automobile tires by heating the tires in autoclaves with caustic solution or chloride solution.

Mobil - In 1917/1918, a refinery was constructed on this property for the processing of lubricating oil. Although the refinery closed in 1970, operations continued until 1993 as a terminal for unleaded gasoline and #1 and #2 fuel oils. Product was received via two pipelines and a barge terminal and distributed via trucks loaded at the terminal.

T.J. Moss - The T.J. Moss Tie Company, now owned by Kerr McGee Chemical Corporation (Kerr McGee), began as a wood treating operation at this location in 1927. The plant operated from 1927 through 1968, treating wood products such as railroad ties and utility poles with creosote, pentachlorophenol and other preservatives.

Union Electric - From 1923 until 1979, Union Electric operated a large electric generating station on the east bank of the Mississippi River. The power plant used coal for fueling its boilers until it switched to oil in the 1960s.

US Chemical Warfare Service - In 1940, Monsanto sold land that is now owned by Ethyl to the federal government. Construction of a plant to manufacture chemicals for use during World War II began shortly thereafter and was completed by early 1942. Monsanto then entered into a contract with the federal government (via the Chemical Warfare Service) to manufacture CC-2, which was used to impregnate soldiers' clothes during the war to protect them from chemical warfare agents. Raw materials used to manufacture CC-2 included chlorine, sulfuric acid, aniline, urea and hydrochloric acid. At the end of the war, the impregnate processes were stopped.

2.1.5.3 Waste Disposal Land Use

Historically, Sauget Area 1 and its surroundings were used for waste disposal. Six closed landfills (Sauget Area 1 Sites G, H and I and Sauget Area 2 Sites P, Q and R), four closed sludge lagoons (Sauget Area 2 Site O), a closed tank-truck wash-water lagoon (Sauget Area 1 Site L), a waste disposal site associated with an abandoned solvent reclamation facility (Sauget Area 2 Site S) and borrow pit backfilled with concrete rubble, demolition debris and chemical waste solids (Sauget Area 1 Site N) are located in the Sauget area.

Sauget Area 1 Sites G, H, I, L and N are described below.

Site G - Site G is located south of Queeny Avenue, east of the Wiese Engineering facility (some wastes extend underneath the facility), and north of a cultivated field in the Village of Sauget. Creek Segment B of Dead Creek is located along the eastern boundary of the site. Site G is approximately 5 acres in size and was operated and served as a disposal area for oil, drums

containing wastes, paper wastes, documents and lab equipment from sometime after 1940 to the late 1980s. EPA alleges that intermittent dumping continued until 1988, when most of the site was fenced pursuant to a USEPA removal action under CERCLA. Wastes located on the surface and/or in the subsurface of Site G spontaneously combusted and/or burned for long periods of time on several occasions prior to the second removal action conducted at the site by USEPA in 1995. This removal action involved the excavation of PCB, organics, metals, and dioxin contaminated soils on and surrounding Site G, solidification of open oil pits on the site, and covering part of the site (including the excavated contaminated soils) with a clean soil cap approximately 18 to 24 inches thick. Waste was removed up to the foundation of the Wiese Engineering facility, which is located west of the fenced portion of Site G. The fenced portion of the site is vegetated. Estimated volume of waste in Site G is 139,715 cubic yards.

Site H - Located south of Queeny Avenue, west of Falling Springs Road and west of the Metro Construction Company property in the Village of Sauget, Site H occupies approximately 5 acres of land. The southern boundary of Site H is located 400 feet south of the intersection of Nickell Avenue and Fallings Springs Road. Site H is connected to Site I under Queeny Avenue and together they were known to be part of the Sauget-Monsanto Landfill, which operated from approximately 1931 to 1957 [Note: Sauget used to be known as Monsanto until the name of the village was changed]. Site H is not currently being used and the property is graded and grass-covered.

Due to the physical connection to Site I, waste disposal at Site H was similar to that at Site I. Chemical wastes were disposed of here from approximately 1931 to 1957. Wastes included drums of solvents, other organics and inorganics, including PCBs, para-Nitroaniline, Chlorine, Phosphorous Pentasulfide, and Hydrofluosilic Acid. Municipal wastes were also reportedly disposed of at Site H. The estimated volume of waste in Site H is 168,432 cubic yards.

Site I - Located north of Queeny Avenue, west of Falling Springs Road and south of the Alton & Southern Railroad in the Village of Sauget, Site I was estimated to occupy approximately 19 acres of land. Former Creek Segment A of Dead Creek borders Site I on the site's western side. The site is currently graced and covered with crushed stone and used for equipment and truck parking. Site I was originally used as a sand and gravel pit that received industrial and municipal wastes. Site I is connected to Site H (see above) under Queeny Avenue and together

they were known to be part of the "Sauget-Monsanto Landfill." The landfill operated from approximately 1931 to 1957. Site I served as a disposal area for contaminated sediments from historic dredging of Dead Creek Segment A. Site I is estimated to contain 680,827 cubic yards of contaminated wastes and fill material.

Site L - Site L is located immediately east of Dead Creek Segment-B and south of the Metro Construction Company property in the Village of Sauget. Site L is the former location of two surface impoundments used from approximately 1971 to 1981 for the disposal of wash water from truck cleaning operations. Drums, drum fragments and uncontained solid waste were discovered in Site L test trenches during the EE/CA investigation (O'Brien & Gere, 2000). This site is now covered by black cinders and is used for equipment storage. The volume of contaminated fill material in Site L is 18,069 cubic yards.

Site N - Site N is located along the eastern side of Dead Creek Segment C, south of Judith Lane, and north of Cahokia Street in the Village of Cahokia. Initially developed as a borrow pit in the 1940s, this site encompasses approximately four acres used to dispose of concrete rubble, demolition debris and to a lesser degree waste solids and drummed media. Estimated volume of waste in Site N is 99,123 cubic yards with a depth of fill that may be as much as 30 feet. The site is currently inactive with access controlled by a fence along Falling Springs Road.

2.1.5.4 Waste Treatment Land Use

Onyx Environmental Services - An operating hazardous waste incineration facility, Onyx Environmental Services, is located in the area. Trade Waste Incineration (TWI), now Onyx Environmental Services, began by operating a hazardous waste incinerator on the Clayton Chemical property in 1980. Operations were relocated to their current site in 1983 after the property was purchased from the Illinois Central Gulf Railroad. Onyx currently operates three hazardous waste incinerators at this facility.

2.1.5.5 Wastewater Treatment Land Use

Two active wastewater treatment plants, the Village of Sauget PChem Plant and the American Bottoms Regional Treatment Facility, are located in this area. The Village of Sauget, Illinois

owns and operates the Physical/Chemical Wastewater Treatment Plant (PChem Plant) and the American Bottoms Regional Wastewater Treatment Facility (ABRTF). The ABRTF, brought on line in 1986, provides both primary and secondary treatment for its regional service area. Activated sludge biological treatment is used for primary treatment and aerated lagoons with powdered activated carbon addition are used for secondary treatment. It also provides secondary treatment for effluent from the PChem Plant. The PChem Plant provides primary treatment for Village wastewater that consists primarily of industrial wastewater. ABRTF discharges treated effluent to the Mississippi River at River Mile 178 (NPDES Permit No. IL0065145). Treated effluent is discharged through a 100 ft. long multi-port diffuser located 100 feet from shore just north of Sauget Area 2 Site R.

2.1.6 Sensitive Ecosystems

Threatened and Endangered Species - There are two federally listed endangered species that can potentially be found at (or adjacent to) the Sauget Area 1: 1) the Indiana bat (*Myotis sodalis*) and 2) the pallid sturgeon (Scaphirhynchus albus). One federally listed threatened species recorded in St. Clair County is the decurrent false aster (*Boltonia decurrens*). A federally listed species that is known to winter in the region and identified in the area is the bald eagle (*Haliaeetus leucocephalus*). The bald eagle was recently upgraded to threatened status from endangered by the USFWS.

Several state-listed bird species are likely to utilize the Sauget Area 1 including the: black-crowned night heron (*Nycticorax nycticorax*), little blue heron (*Egretta caerulea*), snowy egret (*Egretta thula*), great egret (*Casmerodius albus*) and pied-billed grebe (*Podilymbus podiceps*). The great egret and pied-billed grebe are listed as threatened by the State of Illinois; the other three species are listed as endangered by the State. Only the black-crowned night heron has been sighted within two miles of the site.

Sensitive Habitats - Sensitive habitats include those ecological systems that support endangered or threatened species (either federally or state listed) or support wetlands. Given the lack of endangered or threatened species expected at the site, habitat to support these species is not expected to be present. A pair of bald eagles attempted to nest on the southern end of Arsenal Island, south of the Sites, in 1993. While the pair failed in their first attempt, it is

not know whether later attempts were successful. A nest was observed in 1996, but it did not appear to be in use.

2.1.7 Meteorology/Climatology

The National Climatic Data Center (NCDC) describes the areas' climate as modified continental, subject to four-season climate changes without the undue hardship of prolonged periods of extreme heat or high humidity. To the south is the warm, moist air of the Gulf of Mexico; and to the north, in Canada, is a region of cold air masses. The convergence of air masses from these sources, and the conflict on the frontal zones where they come together, produce a variety of weather conditions, none of which are likely to persist for any great length of time.

Winters are brisk and seldom severe. Records since 1870 show that the temperature drops to zero degrees Fahrenheit (0°F) or below on average two to three days per year. The area stays at or below 32°F for less than 25 days in most years. Average snowfall for the area is a little over 18 inches per winter season. Snowfall of an inch or more is received on five to ten days in most years. The long-term record for the St. Louis area (since 1870) indicates that temperatures of 90°F or higher occur on about 35 to 40 days per year, and extremely hot days of 100°F or more are expected no more than five days per year.

The normal annual precipitation for the area is slightly less than 34 inches. The winter months are the driest, with an average total of about six (6) inches of precipitation. The spring months of March through May are normally the wettest with normal precipitation of just under 10.5 inches.

2.2 Previous Removal/Remedial Actions

2.2.1 1988 Creek Segment B Removal Action

Creek Segment B, Site M and most of Site G were fenced in 1988 pursuant to a USEPA CERCLA removal action.

2.2.2 1991 Creek Segment A Remedial Action

This northernmost segment of creek originally consisted of two holding ponds that were periodically dredged. On several occasions, CS-A was dredged and contaminated sediments were disposed onto adjacent Site I. Cerro Copper conducted remediation of CS-A in 1990 and 1991 under an IEPA-approved plan. Approximately 27,500 tons of contaminated sediments were removed from depths of 10 to 15 feet below grade and transported to RCRA and TSCA permitted facilities (Waste Management Landfill in Emelle, Alabama). Subsequent to the installation of an HDPE vapor barrier, CS-A was filled and covered with crushed gravel. A portion of CS-A is now used for controlled-access truck parking. Land use surrounding CS-A is industrial. Since Segment A was remediated under an Agreement with the IEPA, no additional remedial or removal actions are planned.

2.2.3 1995 Site G Removal Action

The USEPA conducted a CERCLA removal action at Site G in 1995 following several persistent fires that could not be put out by the local fire department. This removal action involved the excavation of PCBs, organics, metals and dioxin impacted soils on and surrounding Site G; solidification of open oil pits on the site; and covering part of the site with a clean soil cap approximately 18 to 24-inches thick. Most of Site G is vegetated and enclosed by a fence. A portion of Site G is believed to extend beneath the Wiese Engineering facility and parking area.

2.2.4 2001 Dead Creek Culvert Replacement Removal Action

The USEPA issued a UAO on June 21, 1999 requiring replacement of Dead Creek culverts to reduce the imminent threat that would result from Dead Creek flooding. Solutia and USEPA reached agreement that culverts at Cargill Road and the Terminal Railroad embankment would be replaced. Replacement of these culverts is complete.

The Agency issued another UAO on May 31, 2000 requiring Solutia to remove sediments from Creek Segments B, C, D and E and transfer them to an on-site containment cell. Fieldwork started in November 2000, installation of a sediment dewatering system was completed in January 2001 and sediment removal was completed in February 2002.

2.2.5 2002 CS-B, C, D, E and F and Site M Sediment Removal Action

USEPA issued a UAO on May 31, 2000 for a Time-Critical Removal Action of sediments in Creek Segment B, C, D and E to eliminate potential risks associated with flooding and to eliminate adverse ecological impact. On August 29, 2001, the UAO was amended to include sediments in CS-F between Route 157 (Camp Jackson Road) and the confluence of Dead Creek with the Borrow Pit Lake and sediments in the Old Prairie du Pont Creek lift station sump were included in the sediment removal action.

A Time Critical Removal Action Work Plan was submitted to the Agency on June 30, 2000 and approved in April 2001. On-site work began in November 2000 with the installation of a sediment dewatering system. Pursuant to USEPA's acceptance of the work plan and associated designs, **a 50,000 cubic yard**, RCRA/TSCA-compliant, on-site containment cell was constructed in 2001 adjacent to the west bank of Creek Segment B immediately south of Site G. Sediment transfer to the cell began shortly after Agency approval of containment cell construction in September 2001.

As of February 2002, all sediments were removed from CS-B, C, D, E and F and transferred to the on-site containment cell. A temporary cover was placed on the cell pending evaluation of human health and ecological risks, if any, associated with creek bottom soils and completion of the removal action. A total of 46,000 cubic yards of impacted sediments were removed from Dead Creek.

Additional removal actions for creek bottom soils are necessary as described in later in this report.

2.3 Source, Nature and Extent of Contamination

Historical information indicates that the primary sources of impacted sediment in Dead Creek were past industrial discharges to Dead Creek. Runoff from waste disposal areas and overflow from truck washing operations also contributed to the contamination observed in creek sediments. Potential transport pathways for impacted sediment in Dead Creek include downstream transport to the Borrow Pit Lake or Old Prairie du Pont Creek and leaching to creek

bottom soils, surface water and/or ground water. Overbank flooding to adjacent floodplain soils was originally thought to be a potential migration pathway, however, data collected during implementation of the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan established that overbank flooding was not a migration pathway.

The nature and extent of sediment, surface water, creek bottom soil contamination in Dead Creek and groundwater contamination adjacent to Dead Creek are discussed in the following sections:

- **Section 2.31 Sediments**
- **Section 2.3.2 Surface Water**
- **Section 2.3.3 Creek Bottom Soil**
- **Section 2.3.4 Groundwater**

2.3.1 Sediments

2.3.1.1 1998 Ecology and Environment Report Sediment Data

In 1998 Ecology and Environment, at the request of the USEPA, compiled all existing analytical data for Dead Creek (Volume 1, Sauget Area 1 Data Tables/Maps, February 1998). Data for CS-B, C, D, E and F and Site M sediments are summarized below.

Creek Segment B - A variety of organic and inorganic constituents were found in CS-B and Site M sediments including 39 SVOCs, 20 Metals, 10 VOCs, and PCBs. Of the 39 SVOCs, 16 were PAHs, 4 were Phthalates, 6 were Chorobenzenes, 5 were Chlorophenols and 2 were Methylphenols. Maximum detected constituent concentrations for CS-B and Site M sediment and soil are given below:

VOCs (parts per million)		SVOCs (parts per million)	
Acetone	5	Acenapthene	3
Benzene	<1	Acenaphthylene	<1
2-Butanone	14	Alkylbenzene	<1
Carbon Disulfide	<1	Anthracene	4
Chlorobenzene	13	Benzo(a)anthracene	9

Ethylbenzene	4
4-Methyl-2-Pentanone	<1
Tetrachloroethane	<1
Toluene	5
Xylene	<1

PCBs (parts per million)

PCBs	17,000

Metals/Inorganics (parts per million)

Antimony	45
Arsenic	306
Barium	17,300
Beryllium	3
Boron	76
Cadmium	400
Chromium	400
Cobalt	100
Copper	44,800
Lead	24,000
Mercury	30
Nickel	3,500
Selenium	602
Silver	100
Strontium	430
Thallium	4
Tin	32
Vanadium	100
Zinc	71,000
Cyanide	4

Benzo(b)fluoranthene	30
Benzo(k)fluoranthene	15
Benzo(g,h,I)perylene	13
Benzo(a)pyrene	10
Bis(2-ethylhexyl)phthalate	18
Butylbenzylphthalate	2
Chrysene	12
Chloronitrobenzene	240
2-Chlorophenol	<1
Dibenzo(a,h)anthracene	4
Dibenzofuran	2
1,2-Dichlorobenzene	12,000
1,3-Dichlorobenzene	4
1,4-Dichlorobenzene	220
2,4-Dichlorophenol	<1
Di-n-butyl phthalate	<1
Di-ni-octyl phthalate	3
2,4-Dimethylphenol	<1
Fluoranthene	21
Fluorene	6
Hexachlorobenzene	2
Indeno(1,2,3-cd)pyrene	9
Isophorone	<1
2-Methylnapthalene	8
4-Methylphenol	<1
Napthalene	10
4-Nitrophenol	3
Pentachlorophenol	2
Phenanthrene	15
Pyrene	27
1,2,4-Trichlorobenzene	3,700
1,2,4-Trichlorophenol	5
2,4,5-Trichlorophenol	<1
2,4,6-Trichlorophenol	<1

80% (8 of 10) of the VOC maximum concentrations are between <1 and 10 ppm and two (20%) are between 10 and 20 ppm. SVOC maximum concentrations are grouped as follows: 26 of 39 (67%) between <1 and 10 ppm, 6 of 39 (15%) between 11 and 20 ppm, 3 of 39 (8%) between 21 and 50 ppm and 4 of 39 (10%) greater than 100 ppm. Metals maximum concentration distributions are 5 of 20 (25%) between 1 and 50 ppm, 5 of 20 (25%) between 51 and 100 ppm, 5 of 20 (25%) between 101 and 1,000 ppm and 5 of 20 (25%) greater than 1000 ppm.

Using organic concentrations of greater than 100 ppm and metals concentrations of greater than 1,000 ppm as a basis for focusing on constituents with the highest detected concentrations, the following summary statistics result:

	Maximum Concentration	95% Confidence Interval	Arithmetic Mean	Geometric Mean	Minimum Concentration
Organics (ppm)					
PCBs	17,000	5,200	9,706	108	<1
1,2-Dichlorobenzene	12,000	9,675	1,367	10	<1
1,2,4-Trichlorobenzene	3,700	1,679	342	11	<1
Chloronitrobenzene	240	236	203	201	170

	Maximum Concentration	95% Confidence Interval	Arithmetic Mean	Geometric Mean	Minimum Concentration
Inorganics (ppm)					
Zinc	71,000	53,350	14,126	5,047	30
Copper	44,800	36,050	11,186	2,890	27
Lead	24,000	2,795	1,313	319	6
Barium	17,300	8,578	2,400	1,089	41
Nickel	3,500	3,000	937	367	12

Creek Segment C - A number of organic and inorganic constituents were found in CS-C sediments, however, there were fewer detected constituents than in CS-B. Detected constituents included 23 SVOCs, 15 Metals, 1 VOC, and PCBs. Of the 23 SVOCs, 16 were PAHs, 3 were Phthalates, 2 were Chorobenzenes and 1 was a Chlorophenol. No Methylphenols were detected. Maximum detected constituent concentrations for CS-C sediments reported in the 1998 Ecology and Environment report are given below:

VOCs (parts per million)	
4-Methyl-2-Pentanone	1.2
PCBs (parts per million)	
PCBs	23
Metals/Inorganics (parts per million)	
Barium	4,700
Beryllium	3

SVOCs (parts per million)	
Acenapthene	<1
Anthracene	<1
Benzo(a)anthracene	3.3
Benzo(b)fluoranthene	7.5
Benzo(k)fluoranthene	<1
Benzo(g,h,I)perylene	1.5
Benzo(a)pyrene	4.5
Bis(2-ethylhexyl)phthalate	<1
Butylbenzylphthalate	2
Chrysene	4.4

Boron	76	Dibenzo(a,h)anthracene	4
Cadmium	50	1,3-Dichlorobenzene	<1
Chromium	68	1,4-Dichlorobenzene	<1
Cobalt	32	Di-ni-octyl phthalate	<1
Copper	17,200	Fluoranthene	4.6
Lead	1,300	Fluorene	<1
Mercury	3	Indeno(1,2,3-cd)pyrene	4.3
Nickel	2,300	2-Methylnapthalene	<1
Selenium	3	Napthalene	<1
Silver	45	Phenanthrene	<1
Strontium	140	Phenol	<1
Vanadium	50	Pyrene	4.5
Zinc	21,000	1,2,4-Trichlorophenol	<1

Using organic concentrations of greater than 10 ppm and metals concentrations of greater than 100 ppm as a basis for focusing on constituents with the highest detected concentrations, the following summary statistics result:

Maximum	95% Confidence Concentration	Arithmetic Interval	Geometric Mean	Minimum Mean	Concentration
Organics (ppm)					
PCBs	23	22	8	2	<1
Inorganics (ppm)					
Zinc	21,000	21,000	12,047	8,643	1370
Copper	17,200	17,200	8,328	5,042	580
Barium	4,700	4,700	2,176	1,418	376
Nickel	2,300	2,300	1,276	955	177
Lead	1,300	1,300	883	819	467

Creek Segment D - Organic and inorganic constituents found in CS-D sediments included 10 SVOCs, 10 Metals, 1 VOC, and PCBs. Of the 10 SVOCs, 8 were PAHs and 2 were Phthalates. Chorobenzenes, Chlorophenols and Methylphenols were not detected. Maximum detected constituent concentrations for CS-D sediments reported in the 1998 Ecology and Environment report are given below:

VOCs (parts per million)		SVOCs (parts per million)	
4-Methyl-2-Pentanone	1.2	Benzo(b)fluoranthene	<1
		Benzo(a)pyrene	<1

Bis(2-ethylhexyl)phthalate	<1

PCBs (parts per million)

PCBs	1.2

Metals/Inorganics (parts per million)

Barium	622
Cadmium	42
Chromium	48
Cobalt	12
Copper	1,630
Lead	480
Mercury	1
Nickel	665
Vanadium	37
Zinc	6,590

SVOCs (parts per million)

Chrysene	<1
Dibenzo(a,h)anthracene	<1
Di-ni-butyl phthalate	<1
Di-ni-octyl phthalate	<1
Fluoranthene	<1
Indeno(1,2,3-cd)pyrene	<1
Pyrene	<1

Using organic concentrations of greater than 10 ppm and metals concentrations of greater than 100 ppm as a basis for focusing on constituents with the highest detected concentrations, the following summary statistics result:

	Maximum Concentration	95% Confidence Interval	Arithmetic Mean	Geometric Mean	Minimum Concentration
Organics (ppm)					
PCB	12	11	7	7	2
Inorganics (ppm)					
Zinc	6,590	5,959	2,724	2,528	917
Copper	1,630	1,584	894	815	247
Nickel	665	646	403	397	174
Barium	622	565	319	328	199
Lead	480	454	245	220	44

Creek Segment E - Twelve metals were found in CS-E sediments. In addition to PCBs, six SVOCs and three VOCs were observed in CS-E. Of the six SVOCs, five were PAHs and one was a Chlorobenzene. No Phthalates, Chlorophenols or Methylphenols were detected.

Maximum detected constituent concentrations for CS-E sediments reported in the 1998 Ecology and Environment report are given below:

VOCs (parts per million)	
Acetone	<1
Chlorobenzene	<1
Methylene Chloride	<1
PCBs (parts per million)	
PCBs	60
Metals/Inorganics (parts per million)	
Antimony	15
Arsenic	30
Barium	3690
Cadmium	23
Chromium	105
Cobalt	13
Copper	8,540
Lead	1,270
Mercury	2
Nickel	2,130
Vanadium	53
Zinc	9,970

SVOCs (parts per million)	
Benzo(b)fluoranthene	2.4
Chrysene	2.8
1,4-Dichlorobenzene	1.5
SVOCs (parts per million)	
Fluoranthene	<1
Phenanthrene	<1
Pyrene	5.3

Using organic concentrations of greater than 10 ppm and metals concentrations of greater than 100 ppm as a basis for focusing on constituents with the highest detected concentrations, the following summary statistics result:

	Maximum Concentration	95% Confidence Interval	Arithmetic Mean	Geometric Mean	Minimum Concentration
Organics (ppm)					
PCB	60				60
Inorganics (ppm)					
Zinc	9,970	8,659	3,233	1,195	382
Copper	8,540	6,518	1,807	697	108
Barium	3,690	3,003	931	499	174
Nickel	2,130	1,671	486	186	45

Lead 1,270	1,021	408	315	140

Nature and Extent of Sediment Contamination - Dead Creek serves as the main conduit for surface water drainage from Sauget Area 1. The Creek flows southwesterly from Creek Segment B, intersects a flooded former borrow pit (Borrow Pit Lake) near the downstream end of Creek Segment F and discharges to Old Prairie du Pont Creek through levee flap valves during low stage in the Mississippi River. When the Mississippi River is at flood stage, discharge from Dead Creek is pumped over the levee by a lift station. Land use along the creek is primarily residential with some mixed agricultural, industrial and commercial use. The widest segment occurs where Creek Segment F is bordered by several hundred feet of wetlands. A series of culverts have been installed in developed areas of the Creek to channel water under roads and parking lots.

Only five metals, Barium, Copper, Lead, Nickel and Zinc, were found in all study area sediments at concentrations higher than 100 ppm.

	CS-B	CS-C	CS-D	CS-E
Metals (> 100 ppm)				
Arsenic	•			
Barium	•	•	•	•
Cadmium	•			
Chromium	•			•
Cobalt	•			
Copper	•	•	•	•
Lead	•	•	•	•
Nickel	•	•	•	•
Selenium	•			
Silver	•			
Strontium	•	•		
Vanadium	•			
Zinc	•	•	•	•

PCBs were the only organic constituents found at concentrations higher than 1 ppm in sediment samples from Creek Segments B, C, D and E.

	CS-B	CS-C	CS-D	CS-E

VOCs (> 1 ppm)				
Acetone	•			
2-Butanone	•			
Chlorobenzene	•			
Ethylbenzene	•			
4-Methyl-2-Pentanone		•	•	
Toluene	•			
SVOCs (> 1 ppm)				
Acenapthene	•			
Anthracene	•			
Benzo(a)anthracene	•	•		
Benzo(b)fluoranthene	•	•		•
Benzo(k)fluoranthene	•			
Benzo(g,h,I)perylene	•	•		
Benzo(a)pyrene	•	•		
Bis(2-ethylhexyl)phthalate	•			
Butylbenzylphthalate	•	•		
Chrysene	•	•		•
Chloronitrobenzene	•			
Dibenzo(a,h)anthracene	•	•		
Dibenzofuran	•			
1,2-Dichlorobenzene	•			
1,3-Dichlorobenzene	•			
1,4-Dichlorobenzene	•			•
Di-ni-octyl phthalate	•			
Fluoranthene	•	•		
Fluorene	•			
Hexachlorobenzene	•			
Indeno(1,2,3-cd)pyrene	•	•		
2-Methylnapthalene	•			
Napthalene	•			
4-Nitrophenol	•			
Pentachlorophenol	•			
Phenanthrene	•			
Pyrene	•	•		•
1,2,4-Trichlorobenzene	•			
PCBs	•	•	•	•

2.3.1.2 2001 EE/CA and RI/FS Report

Solutia's or version?
use EE

Under a January 21, 1999 Administrative Order on Consent, Solutia Inc. performed an Engineering Evaluation Cost Assessment (EE/CA) for soil, sediment surface water and air and a

Remedial Investigation/Feasibility Study (RI/FS) for groundwater. The data collection portion of this work, called the Support Sampling Plan (SSP), started in September 1999 and finished in April 2000. As part of this work, a total of 25 sediment samples were collected from Creek Segments B, C, D, E and F (3 samples in each segment), Site M (one sample), the Borrow Pit Lake (3 samples), Old Prairie du Pont Creek (2 samples) and two reference areas (4 samples) to determine the extent of site-specific constituent migration. These sediment samples were analyzed for Metals, Mercury, Cyanide, Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), PCBs, Pesticides, Herbicides and Dioxin.

In addition to the broad-scan analyses described above, sediment samples were collected at approximately 100 locations in the creek channel and analyzed for industry-specific constituents (PCBs, Total Petroleum Hydrocarbons, Copper and Zinc.

As part of the work required by the Sauget Area 1 Support Sampling Plan, sediment bioassays were performed on sediments collected from the same locations as the sediment samples collected for broad-scan chemical analysis. Acute and chronic toxicity was performed on these samples using amphipods (Hyallela azteca) and midges (Chironomous tentans) as test organisms.

Analytical and toxicity test results for sediment samples collected in Creek Segments B, C, D, E and F, Site M, the Borrow Pit Lake, Old Prairie du Pont Creek and the Reference Areas are discussed in the following sections.

Creek Channel and Site M - Vertically integrated sediment core samples were collected in each segment of Dead Creek that runs through Sauget Area 1 except for CS-A where sediments were removed in 1990/91 (Section 2.2.1) plus three additional contiguous areas (Site M, Borrow Pit Lake and Old Prairie du Pont Creek).

These sediment samples were collected to evaluate the downstream extent of site- and industry-specific constituents and to provide information for use in the HHRA and the ERA. Sediment samples were analyzed for two separate sets of parameters – industry-specific constituents and broad-scan constituents.

Industry-Specific Constituents		Broad-Scan Constituents	
PCBs	USEPA Method 680	VOCs	USEPA Method 5035/8260B
TPH	USEPA Method 8015B	SVOCs	USEPA Method 8270C
Copper	USEPA Method 7211	Pesticides	USEPA Method 8081A
Zinc	USEPA Method 7951	Herbicides	USEPA Method 8151A
		PCBs	USEPA Method 680
		Dioxins	USEPA Method 8290
		Metals	USEPA Method 6010B
		Mercury	USEPA Method 7471A
		Cyanide	USEPA Method 9010B

TOC (USEPA Method 9060), Grain Size (ASTM D 422), Solids Content (USEPA Method SM2540G) were also determined for each sample.

The industry-specific constituents were analyzed to evaluate the distribution of constituents related to industrial sources located at the upstream end of Dead Creek. In the undeveloped areas of Dead Creek (CS-B and CS-F), sediment was collected at approximately 200 ft. intervals resulting in a total of 50 samples. Ten samples were collected in CS-B and 40 samples were collected in CS-F. In the developed portions of the Creek (CS-C, D and E), sediments were samples at 150 ft. intervals, a total of 47 sampling stations. Twelve sediment samples were collected in CS-C, 9 samples in CS-D and 26 samples in CS-E. Samples were collected in depositional areas at the thickest sediment profile. The channel (or creek) cross section was surveyed at each sampling station and sediment depth was measured at three locations perpendicular to the channel (channel center, halfway between channel center and right channel edge, and halfway between channel center and left channel edge). All industry-specific sediment sample analytical results are summarized in Table 2-1 and presented on Figures 2-3 to 2-8.

The broad-scan sediment samples were collected at three sampling stations in each creek segment and analyzed to evaluate the downstream extent of Target Compound List/Target Analyte List (TCL/TAL) constituents and to support the Sauget Area 1 EE/CA and RI/FS Human Health Risk Assessment and the Ecological Risk Assessment. These samples were collected using an Ekman grab sampler or by using stainless-steel trowels and spoons.

Selected analytical results are summarized below. All broad-scan sediment sample analytical results are presented in Table 2-2 and shown on Figures 2-8 to 2-17. Sediment toxicity test results are given in Table 2-3.

Creek Segment B

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-B	1	5,100	2,000	950	630	88	162.2
	2	11,000	7,900	3,800	1,000	500	226.1
	3	6,700	4,800	1,700	750	380	67.7

Summary statistics are as follows:

Sample Location	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-B						
• Maximum	11,000	7,900	3,300	1,000	500	226.1
• Average	7,600	4,900	1,988	793	323	152.0
• Minimum	5,100	2,000	950	630	88	67.7

The results of the sediment bioassays performed on CS-B sediments are summarized below.

Sample Location	Sample Number	Hyallela azteca		Chironomous tentans	
		Acute (% Survival)	Chronic (% Survival)	Acute (% Survival)	Chronic (% Survival)
CS-B	1	16*	8*	0*	-
	2	1*	-	0*	-
	3	64*	39*	100	52

Note: * Statistically significant at p </= 0.05

Site M - Site M sediments were characterized by collecting one surface sample using an Ekman grab sampler and four vertically integrated composite samples. Composite samples were collected from depths of 0 to 1.5 ft. at two locations and 0 to 2 ft. at two locations. Broad-scan analysis was done for the surface sample. VOC, SVOC, Pesticide, Herbicide, Dioxin, Metals and Mercury analysis was done on the four vertically integrated samples, which were the same analyses performed on waste samples collected in other Sauget Area 1 fill areas.

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
Site M	1	4,200	2,400	700	530	190	12.2

The results of the sediment bioassays performed on CS-B sediments are summarized below.

Sample Location	Sample Number	Hyallela azteca		Chironomous tentans	
		Acute (% Survival)	Chronic (% Survival)	Acute (% Survival)	Chronic (% Survival)
Site M	1	10*	85	96	40

Note: * Statistically significant at p </= 0.05

Creek Segment C - Support Sampling Plan analytical results for industry-specific constituents Copper, Zinc and PCB and prevalent metals Barium and Nickel in CS-C sediments are summarized below. Average PCB concentration in CS-C is 50 times lower than the average PCB concentration in CS-B, 2.6 ppm versus 152 ppm. Average Copper concentration in CS-C sediments (1900 ppm) is four times lower than the average concentration in CS-B (7600 ppm). Average Zinc and Lead concentrations are lower in CS-C than in CS-B (3567 vs. 4900 ppm and 360 vs. 793 ppm, respectively) while the average Nickel concentration is higher (500 vs. 323 ppm). Barium has an average concentration a factor of three lower than in CS-B (650 vs. 1998 ppm).

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-C	1	1,400	2,000	470	270	370	0.2
	2	2,200	4,500	680	330	580	2.9
	3	2,100	3,300	800	480	550	4.6

Summary statistics are as follows:

Sample Location	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-C						
• Maximum	2,200	4,500	800	480	580	4.6

• Average	1,900	3,567	650	360	500	2.6
• Minimum	1,400	2,900	470	270	370	0.2

Sediment bioassays of CS-C sediments indicate that two of the three samples did not exhibit acute or chronic toxicity for amphipods. However, two of the three samples showed acute toxicity to midges. SSP bioassay results for CS-C are summarized below:

Sample Location	Sample Number	Hyallela azteca		Chironomous tentans	
		Acute (% Survival)	Chronic (% Survival)	Acute (% Survival)	Chronic (% Survival)
CS-C	1	90	87	30*	-
	2	71	73	0*	-
	3	68*	76	96	63

Note: * Statistically significant at p </= 0.05

Creek Segment D - Support Sampling Plan analytical results for industry-specific constituents Copper, Zinc and PCB and prevalent metals Barium and Nickel in CS-D sediments are summarized below. Average PCB concentrations in CS-D are a factor of 3 lower than average PCB concentrations in CS-C, 0.9 ppm versus 2.6 ppm. Average Zinc concentration in CS-D sediments (2333 ppm) is a factor of 0.65 lower than in CS-C. The average Copper concentration of CS-D sediments is a factor of three lower than in CS-C. Barium, Lead and Nickel all have average concentrations that are about half the concentrations found in CS-C.

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-D	1	740	2,500	380	260	260	0.7
	2	730	2,700	400	230	260	1.2
	3	320	1,800	310	170	150	0.7

Summary statistics are as follows:

Sample Location	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-D						
• Maximum	730	2,700	400	260	260	1.2
• Average	597	2,333	363	220	223	0.9

• Minimum	320	1,800	310	170	150	0.7

Amphipod toxicity was not observed in any of the CS-D sediment bioassays while midge toxicity was observed in all of the CS-D bioassays. SSP bioassay results for CS-D are summarized below:

Sample Location	Sample Number	Hyallela azteca		Chironomous tentans	
		Acute (% Survival)	Chronic (% Survival)	Acute (% Survival)	Chronic (% Survival)
CS-D	1	90	84	44*	-
	2	88	81	48*	-
	3	90	79	71*	42*

Note: * Statistically significant at p </= 0.05

Creek Segment E - Support Sampling Plan analytical results for industry-specific constituents Copper, Zinc and PCB and prevalent metals Barium and Nickel in CS-E sediments are summarized below. Only one out of three samples in CS-E had a detectable PCB concentration and it was almost the same as the average concentration found in CS-D, 1 ppm versus 0.9 ppm. Zinc, Copper, Barium, Lead and Nickel all have average concentrations lower than those in CS-D.

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-E	1	570	2,300	340	310	190	1.0
	2	350	1,800	290	190	130	BDL
	3	150	980	190	140	51	BDL

Summary statistics are as follows:

Sample Location	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-E						
• Maximum	570	2,300	340	310	190	1.0
• Average	357	1,693	273	213	124	-
• Minimum	150	980	190	140	51	BDL

Amphipod toxicity was observed in two of the three CS-E sediment bioassays while midge toxicity was observed in all of the CS-D bioassays. SSP bioassay results for CS-E are summarized below:

Sample Location	Sample Number	Hyallela azteca		Chironomous tentans	
		Acute (% Survival)	Chronic (% Survival)	Acute (% Survival)	Chronic (% Survival)
CS-E	1	23*	56*	91*	54
	2	76	91	16*	-
	3	85	50*	97	0*

Note: * Statistically significant at p </= 0.05

Creek Segment F - Support Sampling Plan analytical results for industry-specific constituents Copper, Zinc and PCB and prevalent metals Barium and Nickel in CS-F sediments are summarized below. Two out of three samples in CS-F had a detectable PCB concentration, however the detected concentrations of 0.083 ppm were significantly lower than the concentration detected in CS-E (1.0 ppm). Average Zinc, Copper, Barium, Lead and Nickel concentration are similar to those detected in CS-E.

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-F	1	160	950	150	110	90	0.083
	2	410	3,700	250	320	390	0.083
	3	240	1,600	270	110	180	ND

Summary statistics are as follows:

Sample Location	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
CS-F						
• Maximum	410	3,700	270	320	390	0.083
• Average	270	2,083	223	180	197	-
• Minimum	160	950	150	110	90	ND

Amphipod toxicity was observed in none of the three CS-F sediment bioassays while midge toxicity was observed in all of the CS-F bioassays. SSP bioassay results for CS-F are summarized below:

Sample Location	Sample Number	Hyallela azteca		Chironomous tentans	
		Acute (% Survival)	Chronic (% Survival)	Acute (% Survival)	Chronic (% Survival)
CS-F	1	91	84	31*	-
	2	86	70	16*	-
	3	83	76	10*	-

Note: * Statistically significant at p </= 0.05

Borrow Pit Lake - Eight sediment samples were collected along the north/south centerline of the Borrow Pit Lake, at sampling intervals of 400 feet, and analyzed for industry-specific constituents. Cross-sections and sediment depth measurements were not performed in the BPL. Three sediment samples were collected for broad-scan analysis: 1) one sample in the backwater portion of the BPL upstream of the confluence with Dead Creek, 2) one sample immediately upstream of the confluence with Dead Creek and 3) one sample immediately downstream of the confluence with Dead Creek.

Support Sampling Plan analytical results for industry-specific constituents Copper, Zinc and PCB and prevalent metals Barium and Nickel in Borrow Pit Lake sediments are summarized below. None of three samples in the Borrow Pit Lake had a detectable PCB concentration. Average Zinc, Copper, Barium, Lead and Nickel concentrations are all lower than those in CS-F.

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
BPL	1	48	320	410	54	54	ND
	2	64	370	420	58	54	ND
	3	36	250	240	34	35	ND

Summary statistics are as follows:

Sample Location	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)

BPL

• Maximum	64	370	420	58	54	ND
• Average	49	313	357	49	48	ND
• Minimum	36	250	240	34	35	ND

Amphipod toxicity was observed in none of the three BPL sediment bioassays while midge toxicity was observed in all of the BPL bioassays. SSP bioassay results for the BPL are summarized below:

Sample Location	Sample Number	Hyallela azteca		Chironomous tentans	
		Acute (% Survival)	Chronic (% Survival)	Acute (% Survival)	Chronic (% Survival)
BPL	1	89	75	40*	-
	2	96	73	14*	-
	3	91	84	53*	-

Note: * Statistically significant at p </= 0.05

Old Prairie du Pont Creek - To evaluate the impact of the Dead Creek discharge on sediment quality in Old Prairie du Pont Creek, one sample was collected upstream and one sample was collected downstream of the confluence of Dead Creek and Old Prairie du Pont Creek. The upstream sample was collected 200 ft north (upstream) of the confluence so that possible previous effects of flooding and flow reversals would not affect the collection of the background sample. As reported in the 1996 Hazard Ranking System (HRS) package prepared by PRC Environmental Management, Inc. for USEPA Region V, a background sampling station was located 200 feet north (upstream) of the confluence of Dead Creek and Old Prairie du Pont Creek. The sediment background sample was collected at this approximate location.

Samples were collected in depositional areas at the thickest sediment profile and analyzed for broad-scan constituents. Channel cross-sections were surveyed at each sampling station, and sediment depth was measured at three locations perpendicular to the channel (channel center, halfway between channel center and right channel edge, and halfway between channel center and left channel edge).

Support Sampling Plan analytical results for industry-specific constituents Copper, Zinc and PCB and prevalent metals Barium and Nickel in Old Prairie du Pont Creek sediments are summarized below. None of three samples in Old Prairie du Pont Creek had a detectable PCB concentration. Average Zinc, Copper, Barium, Lead and Nickel concentrations are all lower than those in the Borrow Pit Lake.

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
OPDC	Upstream	15	63	140	16	17	ND
	Downstream	14	58	140	16	15	ND

Summary statistics are as follows:

Sample Location	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
OPDC						
• Maximum	15	63	140	16	17	ND
• Average	14	60	140	16	16	ND
• Minimum	14	58	140	16	15	ND

Amphipod toxicity was observed in none of the two Old Prairie du Pont Creek sediment bioassays while midge toxicity was observed in both of the Old Prairie du Pont Creek bioassays. SSP bioassay results for Old Prairie du Pont Creek are summarized below:

Sample Location	Sample Number	Hyallela azteca		Chironomous tentans	
		Acute (% Survival)	Chronic (% Survival)	Acute (% Survival)	Chronic (% Survival)
OPDC	1	98	79	16*	-
	2	98	80	55*	-

Note: * Statistically significant at p </= 0.05

Reference Areas - Sediment samples were collected at two reference areas selected because they were physically comparable to those in the Dead Creek watershed and they were located away from the direct influence of industrial discharges. Reference area sampling was

performed to provide a basis for comparison with Dead Creek and Borrow Pit Lake analytical results.

Support Sampling Plan analytical results for industry-specific constituents Copper, Zinc and PCB and prevalent metals Barium and Nickel in Reference Area sediments are summarized below. None of four Reference Area samples had a detectable PCB concentration. Average Zinc, Copper, Barium, Lead and Nickel all have average concentrations lower than those in CS-E.

Sample Location	Sample Number	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
RA - 1	1	20	95	230	23	23	ND
	2	17	82	210	22	19	ND
RA - 2	1	16	61	170	17	18	ND
	2	23	96	220	26	26	ND

Summary statistics are as follows:

Sample Location	Copper (ppm)	Zinc (ppm)	Barium (ppm)	Lead (ppm)	Nickel (ppm)	PCB (ppm)
RA						
• Maximum	23	96	230	26	26	ND
• Average	19	84	208	22	22	ND
• Minimum	16	61	170	17	18	ND

Amphipod toxicity was observed in none of the two Reference Area sediment bioassays while midge toxicity was observed in both of the Reference Area bioassays. SSP bioassay results for the Reference Areas are summarized below:

Sample Location	Sample Number	Hyallela azteca		Chironomous tentans	
		Acute (% Survival)	Chronic (% Survival)	Acute (% Survival)	Chronic (% Survival)
RA - 1	1	98	65	13*	-
RA - 2	1	98	83	11*	-

Note: * Statistically significant at p </= 0.05

Nature and Extent of Sediment Contamination - While the sediments in Dead Creek contain a variety of individual VOCs, SVOCs, Metals, and Herbicides/Pesticides; Total SVOCs, Total PCBs, Dioxin TEQs and Zinc are representative indicator classes of compounds to evaluate sediment transport behavior in Dead Creek. The maximum concentrations of these constituents in the various downstream Creek segments are summarized below (upstream to downstream).

DEAD CREEK SEGMENT CONSTITUENT DISTRIBUTION				
	Maximum Concentration (μg/kg)			
Creek Segment	SVOCs	PCBs	Dioxins	Zinc (mg/kg)
Reference Areas	**ND**	**ND**	**0.006**	**96**
CS-B	19,830	226,140	12.497	26,000
CS-C	13,430	48,250	2.939	76,000
CS-D	7,810	10,616	0.673	19,000
CS-E	6,280	8,758	0.470	55,000
CS-F	194	6,290	0.332	11,000
Borrow Pit Lake	ND	ND	0.033	450
Prairie duPont Creek	ND	ND	0.004	63

Notes:
1) Sediments in CS-B, C, D, E and F were removal in 2001/02 under a UAO not complete
2) ND = not detected.
3) Dioxins reported as TEQs.
4) Reference Area concentrations are average concentrations.

Maximum detected SVOC and PCB concentrations are one to two orders of magnitude lower in Creek Segment F compared to Creek Segment B. No SVOCs or PCBs were detected in sediments from the Borrow Pit Lake or Old Prairie du Pont Creek. Dioxin and Zinc concentrations are at least three orders of magnitude lower in Borrow Pit Lake than in CS-B, and comparable to background concentration. Sediment toxicity was observed in all creek segments.

2.3.2 Surface Water

Surface-water samples were co-located with broad-scan sediment samples in Creek Segments B, C, D, E and F; the Borrow Pit Lake and Old Prairie du Pont Creek to evaluate the downstream extent of site-related constituents and to provide information for use in the HHRA

and the ERA. Surface-water samples were collected at the approximate upper, middle, and lower sections of each creek segment, a total of 15 samples. Three surface water samples were collected in the Borrow Pit Lake. One sample was collected in the backwater portion of the BPL to assess the effect of backwater conditions and/or the contribution of other sources. Two samples were collected to assess the impact of discharge from Dead Creek on the BPL. One of these two samples was collected immediately upstream of the confluence with Dead Creek and other sample was collected immediately downstream of the confluence. Surface water samples were also collected at Site M and Reference Area 1 and 2.

The twenty surface-water samples were collected at an approximate depth of 60 percent of the water column (measured from the top of the water column). Each sample was analyzed for VOCs, SVOCs, Pesticides, Herbicides, PCBs, Dioxin, Metals, Mercury, Cyanide, Fluoride, Total Phosphorous, Orthophosphate, Hardness, Total Dissolved Solids, Total Suspended Solids, Sufficient water was not available in the creek, i.e. the creek was essentially dry, to sample three of the stations in CS-C and two of the stations in CS-E.

Analytical results are summarized in Table 2-4. Color dot maps displaying the constituent concentrations at each sampling location are provided as Figures 2-18 through 2-27.

Surface-water sampling results indicate generally low concentrations of constituents throughout the study area. Total VOCs were detected at a maximum concentration of 18 µg/L in Creek Segment B, decreasing to none detected at the confluence with the Borrow Pit Lake. The primary VOC found in the Dead Creek surface-water samples was acetone (estimated values, typical laboratory artifact). Chlorobenzene was detected in one sample (SW-CSB-51) at a concentration of 2.8 µg/L (the Class I standard is 100 µg/L). Benzene was detected in one sample (SW-CSF-52) at a concentration of 1.7 µg/L (the Class I standard is 5 µg/L). SVOCs were detected in four of 20 samples (maximum detection = 8.22 µg/L) and were generally limited to PNA compounds typically found in industrial areas. PCBs were detected in one of 20 samples at an estimated concentration of 0.055 µg/L (Creek Segment D). Dioxin TEQs ranged from maximum values of 21.9 parts per quadrillion (ppq) in Creek Segment B to 5.3 ppq in the downstream sample from Old Prairie du Pont Creek. Average dioxin values measured in the reference area samples were 8.52 ppq (Reference Area 1) and 23.59 ppq (Reference Area 2).

Total pesticide concentrations in Dead Creek ranged from a high of 0.1218 µg/L in Creek Segment B to none detected in Creek Segment F and Old Prairie du Pont Creek. Maximum detected total pesticide concentrations in Borrow Pit Lake (0.037 µg/L) were less than the average concentrations found at the two reference areas (0.046 µg/L). Herbicides were detected in one of 20 samples (Creek Segment B) at a concentration of 1.0 µg/L (pentachlorophenol).

The maximum average concentrations of zinc, nickel and lead found in Dead Creek are at or below the average concentrations measured in the two reference areas. The average copper concentration in Creek Segment F and Borrow Pit Lake were below the average reference area concentrations, and no copper was detected in Old Prairie du Pont Creek.

These data indicate that constituent transport from sediments to surface water is not a significant pathway of concern. In addition, the UAO removal of sediments from Dead Creek Segments B, C, D, E and F will eliminate any future potential for migration by this route.

2.3.3 Groundwater

Shallow residential ground water bordering Dead Creek was sampled during the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan to evaluate the potential transport of constituents from Creek sediments and floodplain soils to ground water. This sampling program included sampling of four non-potable domestic wells and time-series sampling at two locations representative of residential areas. The time-series sampling was initially performed at three depth intervals (15, 20 and 40 ft bgs). Following the receipt of these sample results, the interval indicating the highest concentrations was pumped and samples were collected at 0, 12 and 24 hours after the start of pumping to evaluate any changes under sustained pumping conditions.

Ground-water samples were collected from four non-potable use domestic wells on Judith Lane that could be used for irrigation purposes to determine if contaminants were migrating from Dead Creek to these water-supply wells. Non-potable use domestic wells were sampled from the residences at 100 Judith Lane, 102 Judith Lane, 104 Judith Lane, and 109 Judith Lane. These wells are located in or near Creek Segment B, where impacted sediment concentrations were the highest detected in Dead Creek, and are less than 500 feet from each other.

Groundwater samples were analyzed for VOCs, SVOCs, Pesticides, Herbicides, PCBs, Dioxin, Metals, Mercury and Cyanide.

To further evaluate the effect of Dead Creek on groundwater, one shallow groundwater sample was collected at the end of Walnut Street immediately adjacent to Site M and another sample was collected on the east bank of Dead Creek at Judith Lane. Both of these locations are located in the central portion of Sauget Area 1 and are representative of residential areas. Groundwater samples at each of the two locations were collected at the water table (approximately 15 feet below the ground surface) and at depths of 20 and 40 feet below ground surface to bracket the typical completion depths of domestic wells in Southern Illinois. A total of six groundwater samples were collected; three at each sampling location. Samples were analyzed for VOCs, SVOCs, Pesticides, Herbicides, PCBs, Dioxin, Metals, Mercury and Cyanide.

After collection and analysis of the shallow groundwater samples at Walnut Street and Judith Lane, one MicroWell® was installed at each of these sampling station with its screened interval in the zone of highest detected constituent concentrations (approximately 40 feet below ground surface). These wells were continuously pumped for 24 hours using a peristaltic pump in order to stress the saturated zone during sampling and evaluate constituent concentration trends. Time-series samples were collected at approximately 0, 12, and 24 hours after the start of pumping. A total of six groundwater samples were collected; three at each sampling location. Samples were analyzed for VOCs, SVOCs, Pesticides, Herbicides, PCBs, Dioxin, Metals, Mercury and Cyanide.

Residential area shallow groundwater sampling locations are shown on Figure 2-28 and analytical results are summarized in Table 2-5.

The maximum concentration of Total VOCs detected was 1.5 µg/L at the residence at 102 Judith Lane. The maximum concentration of Total SVOCs detected was 6.7 µg/L after 24 hours of pumping at location TS-S1. Some of these SVOCs included concentrations above Class I standards. No PCBs were detected in any of the domestic wells. PCBs were initially detected at 0.06 µg/L at the 40-feet sampling interval at location SGW-S1; however, no PCBs were detected during subsequent time-series sampling at this location. Pesticides were detected at a

maximum concentration of 0.004 µg/L at the residence at 100 Judith Lane. Total Pesticides were initially detected at 0.04 µg/L at one of the time-series sampling locations; however, no pesticides were detected during subsequent time-series sampling events. Herbicides were not detected in any of the domestic wells. The maximum concentration of Total Herbicides detected at the time-series sampling locations was 0.66 µg/L at the 15-feet depth interval at location SGW-2. Total TCDD/TCDF TEQs were measured in all domestic wells at concentrations ranging from 2 ppq to 3 ppq. Total TCDD/TCDF TEQs measured in initial samples collected from the time-series sampling locations ranged from 2.8 ppq to 114 ppq; however, concentrations measured during subsequent time-series sampling under pumping conditions were all below 5 ppq.

These data indicate that constituent transport from sediments to groundwater water is not a significant pathway of concern. In addition, the UAO removal of sediments from Dead Creek Segments B, C, D, E and F will eliminate any future potential for migration by this route.

2.3.4 Creek Bottom Soil

During implementation of the Time-Critical Sediment Removal Action for Dead Creek, four objective criteria were used to identify sediment subject to removal:

- Origin - non-native vs. native sediments
- Stratigraphy - sediment/soil boundary
- Color - sediment color vs. creek bottom soil color
- Physical Characteristics
  - Un-confined compressive strength less than 500 pounds per square foot
  - Torvane shear strength less than 200 pounds per square foot
  - Moisture content greater than liquid limit
  - Moisture content greater than 60 percent.

Approximately 46,000 cubic yards of impacted sediments were removed from Dead Creek and transferred to the on-site containment cell in 2001/2002. After the impacted sediments were removed and the underlying creek bottom soils were exposed, soil samples were collected and analyzed for VOCs (Method 8260B), SVOCs (Method 8270C), Pesticides (Method 8081A), Herbicides (Method 8151A), PCBs (Method 680), Dioxin (Method 8280A) and Metals (Method

6010B). Soil samples were collected from 0 to 12 inches below the bottom of the excavated areas.

Originally, the UAO and Time-Critical Removal Action Work Plan specified that samples would be collected on transects (three samples per transect) spaced at 100 ft. intervals in the creek channel. Samples were to be collected on a 100 ft. grid in Site M. All samples were to be TCLP extracted and analyzed for Target Compound List/Target Analyte List parameters and Dioxin/Furans:

> "After the sediment and soils removal has taken place, Respondents shall collect soil samples from, at a minimum, all excavated areas of CS-B, C, D, E, a portion of F, and the basin area located at the lift station at 100 ft. intervals (to be referred to as "transects"), starting at the upstream end of the channel at Queeny Road and terminating near the downstream end of the channel at Route 3. Each Creek transect, and sample location, shall be identified and numbered for reference purposes. Sampling at each creek transect shall occur at a frequency of no less than 3 samples per transect. Of the three samples, one shall be located at the transect centerline and the other two shall be located equidistant to the center and the edge of the excavation area. Due to the fact that soil leaching to groundwater is the primary concern, bottom soil samples shall be extracted using TCLP and analyzed for Target Compound List/Total Analyte List (TCL/TAL) parameters and dioxin/furans.
>
> Samples shall be collected from the bottom of Site M at 100 ft. grid intervals covering the entire excavated area. Pond bottom soils will be extracted using the TCLP and analyzed for TCL/TAL parameters and dioxin/furans."

On November 30, 2001, USEPA modified the sampling program required by the UAO in response to a request from Solutia to reduce the sampling frequency within the creek segments. The post-removal sampling plan was revised as follows:

- **Creek Segment B (1800 ft. long)**
  - Composite of 3 sample locations into 1 sample for laboratory analysis
  - Transect each 100 feet for a total of approximately 18 samples
  - Broad scan analysis for each sample location
- **Creek Segment C (1300 ft. long)**
  - Composite of 3 sample locations into 1 sample for laboratory analysis
  - Transect each 150 feet for a total of approximately 9 samples
  - Broad scan analysis for each sample location
- **Creek Segment D (1100 ft. long)**

- Composite of 3 sample locations into 1 sample for laboratory analysis
- Transect each 200 feet for a total of approximately 6 samples
- Broad scan analysis for each sample location

- **Creek Segment E (4300 ft. long)**
  - Composite of 3 sample locations into 1 sample for laboratory analysis
  - Transect each 250 feet for a total of approximately 17 samples
  - Broad scan analysis for each sample location

- **Creek Segment F (6500 ft. long)**
  - Composite of 3 sample locations into 1 sample for laboratory analysis
  - Transect each 150 feet for a total of approximately 16 samples
  - Broad scan analysis for each sample location

Creek bottom soil sampling locations are shown on Figures 2-29, 2-30 and 2-31.

This change in the post-removal soil sampling requirements reduced the total number of samples from 255 to 66. Since this change was approved after the start of creek bottom soil sampling and creek bottom soil sampling was already underway using the sampling interval specified in the UAO, the total number of samples collected was 106 broken down as follows:

• **CS - B**	49	Samples	15	Three Sample Transects
			4	One Sample Transects
• **Site M**	9	Samples	9	100 ft. Grid
• **CS - C**	9	Samples	9	One Sample Transects
• **CS - D**	6	Samples	6	One Sample Transects
• **CS - E**	17	Samples	17	One Sample Transects
• **CS - F**	16	Samples	16	One Sample Transects

TCLP & Total
Total need to meet UAO ⇒ Not done
TCLP was done ⇒ will not be meet
⇒ How about using TCLP to see a Total is a conc Back calculate? TCLP vs. Total

While the November 30, 2001 modification of the post-removal soil sampling requirements changed the number of samples collected, the analyte list required by the UAO was not changed, i.e. "extracted using TCLP and analyzed for Total Compound List/Total Analyte List (TCL/TAL) parameters and dioxin/furans". TCLP extraction and analysis was selected as the analytical method in the UAO because "Due to the fact that soils leaching to groundwater is the primary concern, bottom soil samples shall be extracted using TCLP". During performance of the Sauget Area 1 Time-Critical Sediment Removal Action and the Sauget Area 1 EE/CA and RI/FS, it became apparent that Dead Creek had little or no impact on shallow groundwater (Section 2.3.4 below) and that total concentration analyses of creek bottom soil samples was needed to meet the UAO requirement that "The post removal sampling results will be used in

the Area One EE/CA and RI/FS process to determine what, if any, excavated areas in addition to CS-B may require further remediation under the EE/CA process.". For this reason, sample analyses were done on a total concentration basis not on a TCLP-extract basis. To address the issue of leaching to groundwater, 10 percent of the samples were to have both total concentration analyses and TCLP-extract analyses. Unfortunately, a misunderstanding between field sampling personnel and the analytical laboratory resulted in the laboratory analyzing the TCLP-extract samples for only TCLP parameters, not TCL/TAL parameters as required by the UAO. These TCLP analyses will not be used in this EE/CA because they do not provide the information needed to achieve the objective of evaluating the effect of creek bottom soil leaching on groundwater. This objective will be met by using shallow-groundwater quality data collected during performance of the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan.

Creek bottom soil sample analytical results are summarized below by creek segment. Note that all constituent concentrations are maximum detected concentrations reported in milligrams per kilogram (ppm). To facilitate discussion of nature and extent of migration, organic constituents with concentrations greater than 1 ppm and metals with concentrations greater than 1,000 ppm are highlighted in bold print. All analytical results are given in Tables 2-6 (Individual Constituent Concentrations) and Table 2-7 (Total Constituent Concentrations).

Creek Segment B - Creek Segment CS-B extends for approximately 1,800 feet from Queeny Avenue to Judith Lane. Fencing restricts access to this segment of Dead Creek. Land use surrounding CS-B is primarily commercial with a small residential area near the southern end of this segment. Agricultural land lies to the west of the creek and south of Site G although a portion of this land is now occupied for the RCRA/TSCA-compliant containment cell constructed for the Dead Creek Time Critical Sediment Removal Action. Two Sauget Area 1 waste disposal sites border CS-B. Site G, a five-acre former waste disposal site subject to Agency response actions in 1988 and 1995, is located on the west bank of Creek Segment B just south of Queeny Avenue. Site L, two former surface impoundments used for disposal of wash water from truck cleaning operations, is located on the east bank of Creek Segment B approximately 500 feet south of Queeny Avenue.

After removal of impacted sediments from CS-B, a 6-mil plastic membrane was placed on the creek bottom in the northern 500 feet of the channel and backfilled with dense-grade gravel to prevent contact of surface water with bottom soils. Non-woven geotextile was installed in the remainder of the channel to prevent erosion and downstream transportation of creek bottom soils during storm events. These precautionary measures were taken pending the outcome of the Human Health and Ecological Risk Assessments discussed below in Section 2.4.

CS-B Creek Bottom Soil Concentrations, mg/kg

Tran.	Total VOC	Total SVOC	Total Pest.	Total Herb.	Total PCBs	Dioxin TEQ	Copper	Lead	Nickel	Zinc
T0	**18.88**	**46.303**	0.88	ND	**29.73**	0.005	**10,000**	700	600	**6,800**
T1	0.996	0.387	0.137	0.002	**1.653**	<0.001	310	48	500	**2,700**
T2	0.387	0.013	0.010	0.002	0.249	<0.001	**2,000**	260	260	**2,300**
T3	**38.318**	**210.833**	0.001	0.034	**84.83**	0.017	390	400	130	**2,000**
T4	**1.101**	**2.39**	0.003	0.75	0.319	<0.001	440	77	280	**7,000**
T5	**1.675**	**1.865**	0.146	0.022	**2.577**	<0.001	250	52	250	**3,300**
T6	0.55	0.28	0.004	**6.103**	0.761	<0.001	570	95	220	**2,600**
T7	0.256	0.061	0.026	**4.605**	0.156	<0.001	500	55	190	**2,900**
T8	0.129	0.039	0.068	ND	0.318	<0.001	910	84	210	**5,400**
T9	0.575	0.013	0.023	**2.405**	0.127	<0.001	500	76	230	**1,900**
T10	0.635	0.124	0.032	0.002	0.073	<0.001	440	80	280	**1,900**
T11	0.233	0.056	0.008	0.070	1.053	<0.001	560	57	560	**11,000**
T12	0.571	**8.438**	0.010	0.048	0.160	<0.001	620	190	630	**6,600**
T13	0.23	0.077	0.001	0.041	0.039	<0.001	240	63	340	**1,900**
T14	0.100	0.003	ND	ND	ND	<0.001	33	15	130	**2,700**
T15	0.018	0.006	0.01	ND	0.096	<0.001	370	71	180	**1,200**
T16	0.155	2.945	0.18	0.017	0.12	0.001	**1,500**	100	170	**3,800**
T17	0.539	0.891	0.21	0.008	0.358	0.002	750	150	300	**3,200**
T18	2.951	0.078	ND	0.004	ND	<0.001	60	59	210	**2,500**

With the exception of zinc, which occurs at concentrations greater than 1,000 ppm in soils throughout CS-B, organic constituents with concentrations greater than 1 ppm and metals with concentrations greater than 1,000 ppm are primarily restricted to the northern 500 feet of Creek Segment B. Soil samples from CS-B Transects T0 to T5 have Total VOC concentrations ranging from 1.101 to 18.88 ppm, Total SVOC concentrations from 1.865 to 210.833 ppm, Total PCB concentrations of 2.577 to 84.85 ppm and Copper concentrations that range from 2,000 to 10,000 ppm. These creek bottom soil concentrations are found in the stretch of CS-B

immediately adjacent to Site G whose eastern boundary extends approximately 500 ft. south of Queeny Avenue.

Organic concentrations higher than 1 ppm occur at two other locations in Creek Segment B. One location is between Transects T6 and T9 where Total Herbicide concentrations range from 2.405 to 6.103 ppm. Another organic concentration high occurs at T12 with a Total SVOC concentration of 8.438 ppm. One metal concentration high occurs south of the northern 500 feet of CS-B, with a Copper concentration of 1,500 ppm at T16. There is no apparent pattern to the distribution of these constituent concentration highs.

Section V.3.B.5, Excavated Areas Bottom Liner Requirements, of the Sediment Removal Action UAO requires the following actions:

CS-B Isolation/excavation T0 to T5 T6 to T9 T16

> "After excavation and sampling, Respondents shall properly install and maintain a 40 mil, HDPE liner in CS-B of Dead Creek. A liner shall be installed in other excavated areas of Site M and CS-C, D, E and a portion of F, and the basin area located at the lift station, as determined to be necessary based on post-excavation sampling to isolated impacted soils from surface water."

Isolated impacted soils, as indicated by the concentrations observed at T0 to T5 (Total VOCs, Total SVOCs, Total PCBs and Copper), T6 to T9 (Total Herbicides) and T16 (Copper), can be isolated from surface water by installation of a liner, as required by the UAO, and/or by selective excavation of "hot spot" creek bottom soils. Excavated soils could be transferred to the on-site containment cell, which has approximately 19,000 cubic yards of additional capacity. check?

While there are no human health risks associated with Creek Segment B, adverse ecological impacts may result from exposure to creek bottom soils at Transects T0, T3, T4 and T11 (Section 2.4). Therefore, additional removal action is considered appropriate.

Site M - Site M is located along the eastern side of Dead Creek Segment B (south of Site L) at the western end of Walnut Street in the Village of Cahokia. Site M was originally a sand borrow pit in the middle to late 1940s. Prior to the Dead Creek Time Critical Sediment Removal Action, Site M was hydraulically connected to Dead Creek through an eight-foot opening at the southwest portion of the pit. During the sediment removal action, Site M was partially backfilled

with clean soil and vegetated. During high-water conditions, it will act as a storm water detention basin with a capacity of 4.6MM gallons of water. Fencing, installed by USEPA and Solutia, restricts access to the site.

Site M Bottom Soil Constituent Concentrations, mg/kg

Sam.	Total VOC	Total SVOC	Total Pest.	Total Herb.	Total PCBs	Dioxin TEQ	Copper	Lead	Nickel	Zinc
S1	----------	----------	----------	----------	NO SAMPLE	----------	----------	----------	----------	----------
S2	0.035	0.014	0.081	ND	0.532	<0.001	230	19	150	**1,400**
S3	0.958	**4.693**	0.028	ND	**1.293**	<0.001	610	99	500	**4,000**
S4	**1.915**	**1.11**	ND	0.041	**4.323**	<0.001	600	63	120	800
S5	0.068	0.490	0.147	ND	**1.003**	<0.001	770	27	260	**1,200**
S6	0.389	0.745	0.015	ND	**1.724**	<0.001	110	19	110	310
S7	**1.363**	**7.014**	ND	0.106	**9.967**	<0.001	**5,200**	250	**1,700**	**6,400**
S8	**1.225**	**1.65**	0.482	0.003	**1.554**	<0.001	920	82	300	**2,500**
S9	0.019	0.755	0.039	ND	**2.356**	<0.001	750	37	110	740
S10	0.159	**13.74**	**3.15**	**7.8**	**27.138**	0.005	**4,900**	270	**1,500**	**12,000**

PCBs were detected at a concentration greater than 1 ppm in 8 out of the 9 pond bottom soil sampling locations in Site M. PCB concentrations ranged from 1.003 to 27.138 ppm. Zinc was observed in concentrations ranging from 1,200 to 12,000 ppm at the 6 sampling locations with zinc concentrations greater than 1,000 ppm. Total VOCs, Total SVOCs, Total Pesticides and Total Herbicides where detected at concentrations greater than 1 ppm in isolated locations but there is no apparent distribution pattern to these detections with two exceptions. Samples S7 and S10 may represent isolated areas of impacted soils. S7 has Total VOC and Total SVOC greater than 1 ppm and Copper, Lead, Nickel and Zinc concentrations greater than 1,000 ppm. Total SVOC, Total Pesticide and Total Herbicide concentrations are greater than 1 ppm in S10 and Copper, Nickel and Zinc concentrations are greater than 1,000 ppm.

Since Site M was backfilled with three feet of clean soil and is fenced, it should pose no risk to public health and welfare. With the clean soil backfill, Site M will be inundated only under high water conditions and, therefore, there should be no risk to the aquatic ecosystem. Human health risks at Site M are summarized in Section 2.4. Aquatic ecological risks were not evaluated because Site M will be dry under most conditions and is covered by three feet of clean soil. No further action is considered appropriate.

Creek Segment C - Creek Segment CS-C extends for approximately 1,300 feet from Judith Lane south to Cahokia Street. Land use is primarily residential along both sides of CS-C. Site N, a former construction debris disposal area, is located on the east bank of Creek Segment C about 600 feet south of Judith Lane. Initially developed as a borrow pit, this site encompasses four acres used to dispose of concrete rubble, demolition debris and, to a lesser degree, waste solids and drummed media. The site is currently inactive with access controlled by a fence along Falling Springs Road.

CS- C Creek Bottom Soil Concentrations, mg/kg

Tran.	Total VOC	Total SVOC	Total Pest.	Total Herb.	Total PCBs	Dioxin TEQ	Copper	Lead	Nickel	Zinc
T1	0.240	ND	0.003	0.006	0.011	<0.001	81	22	200	**1,800**
T2	0.166	0.029	0.036	ND	0.178	<0.001	160	65	260	**1,900**
T3	0.046	0.003	0.001	ND	0.003	<0.001	120	28	570	**3,200**
T4	0.042	0.004	0.009	ND	0.063	<0.001	200	45	200	**1,500**
T5	0.012	ND	<0.001	ND	ND	<0.001	40	18	60	340
T6	0.813	0.079	0.010	ND	0.071	<0.001	250	140	170	**3,000**
T7	0.045	0.002	0.001	ND	ND	<0.001	53	32	400	**3,400**
T8	0.022	0.002	0.009	0.007	0.027	<0.001	100	33	330	**2,700**
T9	0.018	0.002	ND	ND	ND	<0.001	53	20	250	**2,000**

No organic concentrations exceed 1 ppm and, with the exception of zinc, all metal concentrations are below 1,000 ppm. There are no human health or ecological risks associated with creek bottom soils in CS-C (Section 2.4). Therefore, no further action is considered appropriate.

Creek Segment D - Creek Segment CS-D extends for approximately 1,100 feet from Cahokia Street to Jerome Lane. Land use is primarily residential along both sides of CS-D.

CS-D Creek Bottom Soil Constituent Concentrations, mg/kg

Tran.	Total VOC	Total SVOC	Total Pest.	Total Herb.	Total PCBs	Dioxin TEQ	Copper	Lead	Nickel	Zinc
T1	0.162	0.202	0.004	0.005	ND	<0.001	79	39	90	**6,400**

T2	0.006	0.382	0.014	0.071	0.292	<0.001	130	150	180	**8,200**
T3	0.029	0.002	0.002	0.002	0.010	<0.001	84	36	250	**2,000**
T4	0.011	0.713	0.007	ND	0.009	<0.001	230	61	410	**3,100**
T5	ND	ND	0.013	ND	0.007	<0.001	190	23	260	**1,800**
T6	0.014	**1.428**	**1.091**	ND	**2.437**	<0.001	**1,600**	280	530	**3,100**

Zinc concentrations are greater than 1,000 ppm throughout the entire length of CS-D. With the exception of T6, no organic concentrations exceed 1 ppm. Total SVOC, Total Pesticide and Total PCB concentrations at T6 are 1.428, 1.091 and 2.437 ppm, respectively. The Copper concentration at T6 (1,600 ppm) exceeds 1,000 ppm. These isolated impacted soils are likely the result of deposition associated with the flow restriction created by the undersized culvert beneath Jerome Lane. Sample T7 was collected immediately upstream from this culvert.

There are no human health or ecological risks associated with creek bottom soils in CS-D (Section 2.4). Therefore, no further action is considered appropriate.

Creek Segment E - Creek Segment CS-E extends approximately 4,300 feet from Jerome Lane to the intersection of Illinois Route 3 and Route 157. Land use surrounding CS-E is predominantly commercial with some mixed residential use. Dead Creek passes through a buried culvert at the Parks College parking lot at the south end of CS-E.

CS-E Creek Bottom Soil Constituent Concentrations, mg/kg

Tran.	Total VOC	Total SVOC	Total Pest.	Total Herb.	Total PCBs	Dioxin TEQ	Copper	Lead	Nickel	Zinc
T1	0.094	0.003	0.003	ND	0.023	<0.001	380	58	260	**2,900**
T2	ND	0.002	0.003	0.003	0.030	<0.001	480	130	190	**1,300**
T3	0.03	ND	0.002	ND	0.004	<0.001	92	57	220	**2,300**
T4	0.070	ND	0.001	ND	ND	<0.001	240	39	220	**2,600**
T5	0.02	0.002	<0.001	0.035	0.002	<0.001	64	89	120	**1,600**
T6	ND	0.002	0.023	ND	0.086	<0.001	170	50	170	**2,600**
T7	ND	ND	0.002	ND	ND	<0.001	510	29	310	**2,900**
T8	0.106	ND	0.001	ND	0.029	<0.001	25	17	44	490
T9	0.002	ND	0.002	ND	ND	ND	39	26	160	**1,900**
T10	0.027	ND	<0.001	0.003	ND	ND	300	170	170	**2,500**
T11	0.002	0.21	0.003	ND	0.036	<0.001	88	33	67	690
T12	0.073	ND	<0.001	ND	ND	ND	33	28	120	**1,300**
T13	0.044	0.747	0.027	ND	0.917	<0.001	94	44	52	320
T14	0.023	ND	0.001	ND	ND	<0.001	40	25	140	830

T15	0.015	0.074	<0.001	ND	ND	<0.001	25	24	61	690
T16	0.263	**4.563**	0.051	0.016	**1.252**	<0.001	**4,300**	400	600	**5,900**
T17	0.038	**1.71**	0.089	ND	0.103	<0.001	350	120	200	**2,100**

Zinc concentrations are greater than 1,000 ppm throughout most of the length of CS-D (12 of 17 sampling locations). With the exception of T16 and T17, no organic concentrations exceed 1 ppm. Total SVOC and Total PCB concentrations at T16 are 4.563 and 1.252 ppm, respectively. The Copper concentration at T6 (4,300 ppm) exceeds 1,000 ppm. At T17, the Total SVOC concentration is 1.71 ppm.

There are no human health or ecological risks associated with creek bottom soils in CS-E (Section 2.4). Therefore, no further action is considered appropriate.

Creek Segment F - Creek Segment CS-F is approximately 6,500 feet long and extends from Route 157 to the Old Prairie du Pont Creek. CS-F is the widest segment of Dead Creek, and a wetland area extends out from both sides of the creek. This area, known as the Borrow Pit Lake, is a long (6,000 ft), narrow (500 ft) rectangular water body that intersects CS-F near the midsection of the lake (Figure 2-1). Borrow Pit Lake is a borrow pit that was excavated during construction of a local levee system sometime after 1954. CS-F discharges into the Borrow Pit Lake about 1,400 ft. north of its southern end. The Borrow Pit Lake, in turn, discharges to Old Prairie du Pont Creek at the Metro East Sanitary District lift station. Metro East uses the Borrow Pit Lake as a storm water detention basin, not turning the lift station pumps on until water levels in the Borrow Pit Lake reach EL 10 ft., which results in a water depth of 6 to 7 feet in the BPL. When not being used as a storm-water detention basin, water in the BPL is stagnant with little or no water flow or dries up during periods of no or low precipitation.

CS-F Creek Bottom Soil Constituent Concentrations, mg/kg

	Total VOC	Total SVOC	Total Pest.	Total Herb.	Total PCBs	Dioxin TEQ	Copper	Lead	Nickel	Zinc
T1	0.051	ND	<0.001	ND	ND	<0.001	73	21	93	530
T2	0.026	0.132	<0.001	ND	ND	<0.001	45	29	95	**1,100**
T3	0.017	**1.628**	0.032	ND	0.357	<0.001	27	24	36	**1,200**
T4	0.018	ND	ND	ND	ND	<0.001	24	21	32	**1,100**
T5	0.074	0.337	ND	0.006	0.001	<0.001	190	450	630	**15,000**
T6	0.086	0.197	0.008	ND	0.033	<0.001	280	45	250	**3,200**

T7	0.061	0.003	0.005	ND	0.014	<0.001	80	27	160	**1,600**
T8	0.039	0.002	<0.001	ND	ND	<0.001	99	28	150	**1,500**
T9	ND	0.002	0.003	0.008	0.009	<0.001	120	53	110	**1,400**
T10	ND	ND	<0.001	ND	ND	<0.001	180	41	94	**1,200**
T11	ND	0.002	0.001	**2.304**	ND	<0.001	110	23	300	**2,400**
T12	0.008	ND	0.002	ND	ND	<0.001	92	18	270	**2,400**
T13	ND	ND	ND	ND	ND	<0.001	23	8	68	400
T14	0.068	**1.211**	ND	0.002	0.025	<0.001	150	100	230	**1,700**
T15	0.019	0.496	ND	0.057	0.024	<0.001	750	13	130	950
T16	0.058	ND	0.006	ND	ND	<0.001	20	15	15	59

Organic constituent concentrations are found at concentrations greater than 1 ppm at three sampling transects in CS-F. Total SVOC concentrations of 1.628 and 1.211 were detected at transects T3 and T14 and Total Herbicide concentrations are 2.304 ppm at T11. There is no apparent distribution pattern to the isolated impacted soils. With the exception of zinc, which occurs at concentrations greater than 1,000 ppm in soils at 12 of 16 sampling transects in CS-F, all metal concentrations in CS-F are less than 1,000 ppm. Zinc concentration at one sampling station, 15,000 mg/kg at Transect T5, is driving ecological risk in Creek Segment F.

There are no human health risks associated with Creek Segment F. Adverse ecological impact may result from exposure to creek bottom soils at one transect, Transect T5 (Section 2.4). Therefore, additional removal action is considered appropriate. Section V.3.B.5, Excavated Areas Bottom Liner Requirements, of the Sediment Removal Action UAO requires the following actions:

> "After excavation and sampling, Respondents shall properly install and maintain a 40 mil, HDPE liner in CS-B of Dead Creek. A liner shall be installed in other excavated areas of Site M and CS-C, D, E and a portion of F, and the basin area located at the lift station, as determined to be necessary based on post-excavation sampling to isolated impacted soils from surface water."

Impacted creek bottom soil, as indicated by a Zinc concentration of 15,000 ppm observed at T5, can be isolated from surface water by installation of a liner or by selective excavation of "hot spot" creek bottom soils. Excavated soils could be transferred to the on-site containment cell, which has approximately 19,000 cubic yards of additional capacity. Given the isolated nature of the impacted soils in CS-F, selective excavation and transfer of zinc-impacted soil to the on-site containment cell is considered appropriate.

Nature and Extent of Soil Contamination - Zinc is ubiquitous in Dead Creek bottom soil, occurring at concentrations greater than 1,000 ppm in 57 out of the 66 sampling transects in CS-B, C, D, E and F. There are a few areas of isolated impacted soils in Creek Segments B, D, E and F and Site M where total organic constituent concentrations are greater than 1 ppm and Copper, Lead and Nickel concentrations are greater than 1,000 ppm:

• **Creek Segment B**	Transects T0 to T5	VOCs, SVOCs, PCBs and Copper
	T6, T7	Herbicides
	T9	Herbicides
	T12	SVOCs
	T16	Copper
• **Site M**	Samples S3 to S10	VOCs, SVOCs, Pesticides, Herbicides, PCBs Copper, Nickel
• **Creek Segment D**	T6	VOCs, Pesticides, PCBs Copper
• **Creek Segment E**	T16, T17	SVOCs, PCBs Copper
• **Creek Segment F**	T3	SVOCs
	T11	Herbicides
	T14	SVOCs

Creek bottom soil samples CS-B T0 to T5 were collected from the northern end of Creek Segment B adjacent to Site G. After sediment removal, a plastic liner was installed and the channel was backfilled with dense-grade gravel. Samples T6, T7, T9, T12 and T16, which are isolated areas of impacted creek bottom soil, were collected 600, 700, 900, 1200 and 1600 ft. south of the north end of the 1800 ft. long channel. Section V.3.B.5, Excavated Areas Bottom Liner Requirements, of the Dead Creek Sediment Removal Action UAO requires the following actions in Creek Segment B after sediment removal:

> "After excavation and sampling, Respondents shall properly install and maintain a 40 mil, HDPE liner in CS-B of Dead Creek."

Impacted soils at T0 to T5, T6, T7, T9, T12 and T16 will be isolated from the environment by installation of the channel liner described in Appendix 1. Trespasser contact with these soils will

be prevented by installation of rip-rap on top of the HDPE liner and maintenance of existing fencing around Creek Segment B. Worker exposure will be controlled with institutional controls.

Section V.3.B.5, Excavated Areas Bottom Liner Requirements, of the Dead Creek Sediment Removal Action UAO also requires the following actions after sediment removal:

> "A liner shall be installed in other excavated areas of Site M and CS-C, D, E and a portion of F, and the basin area located at the lift station, as determined to be necessary based on post-excavation sampling to isolated impacted soils from surface water."

Site M was backfilled with three feet of clean soil during the Dead Creek Sediment Removal Action to stabilize the site. Impacted soils at S3 to S10 are isolated from the environment by this clean soil. Trespasser contact with these soils is prevented by the clean soil cover and existing fencing around Site M. Worker exposure will be controlled with institutional controls.

Creek Segment F creek bottom soil samples T3, T11 and T14 are isolated impacted areas that can be controlled by excavation and transfer to the on-site containment cell if the Human Health and Ecological Risk Assessments indicate that exposure to these soils may result in actual or potential human health or ecological impacts in excess of acceptable risk ranges.

2.4 Summary of Risks

As stated in the sediment removal action UAO, "The post removal sampling results will be used in the Area One EE/CA and RI/FS process to determine what, if any, excavated areas in addition to CS-B may require further remediation under the EE/CA process." A Human Health Risk Assessment and an Ecological Risk Assessment were performed by ENSR and Menzie-Cura, respectively, using the creek bottom soil sample analytical data. Risk assessment results are summarized in Section 2.4.1 - Human Health Risk Assessment and Section 2.4.2 - Ecological Risk Assessment. Risk assessment reports are included in Volume 2 - Human Health Risk Assessment and Volume 3 - Ecological Risk Assessment.

2.4.1 Human Health Risk Assessment

ENSR conducted the Human Health Risk Assessment (HHRA) in accordance with the USEPA approved August 6, 1999 Sauget Area 1 EE/CA and RI/FS Support Sampling Plan HHRA Work Plan. It was performed using data from creek bottom soil samples collected from the study area after completion of sediment removal (Section 2.3.4). Samples were collected and analyzed in accordance with the methods, procedures and protocols included in the September 9, 1999 Sauget Area 1 Support Sampling Plan, Field Sampling Plan, Quality Assurance Project Plan and Health and Safety Plan. Background or reference area sediment sample analytical results from the January 2001 Sauget Area 1 EE/CA and RI/FS Support Sampling Plan Data Report were also used in this HHRA.

VOCs, SVOCs, Pesticides, Herbicides, PCBs, Dioxin, Metals, Mercury, Cyanide analytical results were evaluated for inclusion in the HHRA during the data evaluation and hazard identification process of the HHRA. Based on this evaluation, sixteen Constituents of Potential Concern (COPCs) were identified. In addition to PCBs and Dioxin, the COPCs included the following constituents:

SVOCs

- 1,4-Dichlorobenzene
- 4-Nitroaniline
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Bis(2-ethylhexyl)phthalate
- Dibenzo(a,h)anthracene
- Pentachlorophenol

Metals

- Arsenic
- Copper
- Nickel

Pesticides

- Dieldrin
- Heptachlor
- Heptachlor epoxide

Access to Dead Creek is generally uncontrolled except for Creek Segment B, which is secured with a fence. Therefore, two exposure scenarios were evaluated in the HHRA: 1) a recreational receptor (i.e., teenager) exposed to COPCs in the creek bottom through wading or swimming and 2) a construction worker exposed to soil during excavation activities in the creek channel.

Potential carcinogenic risks for a recreational teenager exposed to creek bottom soils in Creek Segments B, D, E and F and pond bottom soils in Site M are within the target risk range of 1E-6 to 1E-4.

	Potential Risk		Hazard Index	
	RME	MLE	RME	MLE
CS-B	1.95E-06	6.61E-07	2.77E-02	1.25E-02
CS-D	7.30E-07	7.02E-08	3.58E-02	2.91E-03
CS-E	1.69E-07	3.77E-08	9.78E-03	1.69E-03
CS-F	1.40E-07	3.29E-08	1.84E-03	4.18E-04
Site M	2.23E-05	2.32E-06	2.19E-01	2.68E-02

Hazard Indices for each segment are less than 1.0.

Potential carcinogenic risks for a recreational teenager exposed to creek bottom soils in Creek Segments B, D, E and F and pond bottom soils in Site M are within the target risk range of 1E-6 to 1E-4.

	Potential Risk		Hazard Index	
	RME	MLE	RME	MLE
CS-B	2.56E-07	9.78E-08	3.67E-02	2.17E-02
CS-D	7.89E-08	9.17E-09	4.74E-02	4.46E-03
CS-E	1.78E-08	4.94E-09	1.14E-02	2.48E-03
CS-F	1.40E-08	4.16E-09	1.98E-03	5.71E-04
Site M	4.00E-06	3.62E-07	4.58E-01	4.27E-02

Hazard Indices for each segment are less than 1.0.

No constituents of concern were identified in Creek Segment C; all constituents present in CS-C creek bottom soils were screened out during the COPC identification process.

Based on the results of this baseline risk assessment, it is considered appropriate that no further remedial action is necessary to protect human health in Creek Segments B, C, D, E and F and Site M.

2.4.2 Ecological Risk Assessment

Menzie-Cura & Associates, Inc. evaluated ecological risks due to Dead Creek bottom soils exposed after completion of the Dead Creek Sediment Removal Action, which removed impacted sediment in Creek Segments B, C, D, E and F and Site M down to native soils.

Sediment and forage fish tissue analytical data from the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan were used to calculate site-specific sediment to fish uptake values for chemicals detected in sediment. These site-specific uptake factors, in conjunction with literature values for body burdens in fish associated with toxic effects, were used to back-calculate risk-based creek bottom soil concentrations protective of fish. These site-specific uptake factors were also used in food chain models to calculate risk-based creek bottom soil concentration protective of great blue heron. No risks were predicted for the river otter.

Risk-based concentrations were calculated for the following COPCs:

- **SVOCS** Bis(2-ethylhexyl)phthalate
- **Pesticides** Total DDT, Dieldrin, gamma-Chlordane
- **Total PCBs**
- **Dioxin TEQs**
- **Metals** Aluminum, Chromium, Copper, Lead, Zinc

Risk-based concentrations were compared to the 95% UCL concentrations in creek bottom soils for each creek segment except in Creek Segment D, where the average was used because not enough data were available to calculate UCLs. Risks due to PCBs and Zinc were identified in Creek Segment B and risks due to Zinc were identified in Creek Segment F. If Sampling Transects T0, T3, T4 and T11 were removed from the CS-B creek bottom soil data set and Sampling Transect T5 was removed from the CS-F data set, UCLs in both creek segments would be below risk-based concentrations.

In summary, results from the Ecological Risk Assessment indicate that the ~~samples~~ contaminated material listed below need to be isolated or removed from the creek channel in order to reduce potential ecological impacts resulting from impacted creek bottom soils to acceptable levels:

- **CS-B** T0, T3, T4, T11
- **CS-F** T5

PCBs and zinc are the risk drivers for Creek Segment B. One sample with a high Zinc concentration (15,000 mg/kg) is the risk driver for Creek Segment T.

Based on these ecological risks, it is considered appropriate to take additional remedial action at Creek Segment B Transects T0, T3, T4 and T11 and Creek Segment F Transect T5 to protect the environment. Remediation area and volume are estimated below:

Creek Segment	Transects Exceeding Risk Based Concentrations	Upstream Clean Transect	Downstream Clean Transect	Impacted Channel Length (Feet)	Impacted Channel Area (Feet^2)	Impacted Channel Volume (Yards^3)
• **CS-B**	T0	T0	T1	100	10,000 (1	2,960 (3,4,5
	T3, T4	T2	T5	300	30,000 (1	8,890 (3,4,5
	T11	T10	T12	200	20,000 (1	5,930 (3,4,5
			Subtotal	**600**	**60,000**	**17,780**
• **CS-F**	T5	T4	T6	800	40,000 (2	11,850 (3,4,5
			Subtotal	**1,400**	**100,000**	**29,630**

Notes:
1) Typical creek channel width in CS-B = 100 feet
2) Typical creek channel width in CS-C = 50 feet
3) Typical creek channel bottom elevation = EL 398 ft. amsl
4) Typical low groundwater elevation = EL 390 ft. amsl
5) Typical excavation depth = 8 ft.

Risks could not be calculated for mercury because mercury concentrations in fish could not be demonstrated to be dependent on sediment concentrations. As a result, site-specific sediment to fish uptake values could not be developed for mercury. Additional data collection is needed

to assess the impact associate with the low residual concentrations of mercury found in creek bottom soils. Mercury concentrations in creek bottom soils are summarized below with concentrations equal to or greater than 0.5 mg/kg highlighted in bold print:

Maximum Reported Mercury Concentrations in Creek Bottom Soils, mg/kg

Transect or Sample	CS-B	Site M	CS-C	CS-D	CS-E	CS-F
0	**0.82**	NS	NS	NS	NS	NS
1	0.23	NS	0.046	0.14	0.11	0.12
2	0.24	0.026	0.06	0.11	0.25	0.074
3	0.27	0.061	0.046	0.07	0.11	**0.63**
4	0.099	0.22	0.13	**0.71**	0.083	0.038
5	0.054	0.062	0.074	0.065	0.094	**0.82**
6	0.21	0.05	0.31	0.33	0.25	0.14
7	0.12	0.33	NS	NS	0.12	0.086
8	0.15	0.092	NS	NS	0.34	0.09
9	0.29	0.031	NS	NS	**0.6**	0.32
10	0.16	0.3	NS	NS	**0.6**	0.11
11	**0.8**	NS	NS	NS	0.46	0.093
12	**0.84**	NS	NS	NS	**0.69**	0.031
13	0.096	NS	NS	NS	**0.84**	0.018
14	0.032	NS	NS	NS	0.28	0.32
15	0.064	NS	NS	NS	0.25	0.17
16	0.12	NS	NS	NS	**1.6**	0.04
17	0.34	NS	NS	NS	0.27	NS
18	0.055	NS	NS	NS	NS	NS

Note: NS = No Sample

Aquatic impacts due to the presence of mercury will depend upon the species of mercury present in the ecosystem. If mercury is in the form of mercuric sulfide, it will not be readily available in the aquatic ecosystem. If it is in the form of methyl mercury, it will be readily available. No site-specific information is available on mercury species.

Tissue data from the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan indicates that mercury is not readily available to aquatic organisms. Mercury concentrations in tissue samples from CS-B, CS-D, the Borrow Pit Lake, Reference Area 1 and Reference Area 2 are summarized below with concentrations equal to or greater than 0.5 mg/kg and non-detects highlighted in bold print.

Summary of Mercury Concentrations in Biota (Whole Body), mg/kg

Sample	CS-B	CS-D	Borrow Pit Lake	Reference Area 1	Reference Area 2
Bottom Feeder Fish					
1	NS	NS	0.05	0.1	0.05
2	NS	NS	0.075	0.086	NS
3	NS	NS	0.26	NS	NS
Forage Fish					
1	**ND**	0.018	0.052	0.05	0.051
2	NS	NS	**0.6**	NS	0.064
3	NS	NS	**ND**	NS	0.046
Shrimp	NS	NS	**ND**	**ND**	**ND**
Clams					
1	NS	NS	**ND**	**ND**	**ND**
2	NS	NS	**ND**	NS	**ND**
3	NS	NS	**ND**	NS	NS
Snails	**ND**	**ND**	**ND**	**ND**	**ND**
Average	**0.042**	**0.028**	**0.127**	**0.062**	**0.047**

Mercury was detected in 12 of the 28 tissue samples collected during implementation of the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan. While average mercury concentrations in Creek Segment B and Creek Segment D are an order of magnitude higher than average concentrations in the Reference Areas 1 and 2, average biota concentrations are lower (0.035 ppm vs. 0.055 ppm), which indicates that mercury is not bioaccumulating in Creek Segments B and D:

Is Mercury an outlier?

Average Mercury Concentrations in Sediment and Biota (Whole Body), mg/kg

Sample	CS-B	CS-D	Borrow Pit Lake	Reference Area 1	Reference Area 2
Sediment	1.287	0.043	0.120	0.053	0.044
Biota	0.042	0.028	0.127	0.062	0.047

While average mercury concentrations in sediment and biota from the Borrow Pit Lake are essentially the same (0.120 vs. 0.127), evidence for bioaccumulation is not strong and depends upon one outlier forage fish tissue concentration of 0.6 ppm. Removing this outlier from the BPL biota data set results in an average biota mercury concentration of 0.074 ppm in the BPL, which is an order of magnitude lower than the average Borrow Pit Lake sediment concentration of 0.120 ppm.

During performance of the Sauget Area 1 EE/CA and RI/FS Ecological Risk Assessment, mercury was identified as a constituent causing a potentially unacceptable impact to forage fish in the Borrow Pit Lake (BPL) and birds (Great Blue Heron) feeding on the forage fish. Only one of three forage fish samples from the Borrow Pit Lake had mercury concentrations above a threshold level thought to be harmful to fish indicating that mercury was not widely distributed throughout the BPL. Other information on mercury in the Dead Creek watershed and reference areas sampled as part of the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan indicate that mercury is not wide spread. For example, three sediment samples were collected in the BPL during implementation of the Support Sampling Plan (SSP). Mercury concentrations were 0.091 mg/kg 900 feet south of the north end of the BPL, 0.11 mg/kg 200 feet north of the confluence of Dead Creek and the BPL and 0.16 mg/kg 200 feet south of the confluence. Sediment samples were also collected in two reference areas outside of the Dead Creek watershed. Mercury concentrations in the two samples from Reference Area 1 were 0.042 and 0.063 mg/kg while concentrations in the two samples from Reference Area 2 were 0.04 and 0.048 mg/kg.

Mercury analytical data for sediment samples collected in Dead Creek as part of the SSP are summarized below by creek segment with the upstream sample in each segment listed first:

Creek Segment	Sample 1	Sample 2	Sample 3
CS-B	1.4	1.5	0.96
CS-C	0.58	0.64	0.66
CS-D	0.35	0.42	0.5
CS-E	0.3	0.3	0.51
CS-F	0.45	1.1	0.3

Note: Concentrations are in mg/kg

None of these data indicate that a mercury hot spot is present in Dead Creek sediments or in Borrow Pit Lake sediments.

Since all sediments were removed from the Dead Creek channel during the sediment removal action, they are no longer a potential source for the mercury found in one of the three forage fish samples collected in the BPL. To determine if there are mercury "hot spots" in the Borrow Pit Lake, sediment samples will be collected as part of the Dead Creek Sediment Removal Action Mitigation Plan which was submitted to USEPA on May 22, 2002.

As proposed in this plan, vertically integrated sediment core samples will be collected from Borrow Pit Lake on a 200 ft grid in order to evaluate the distribution of mercury in sediments immediately upstream, at and downstream of the confluence of Dead Creek with the BPL. Data collected during the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan show no evidence of backwater deposition of the organic constituents in the BPL upstream of its confluence with Dead Creek and limited evidence of inorganic constituent deposition:

Constituent	Creek Segment F	BPL Upstream of Confluence	BPL Downstream of Confluence
PCBs	ND to 6,290 ppb	ND	ND to 10 ppb
Copper	39 to 5,400 ppm	9.9 to 21 ppm	10 to 88 ppm
Zinc	510 to 11,000 ppm	230 to 490 ppm	50 to 680 ppm

Concentrations of all of these Sauget Area 1 site-related constituents are lower in the portion of the BPL upstream of its confluence with Dead Creek than the concentrations in Dead Creek Segment F or in the BPL downstream of the confluence. These data demonstrate that backwater deposition of site-related constituents is not occurring in the BPL upstream of its confluence with Dead Creek. Consequently, the mercury "hot spot" sampling program is focused on the confluence of Dead Creek with the BPL and areas downstream of the confluence.

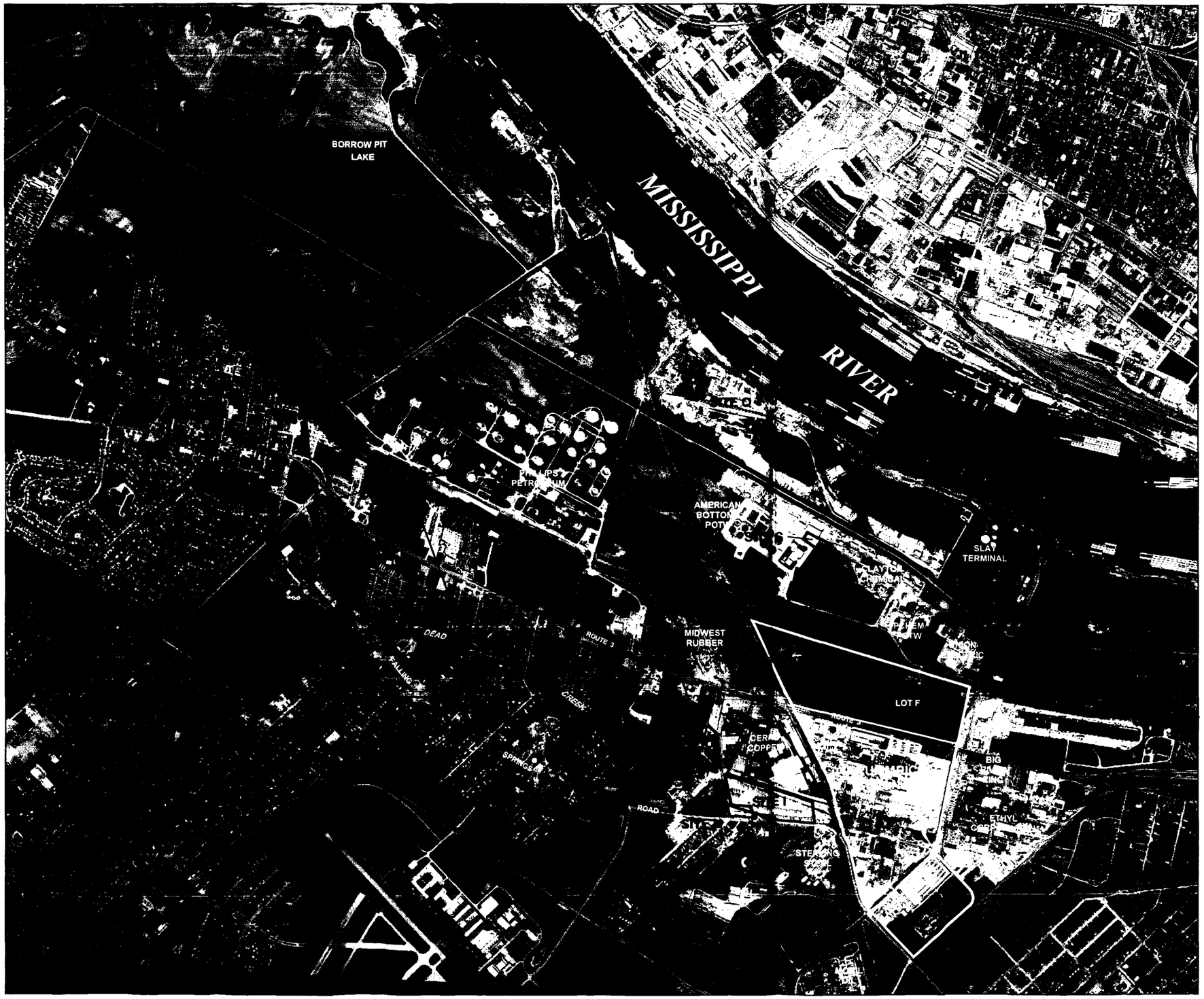
Samples will be collected from the center of each grid cell, resulting in approximately 37 locations (Figure 2-42).

Number of Sediment Samples: 37

Analysis: Mercury USEPA Method 7471

Severn Trent Laboratories in Savannah Georgia (STL-Savannah) will perform the sediment analyses. Sampling locations will be finalized in the field with the concurrence of USEPA Region V or its designee. Sampling methods, procedures and protocols will be the same used for the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan and associated Field Sampling Plans and Quality Assurance Project Plans. Mercury speciation analyses, which appear to be necessary in order to determine the bioavailability of mercury in Borrow Pit Lake sediments, may need to be performed by a specialist laboratory.

Figures



Z

LEGEND

SAUGET AREA 1

SAUGET AREA 2

1,000' 0 1,000'

Title:

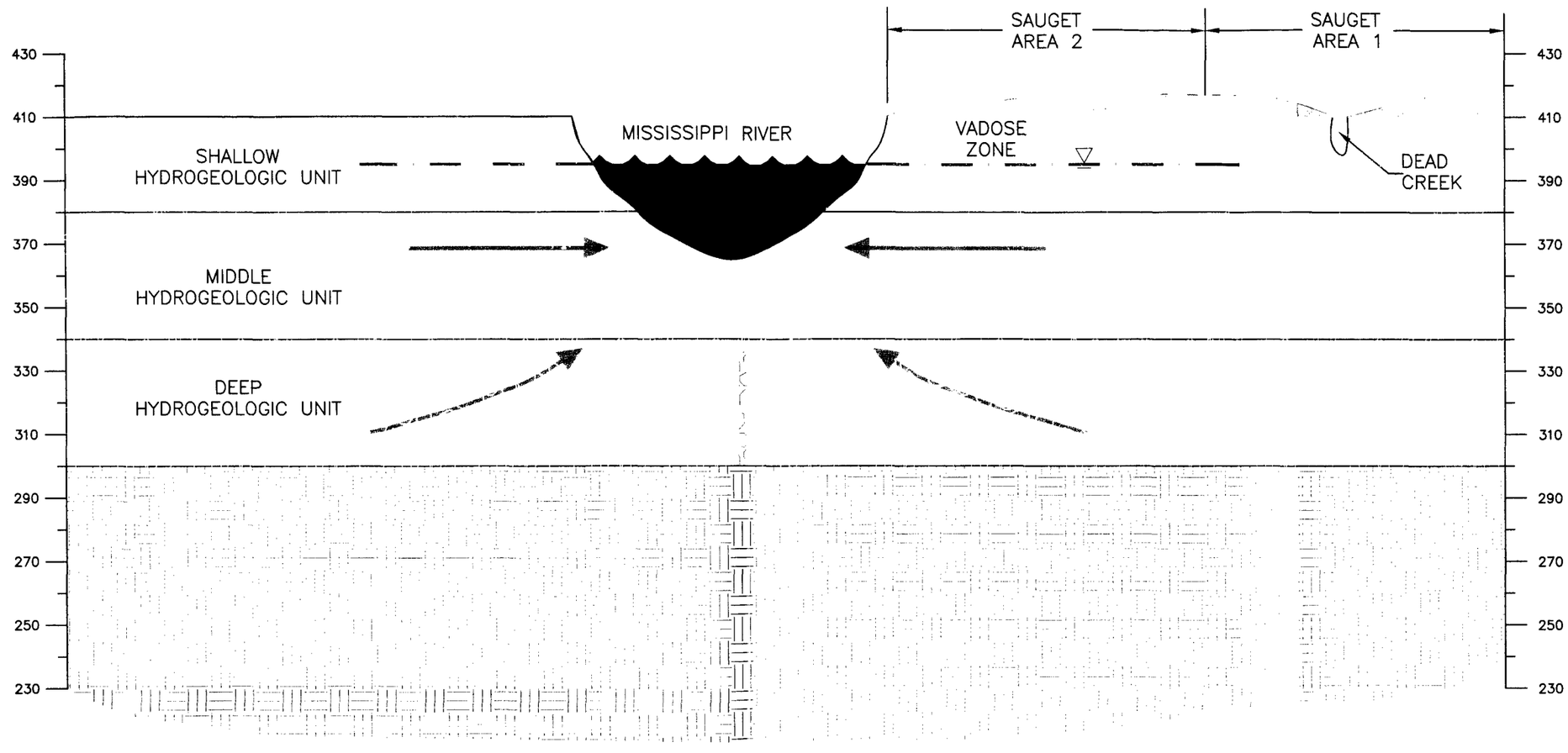
SITE LOCATION MAP

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: RD	Date: 06/21/02	FIGURE
Prepared by: JSG	Scale: NTS	2-1
Project Mgr: WBS	Office: NJ	
File No: 06655005	Project: 06655J	



LEGEND

- FINE TO MEDIUM SAND (SM,SP)
- MEDIUM TO COARSE SAND (SW)
- MEDIUM TO COARSE SAND AND GRAVEL (SW,GW)
- BEDROCK
- GROUND-WATER FLOW DIRECTION
- GROUND-WATER TABLE

VERTICAL: 0 – 40
HORIZONTAL: 0 – 1,000

Title:

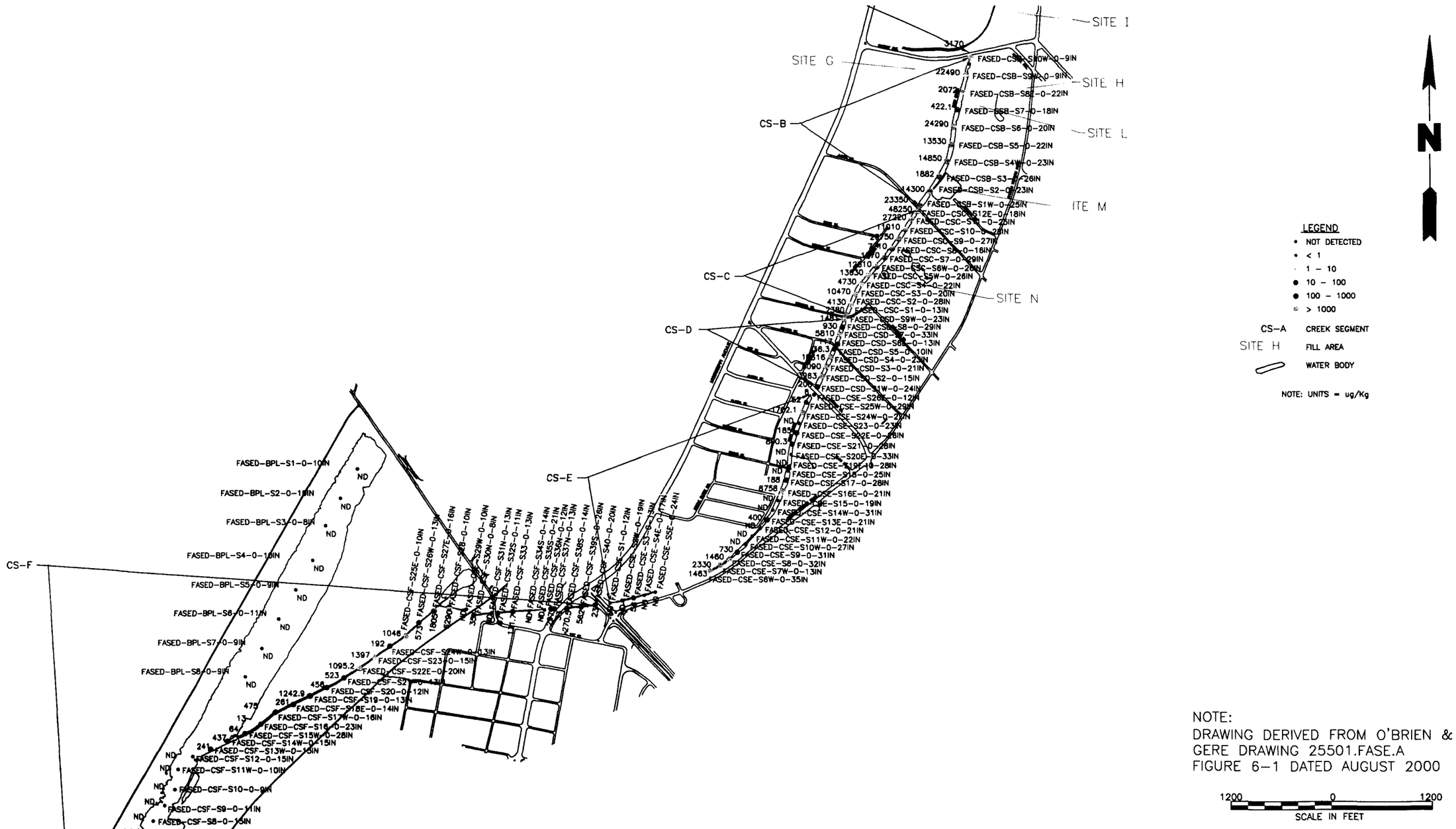
GENERALIZED GEOLOGIC CROSS SECTION

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: RD	Date: 06/17/02	FIGURE
Prepared by: JSG	Scale: AS SHOWN	2-2
Project Mgr: WS	Office: NJ	
File No: 06655001	Project: 06655J02	



NOTE:
DRAWING DERIVED FROM O'BRIEN & GERE DRAWING 25501.FASE.A FIGURE 6-1 DATED AUGUST 2000

Title:

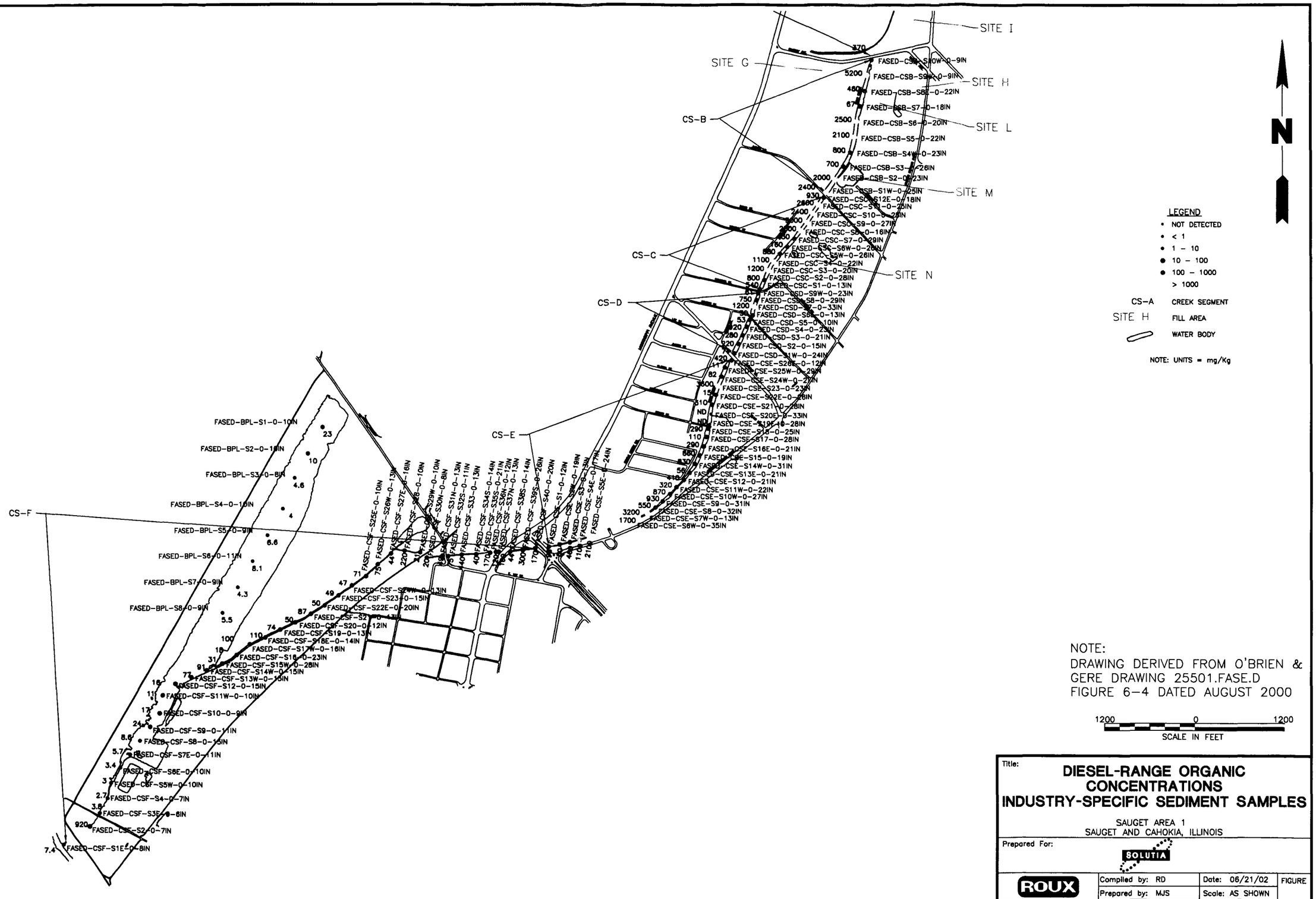
PCB CONCENTRATIONS INDUSTRY-SPECIFIC SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: RD	Date: 06/21/02	FIGURE
Prepared by: MJS	Scale: AS SHOWN	2-3
Project Mgr: WBS	Office: NJ	
File No: 06655002	Project: 06655J02	



NOTE:
DRAWING DERIVED FROM O'BRIEN & GERE DRAWING 25501.FASE.D
FIGURE 6-4 DATED AUGUST 2000

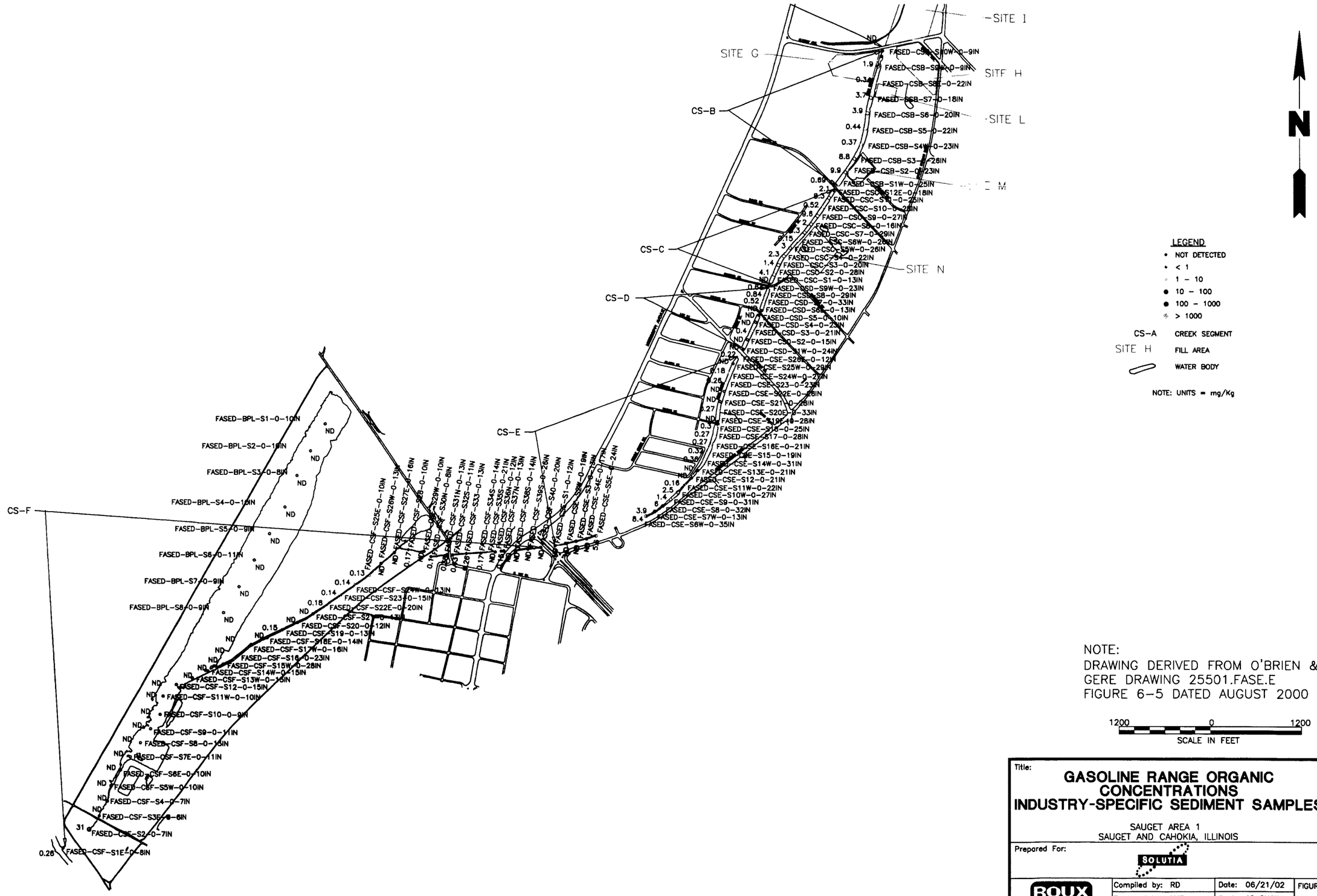
Title:

DIESEL-RANGE ORGANIC CONCENTRATIONS INDUSTRY-SPECIFIC SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. *Environmental Consulting & Management*	Compiled by: RD	Date: 06/21/02	FIGURE
	Prepared by: MJS	Scale: AS SHOWN	2-4
	Project Mgr: WBS	Office: NJ	
	File No: 06655002	Project: 06655J02	



NOTE:
DRAWING DERIVED FROM O'BRIEN & GERE DRAWING 25501.FASE.E
FIGURE 6-5 DATED AUGUST 2000

Title:

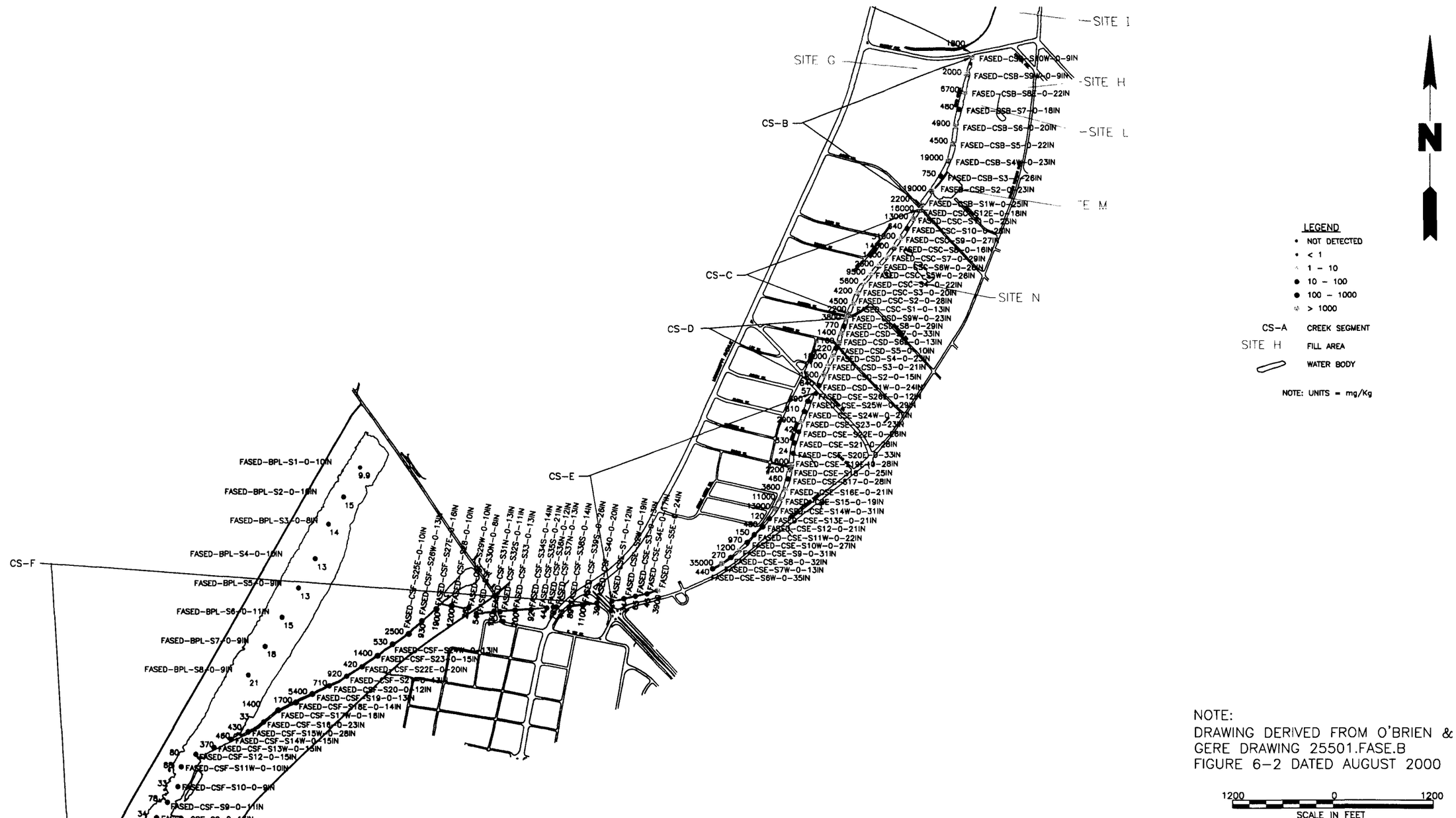
GASOLINE RANGE ORGANIC CONCENTRATIONS INDUSTRY-SPECIFIC SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: RD	Date: 06/21/02	FIGURE
Prepared by: MJS	Scale: AS SHOWN	2-5
Project Mgr: WBS	Office: NJ	
File No: 06655002	Project: 06655J02	



NOTE:
DRAWING DERIVED FROM O'BRIEN & GERE DRAWING 25501.FASE.B
FIGURE 6-2 DATED AUGUST 2000

Title:

COPPER CONCENTRATIONS INDUSTRY-SPECIFIC SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
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	Project Mgr: WBS	Office: NJ	
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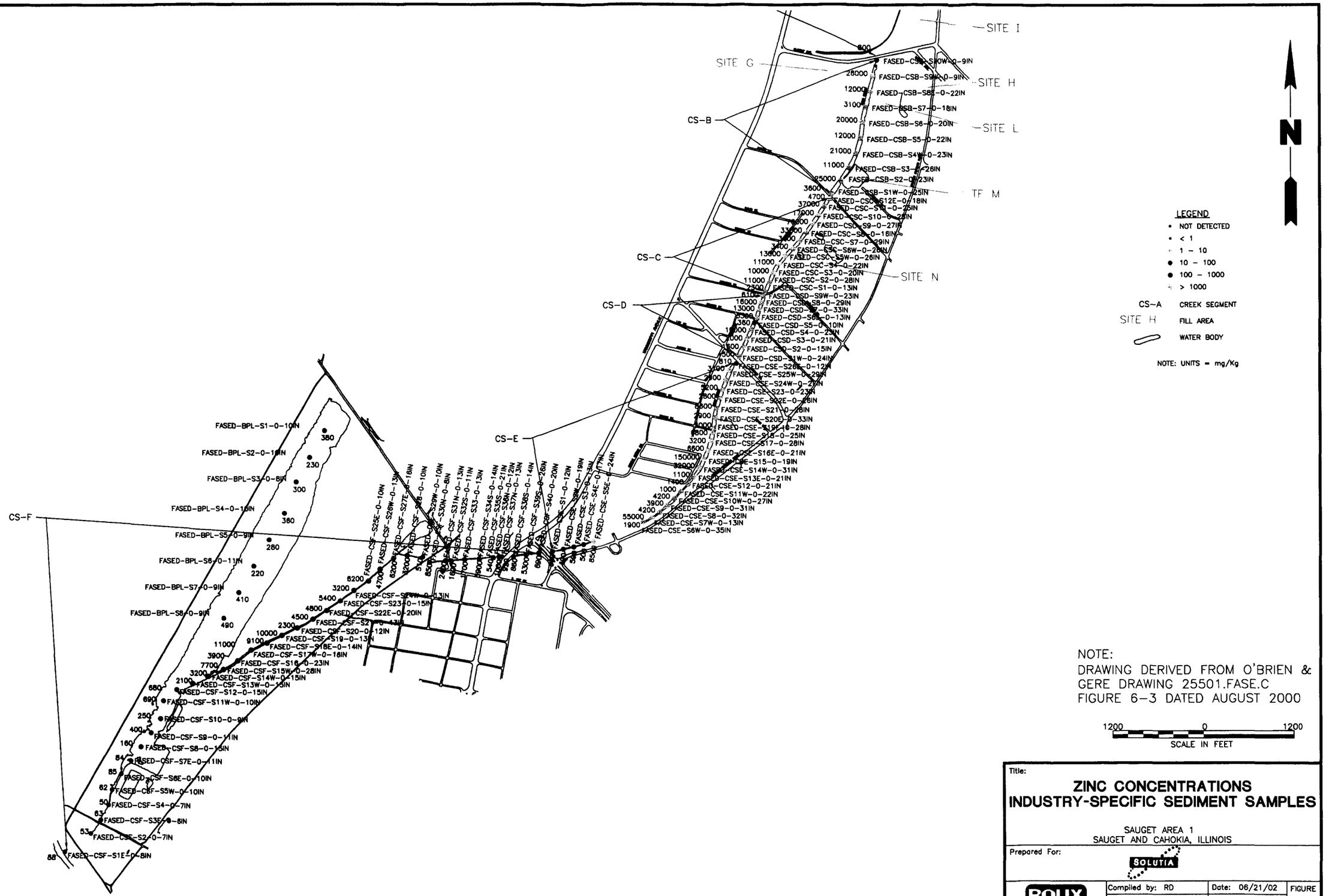

Title:

ZINC CONCENTRATIONS INDUSTRY-SPECIFIC SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. *Environmental Consulting & Management*	Compiled by: RD	Date: 06/21/02	FIGURE
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	Project Mgr: WBS	Office: NJ	
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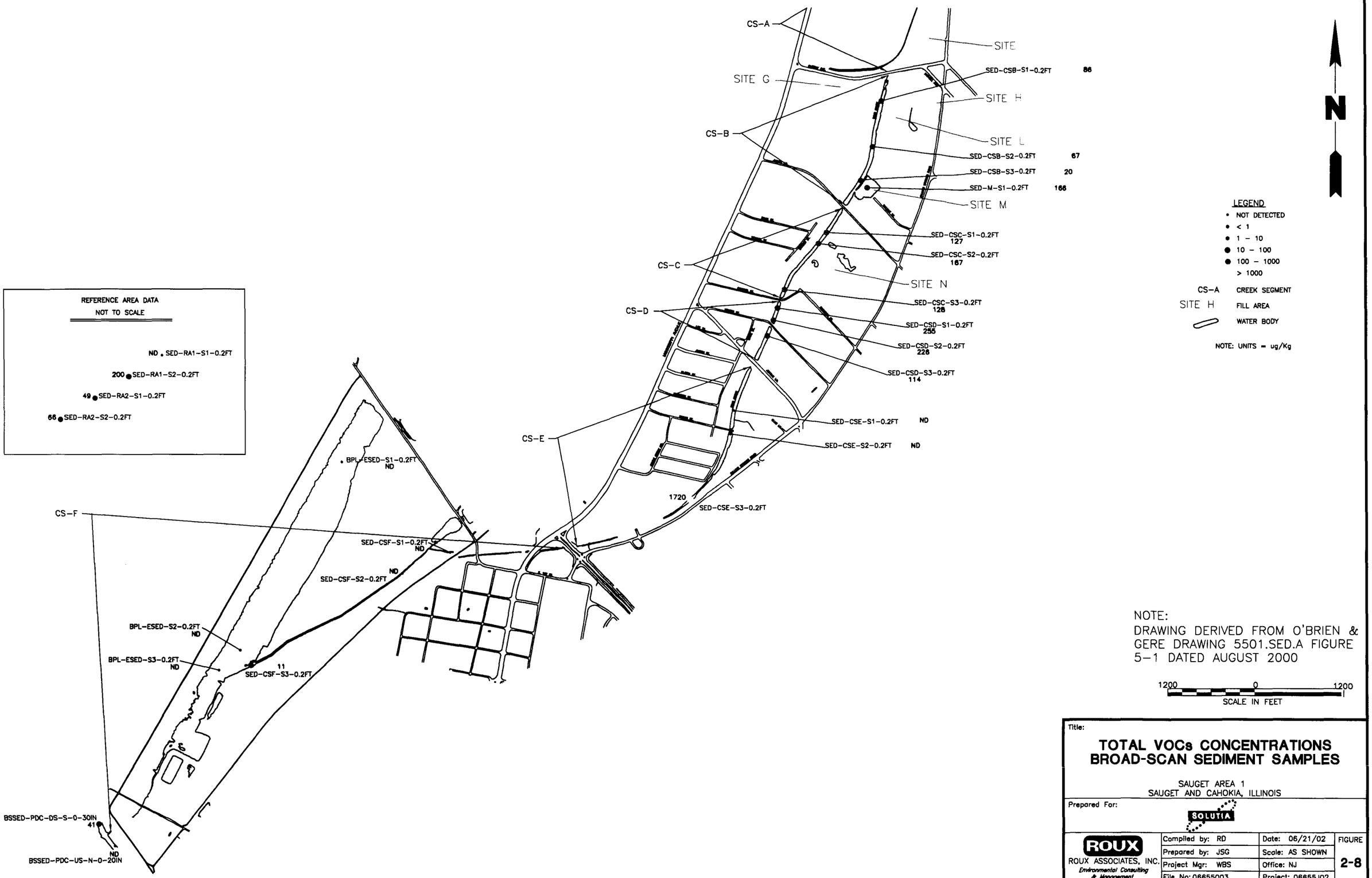


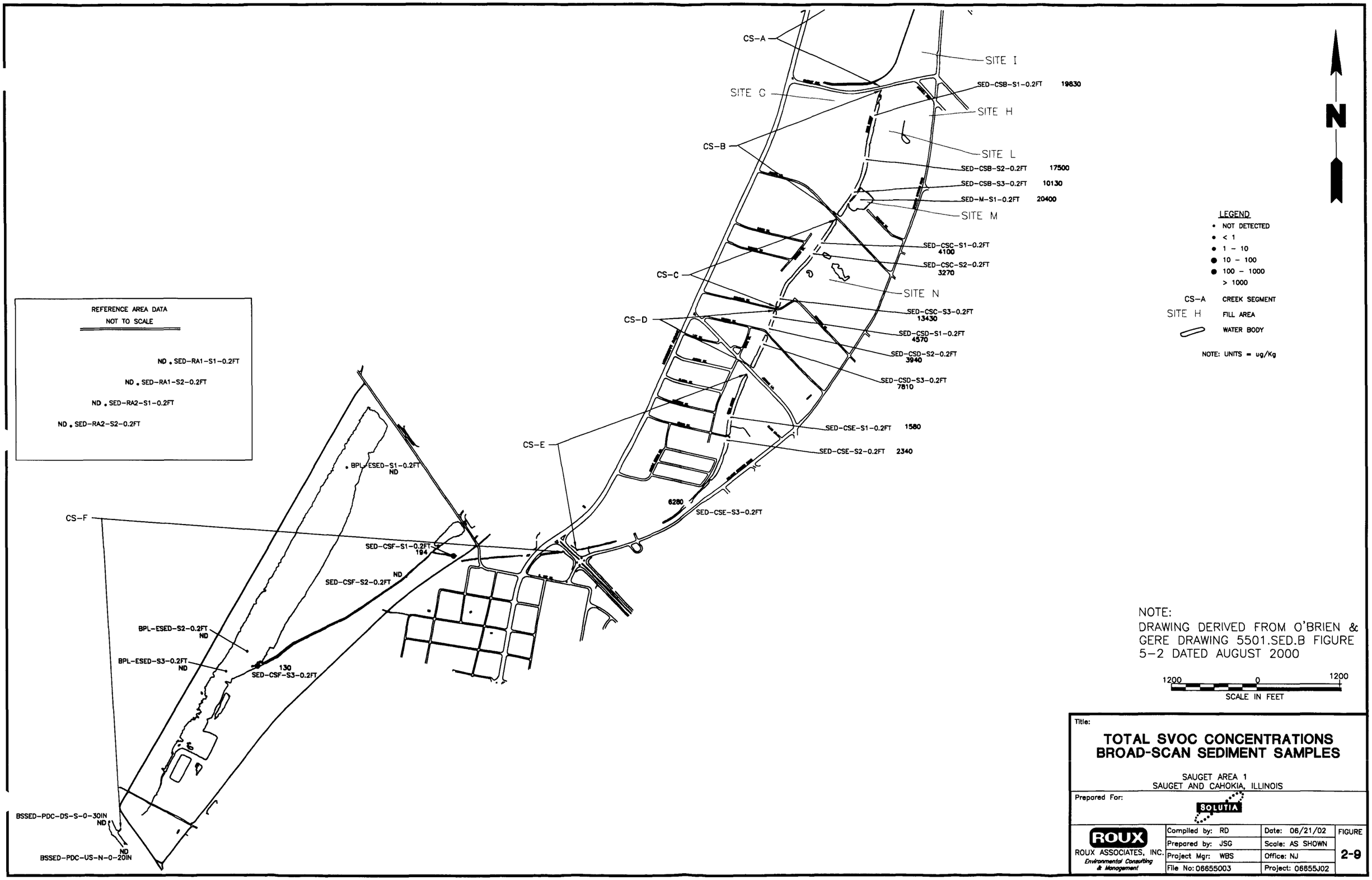
Title:

TOTAL VOCs CONCENTRATIONS BROAD-SCAN SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
	Prepared by: JSG	Scale: AS SHOWN	2-8
	Project Mgr: WBS	Office: NJ	
	File No: 06655003	Project: 06655J02	



Title:

TOTAL SVOC CONCENTRATIONS BROAD-SCAN SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
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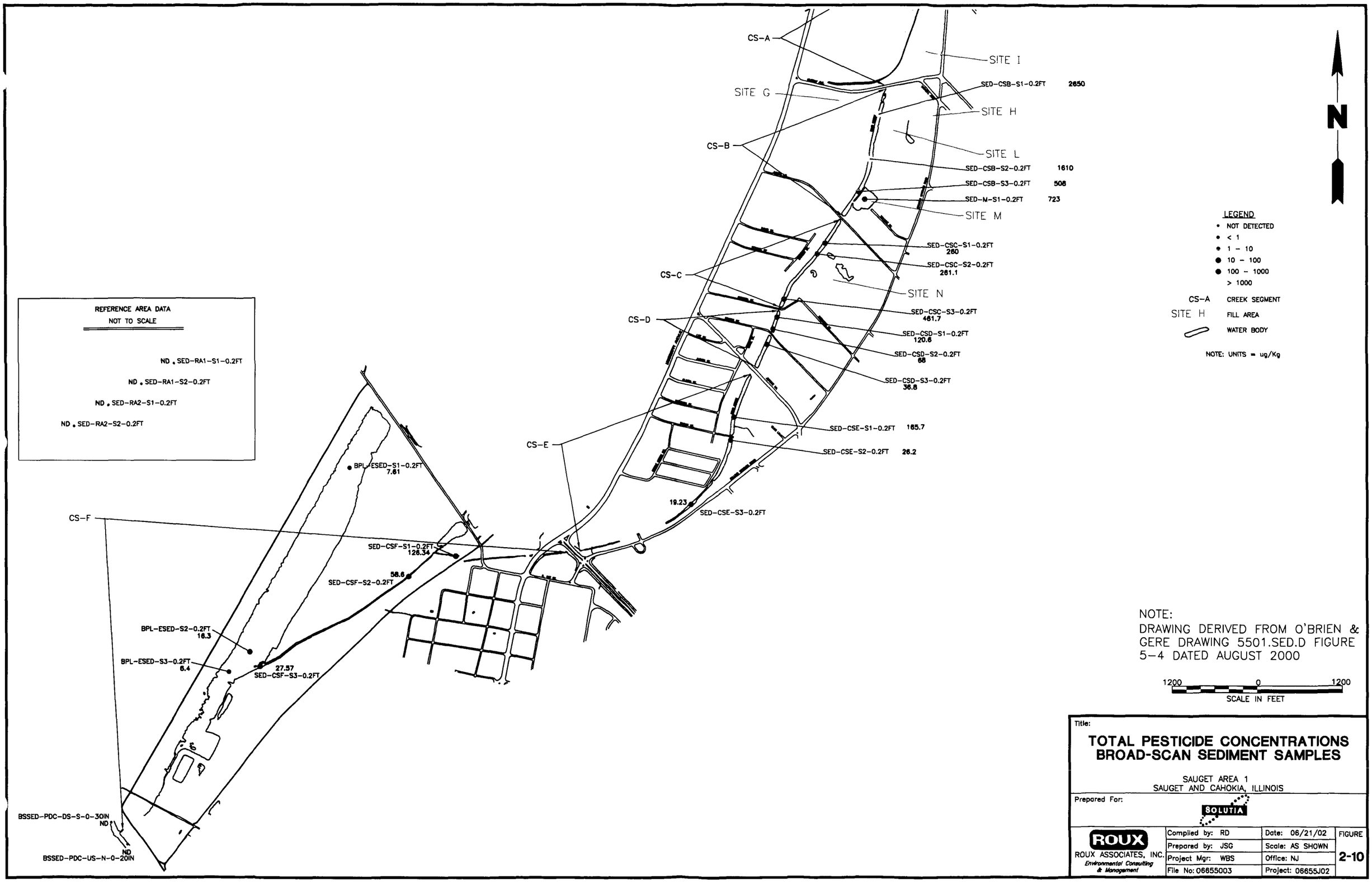

NOTE:
DRAWING DERIVED FROM O'BRIEN & GERE DRAWING 5501.SED.D FIGURE 5-4 DATED AUGUST 2000

Title:

TOTAL PESTICIDE CONCENTRATIONS BROAD-SCAN SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
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	Project Mgr: WBS	Office: NJ	
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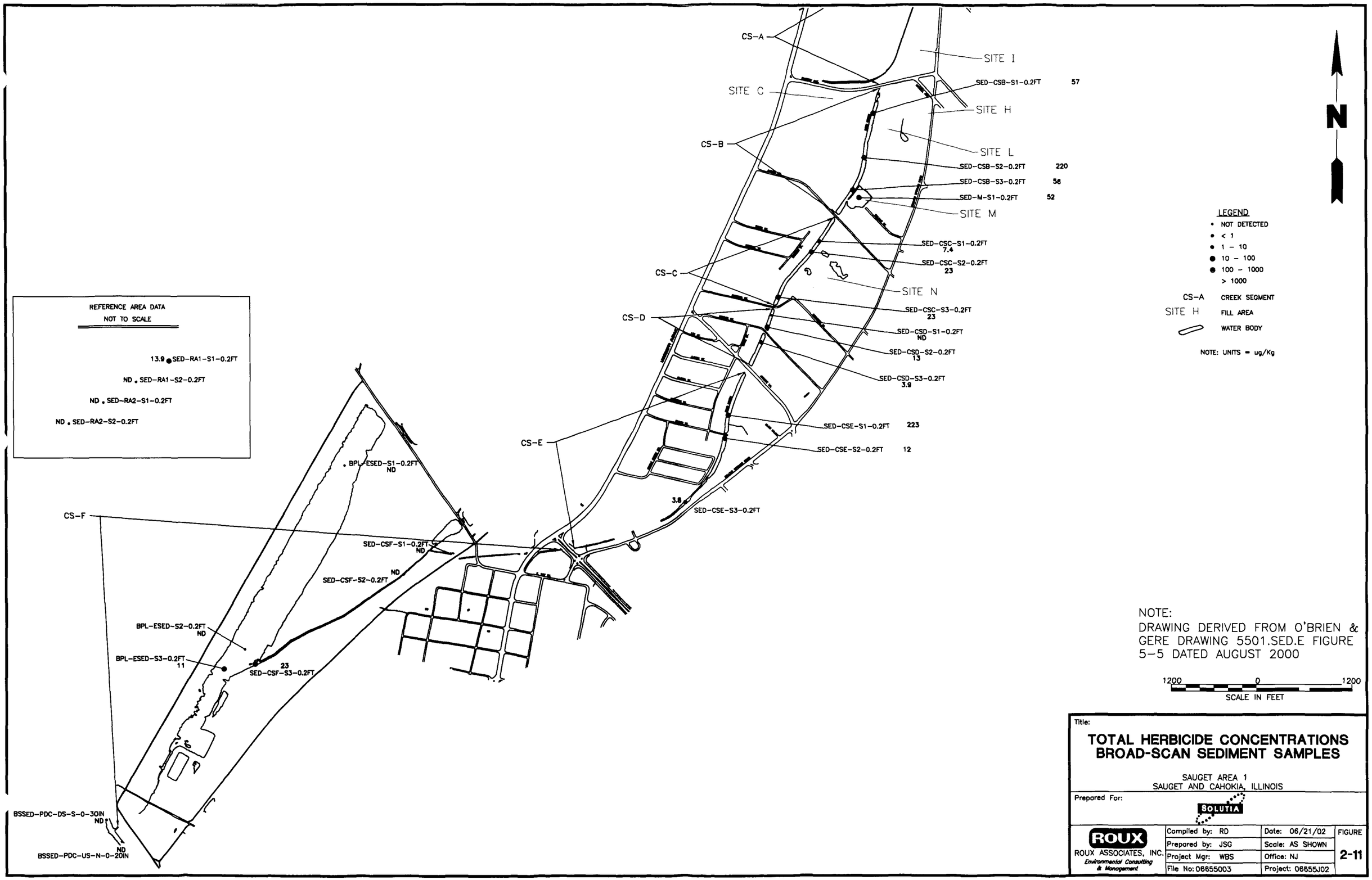

Title:

TOTAL HERBICIDE CONCENTRATIONS BROAD-SCAN SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
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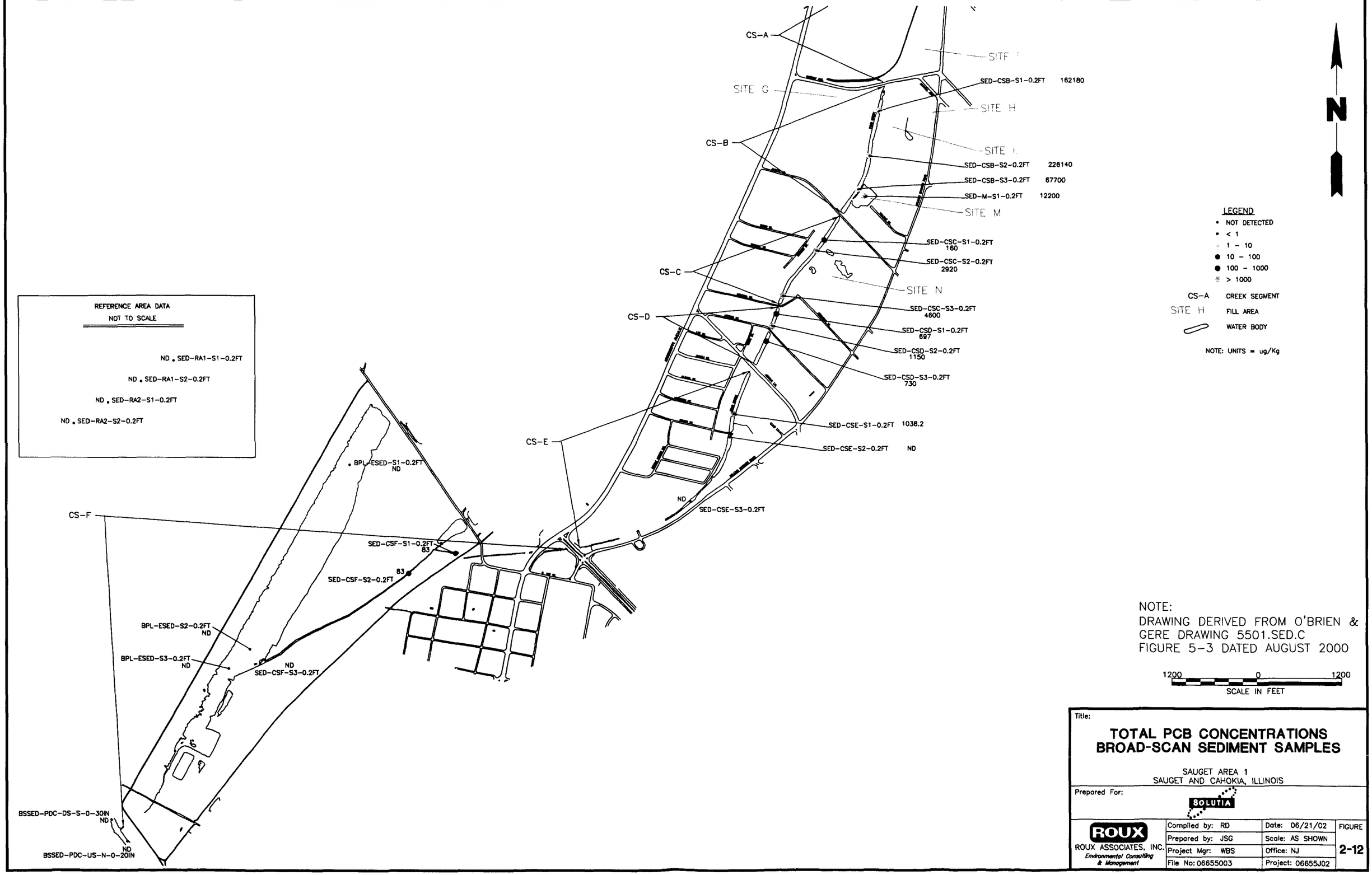

Title:

TOTAL PCB CONCENTRATIONS BROAD-SCAN SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: RD	Date: 06/21/02	FIGURE
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Project Mgr: WBS	Office: NJ	
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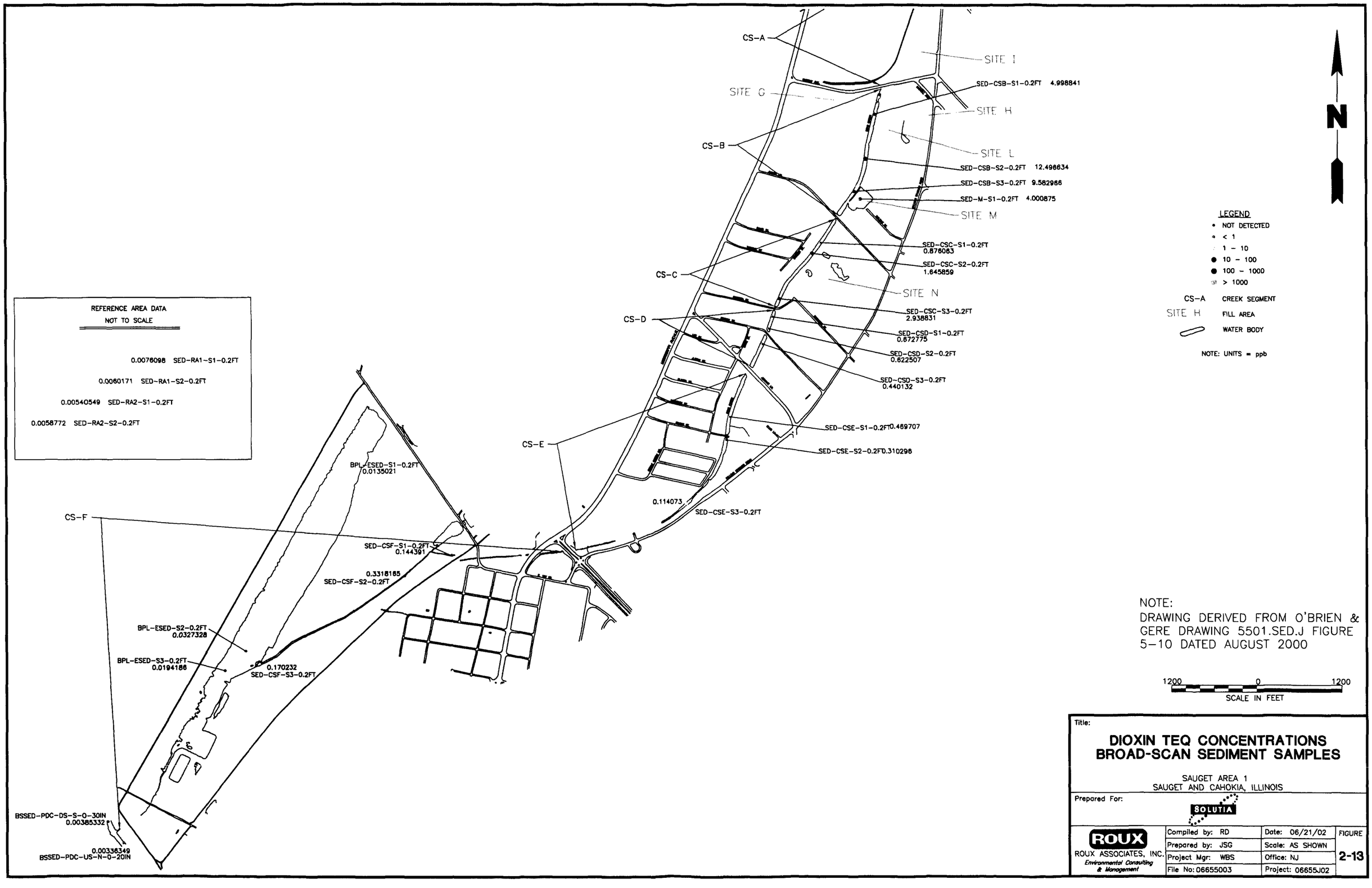

Title:

DIOXIN TEQ CONCENTRATIONS BROAD-SCAN SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
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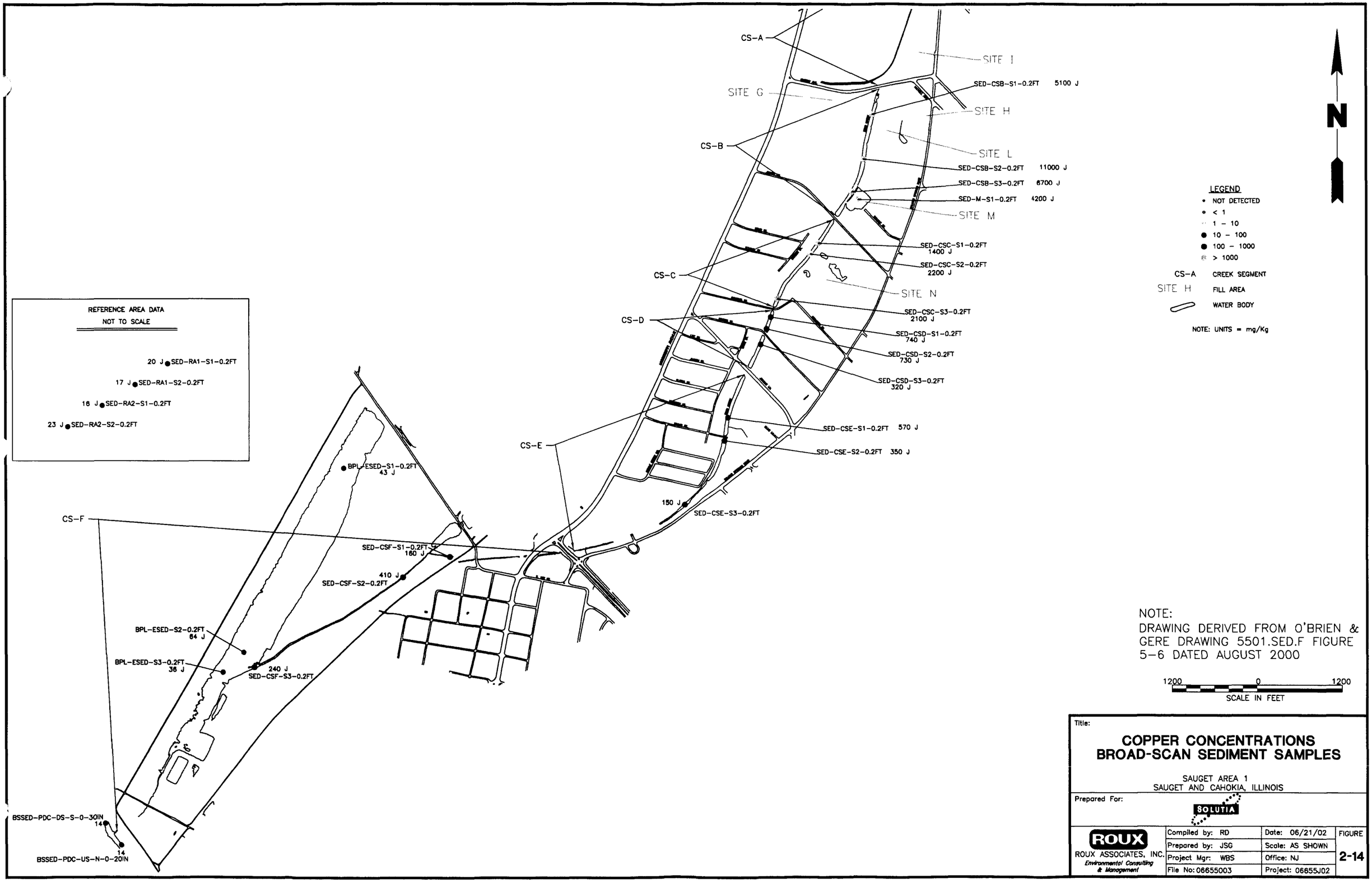

Title:

COPPER CONCENTRATIONS
BROAD-SCAN SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. *Environmental Consulting & Management*	Compiled by: RD	Date: 06/21/02	FIGURE
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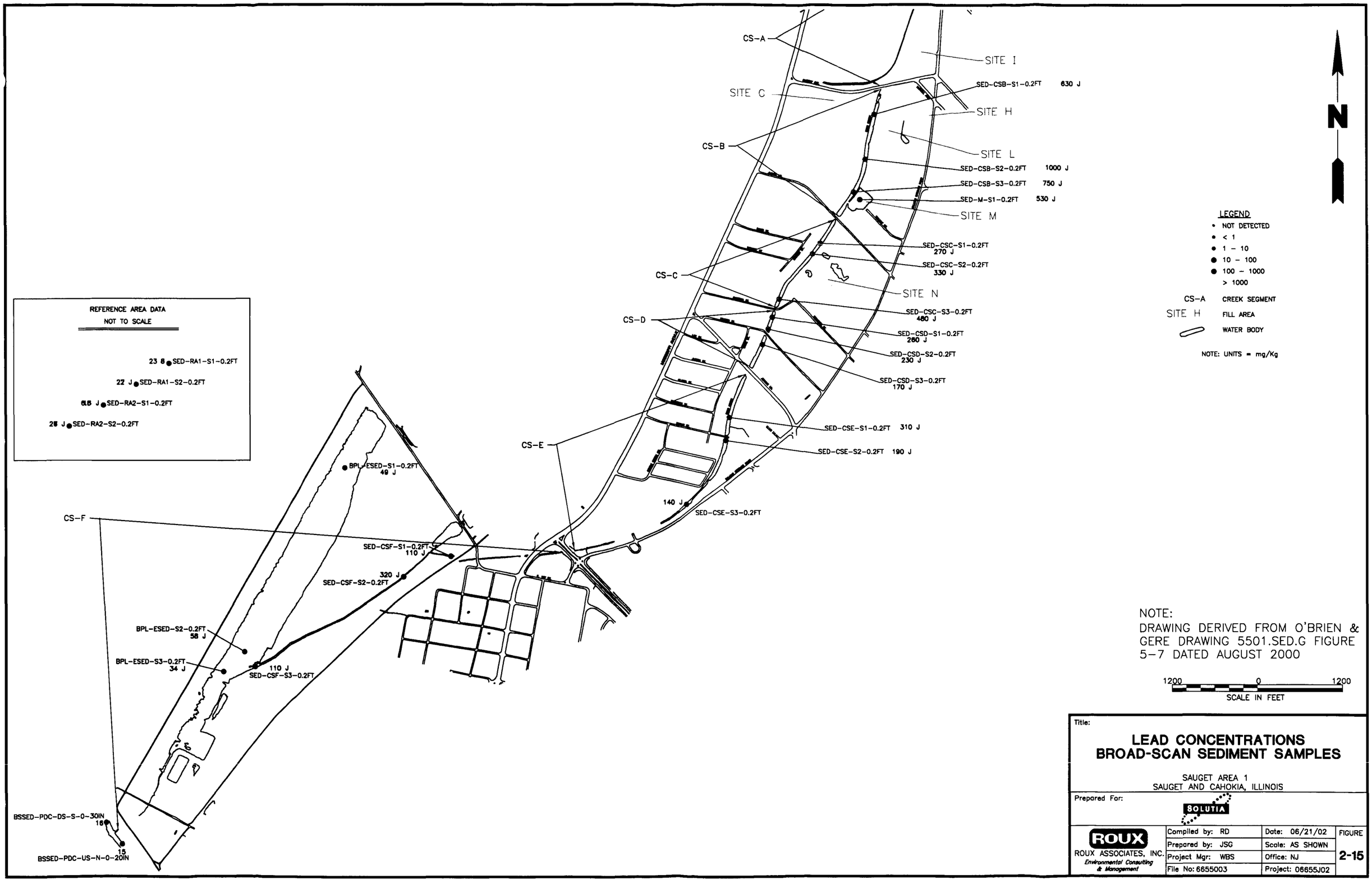
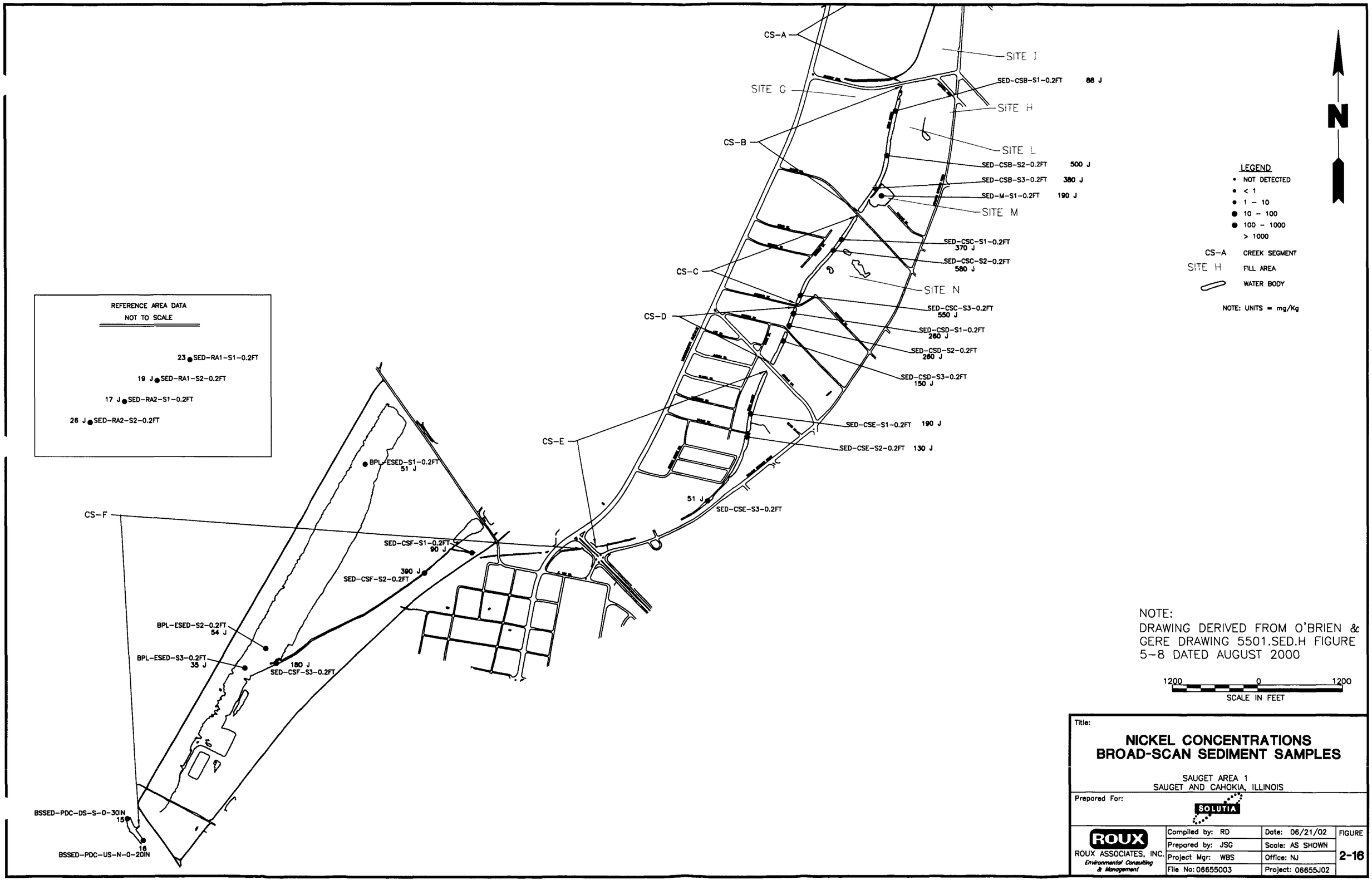

CS-A
SITE I
SITE C
SED-CSB-S1-0.2FT 630 J
SITE H
CS-B
SITE L
SED-CSB-S2-0.2FT 1000 J
SED-CSB-S3-0.2FT 750 J
SED-M-S1-0.2FT 530 J
SITE M
SED-CSC-S1-0.2FT 270 J
SED-CSC-S2-0.2FT 330 J
CS-C
SITE N
SED-CSC-S3-0.2FT 480 J
CS-D
SED-CSD-S1-0.2FT 260 J
SED-CSD-S2-0.2FT 230 J
SED-CSD-S3-0.2FT 170 J
SED-CSE-S1-0.2FT 310 J
CS-E
SED-CSE-S2-0.2FT 190 J
BPL-ESED-S1-0.2FT 49 J
140 J
SED-CSE-S3-0.2FT
CS-F
SED-CSF-S1-0.2FT 110 J
320 J
SED-CSF-S2-0.2FT
BPL-ESED-S2-0.2FT 58 J
BPL-ESED-S3-0.2FT 34 J
110 J
SED-CSF-S3-0.2FT
BSSED-PDC-DS-S-0-30IN 16
15
BSSED-PDC-US-N-0-20IN
REFERENCE AREA DATA
NOT TO SCALE
23 8 SED-RA1-S1-0.2FT
22 J SED-RA1-S2-0.2FT
6.6 J SED-RA2-S1-0.2FT
2.6 J SED-RA2-S2-0.2FT
N
LEGEND
NOT DETECTED
< 1
1 - 10
10 - 100
100 - 1000
> 1000
CS-A CREEK SEGMENT
SITE H FILL AREA
WATER BODY
NOTE: UNITS = mg/Kg
NOTE:
DRAWING DERIVED FROM O'BRIEN & GERE DRAWING 5501.SED.G FIGURE 5-7 DATED AUGUST 2000
1200 0 1200
SCALE IN FEET
Title:
LEAD CONCENTRATIONS
BROAD-SCAN SEDIMENT SAMPLES
SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS
Prepared For:
SOLUTIA
ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management
Compiled by: RD
Date: 06/21/02
Prepared by: JSG
Scale: AS SHOWN
Project Mgr: WBS
Office: NJ
File No: 6655003
Project: 06655J02
FIGURE
2-15



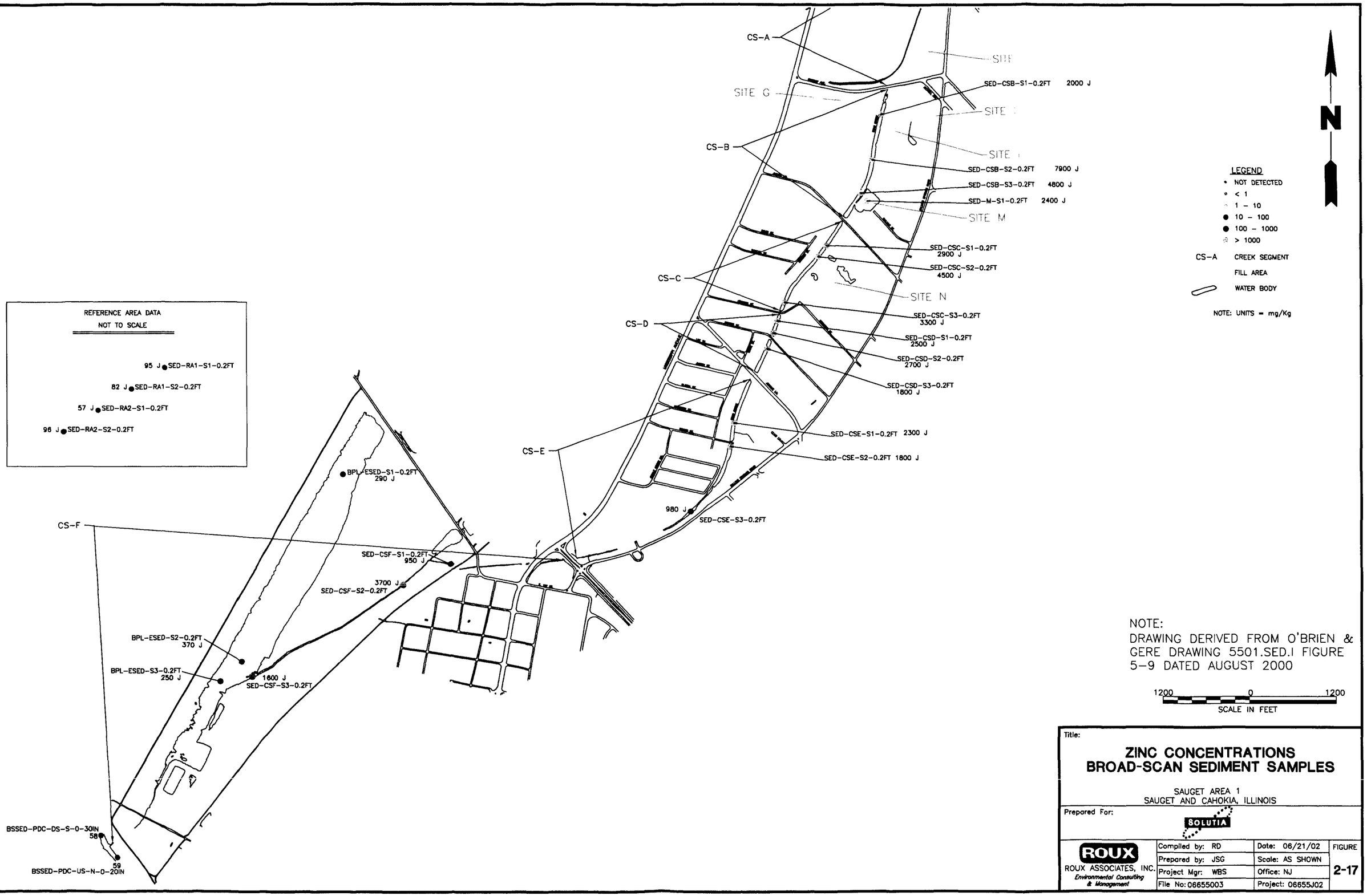
Title:

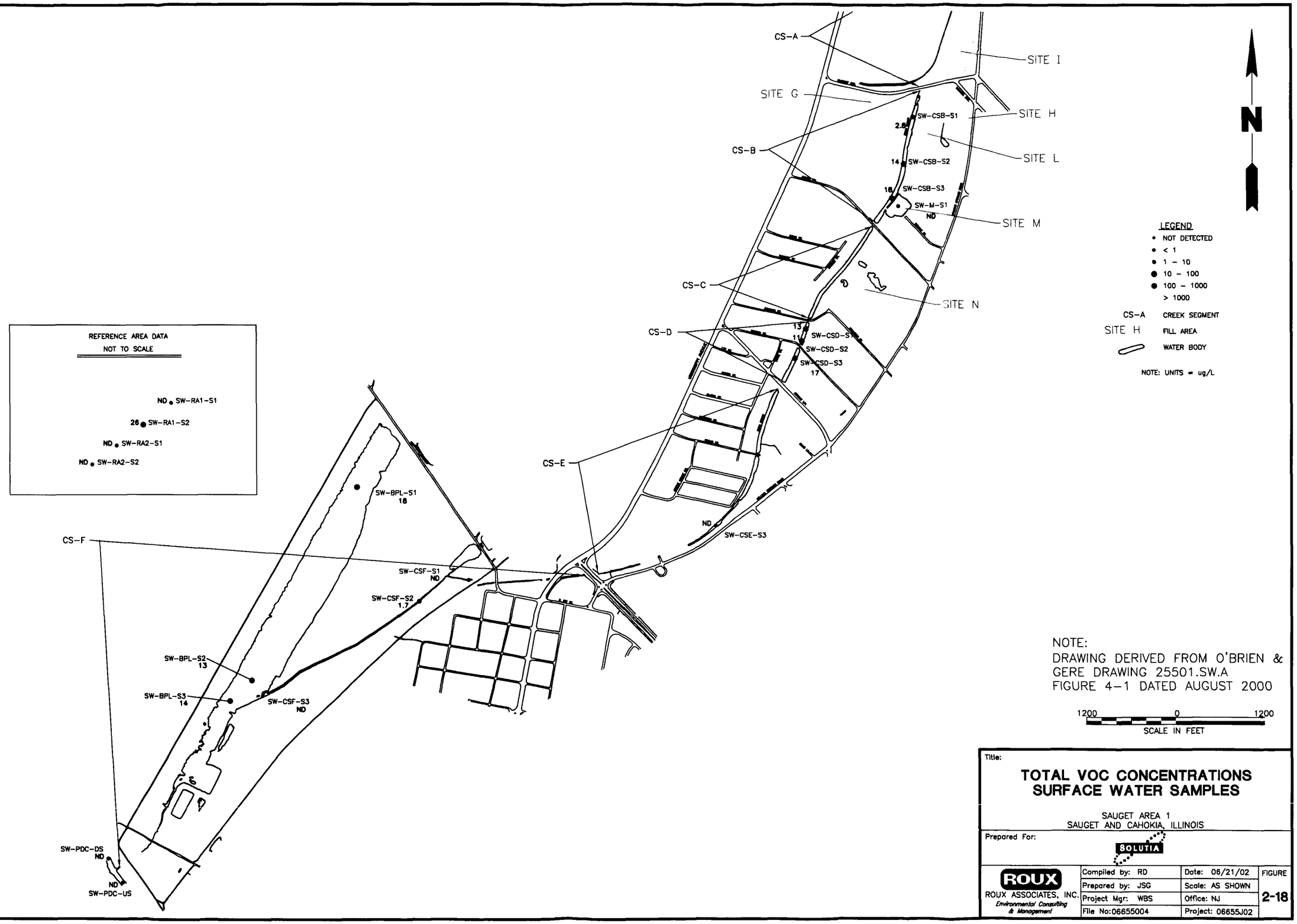
NICKEL CONCENTRATIONS BROAD-SCAN SEDIMENT SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
	Prepared by: JSG	Scale: AS SHOWN	2-16
	Project Mgr: WBS	Office: NJ	
	File No: 06655003	Project: 06655J02	


CS-A
SITE F
SED-CSB-S1-0.2FT 2000 J
SITE G
SITE
CS-B
SITE
SED-CSB-S2-0.2FT 7900 J
SED-CSB-S3-0.2FT 4800 J
SED-M-S1-0.2FT 2400 J
SITE M
SED-CSC-S1-0.2FT 2900 J
SED-CSC-S2-0.2FT 4500 J
CS-C
SITE N
SED-CSC-S3-0.2FT 3300 J
CS-D
SED-CSD-S1-0.2FT 2500 J
SED-CSD-S2-0.2FT 2700 J
SED-CSD-S3-0.2FT 1800 J
SED-CSE-S1-0.2FT 2300 J
CS-E
SED-CSE-S2-0.2FT 1800 J
980 J
SED-CSE-S3-0.2FT
BPL-ESED-S1-0.2FT 290 J
CS-F
SED-CSF-S1-0.2FT 950 J
3700 J
SED-CSF-S2-0.2FT
BPL-ESED-S2-0.2FT 370 J
BPL-ESED-S3-0.2FT 250 J
1600 J
SED-CSF-S3-0.2FT
BSSED-PDC-DS-S-0-30IN
58
59
BSSED-PDC-US-N-0-20IN
REFERENCE AREA DATA
NOT TO SCALE
95 J SED-RA1-S1-0.2FT
82 J SED-RA1-S2-0.2FT
57 J SED-RA2-S1-0.2FT
96 J SED-RA2-S2-0.2FT
N
LEGEND
NOT DETECTED
< 1
1 - 10
10 - 100
100 - 1000
> 1000
CS-A CREEK SEGMENT
FILL AREA
WATER BODY
NOTE: UNITS = mg/Kg
NOTE:
DRAWING DERIVED FROM O'BRIEN & GERE DRAWING 5501.SED.I FIGURE 5-9 DATED AUGUST 2000
1200 0 1200
SCALE IN FEET
Title:
ZINC CONCENTRATIONS
BROAD-SCAN SEDIMENT SAMPLES
SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS
Prepared For:
SOLUTIA
ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management
Compiled by: RD
Prepared by: JSG
Project Mgr: WBS
File No: 06655003
Date: 06/21/02
Scale: AS SHOWN
Office: NJ
Project: 06655J02
FIGURE
2-17



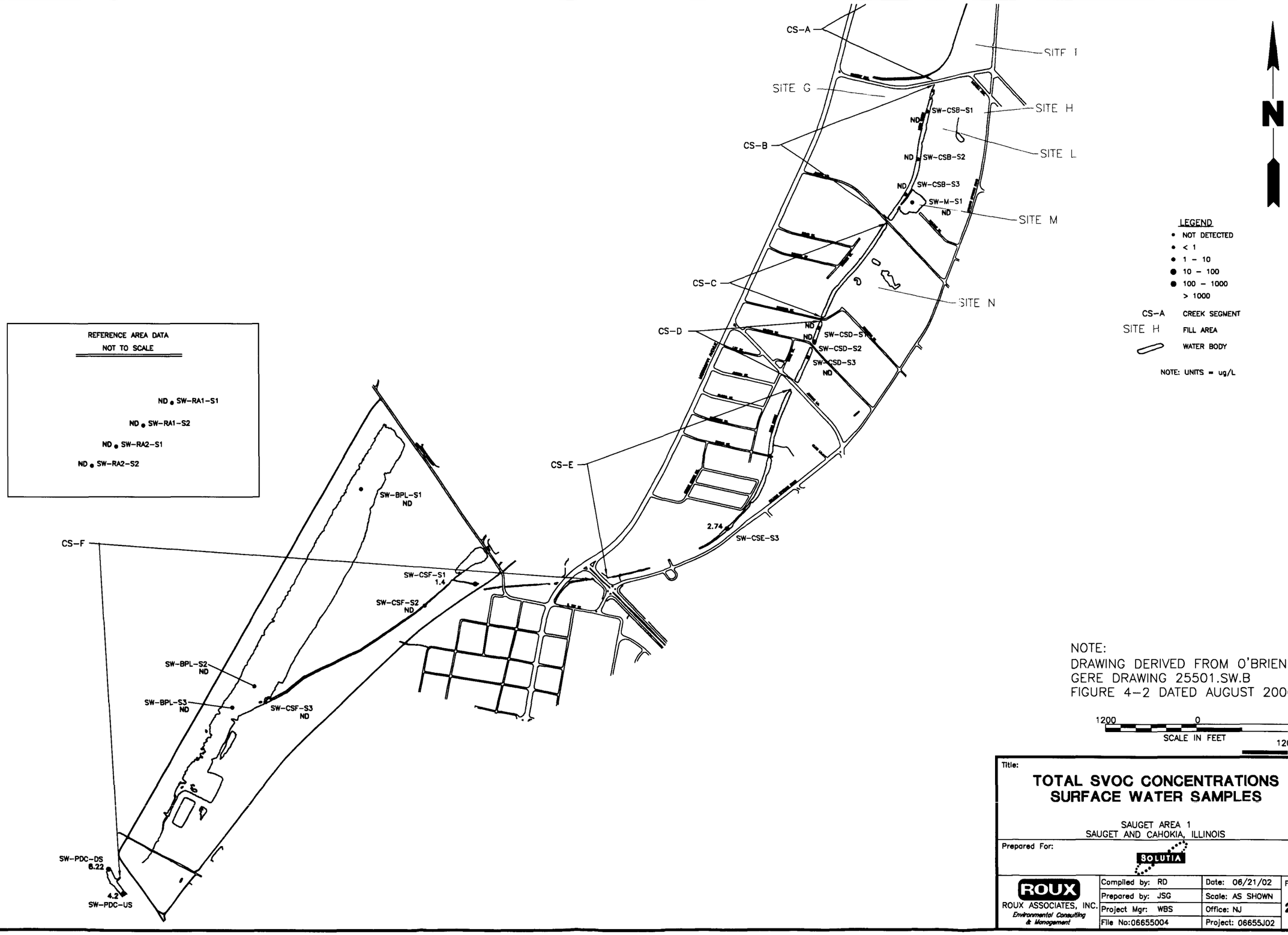
Title:

TOTAL VOC CONCENTRATIONS SURFACE WATER SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
	Prepared by: JSG	Scale: AS SHOWN	2-18
	Project Mgr: WBS	Office: NJ	
	File No:06655004	Project: 06655J02	



NOTE:
DRAWING DERIVED FROM O'BRIEN & GERE DRAWING 25501.SW.B FIGURE 4-2 DATED AUGUST 2000

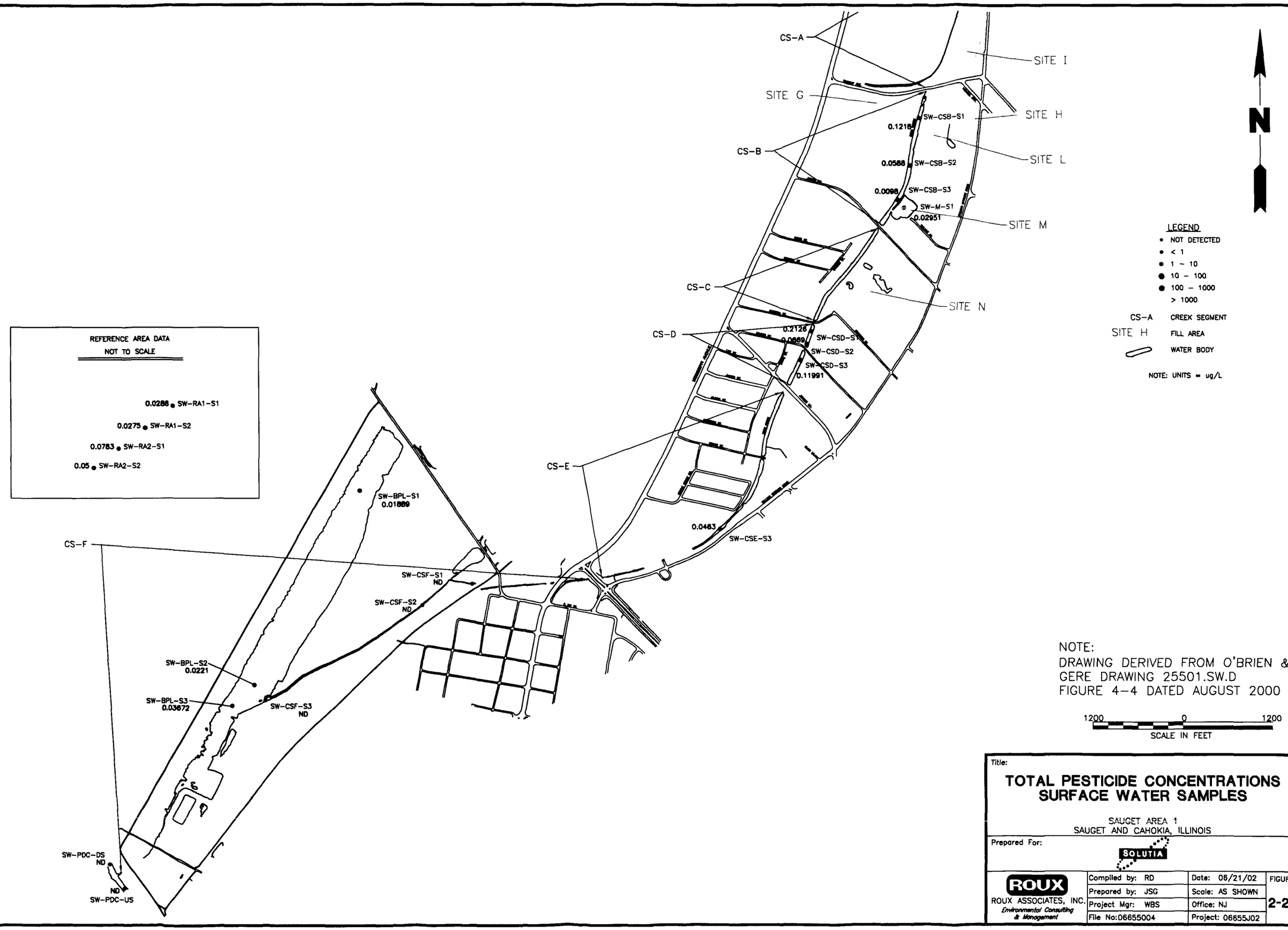
Title:

TOTAL SVOC CONCENTRATIONS SURFACE WATER SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
	Prepared by: JSG	Scale: AS SHOWN	2-19
	Project Mgr: WBS	Office: NJ	
	File No:06655004	Project: 06655J02	



NOTE:
DRAWING DERIVED FROM O'BRIEN & GERE DRAWING 25501.SW.D
FIGURE 4-4 DATED AUGUST 2000

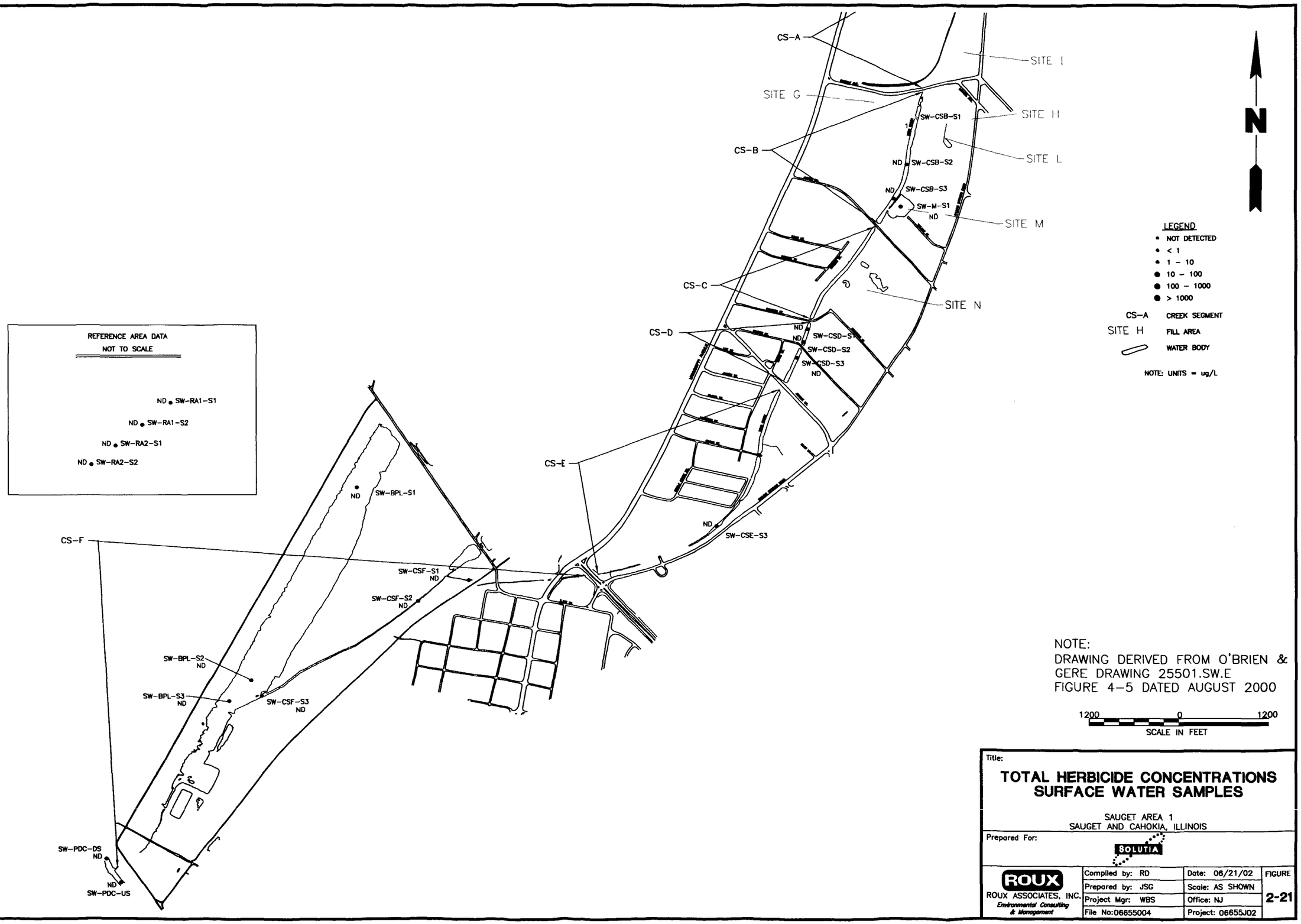
Title:

TOTAL PESTICIDE CONCENTRATIONS SURFACE WATER SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 08/21/02	FIGURE
	Prepared by: JSG	Scale: AS SHOWN	2-20
	Project Mgr: WBS	Office: NJ	
	File No:06655004	Project: 06655J02	



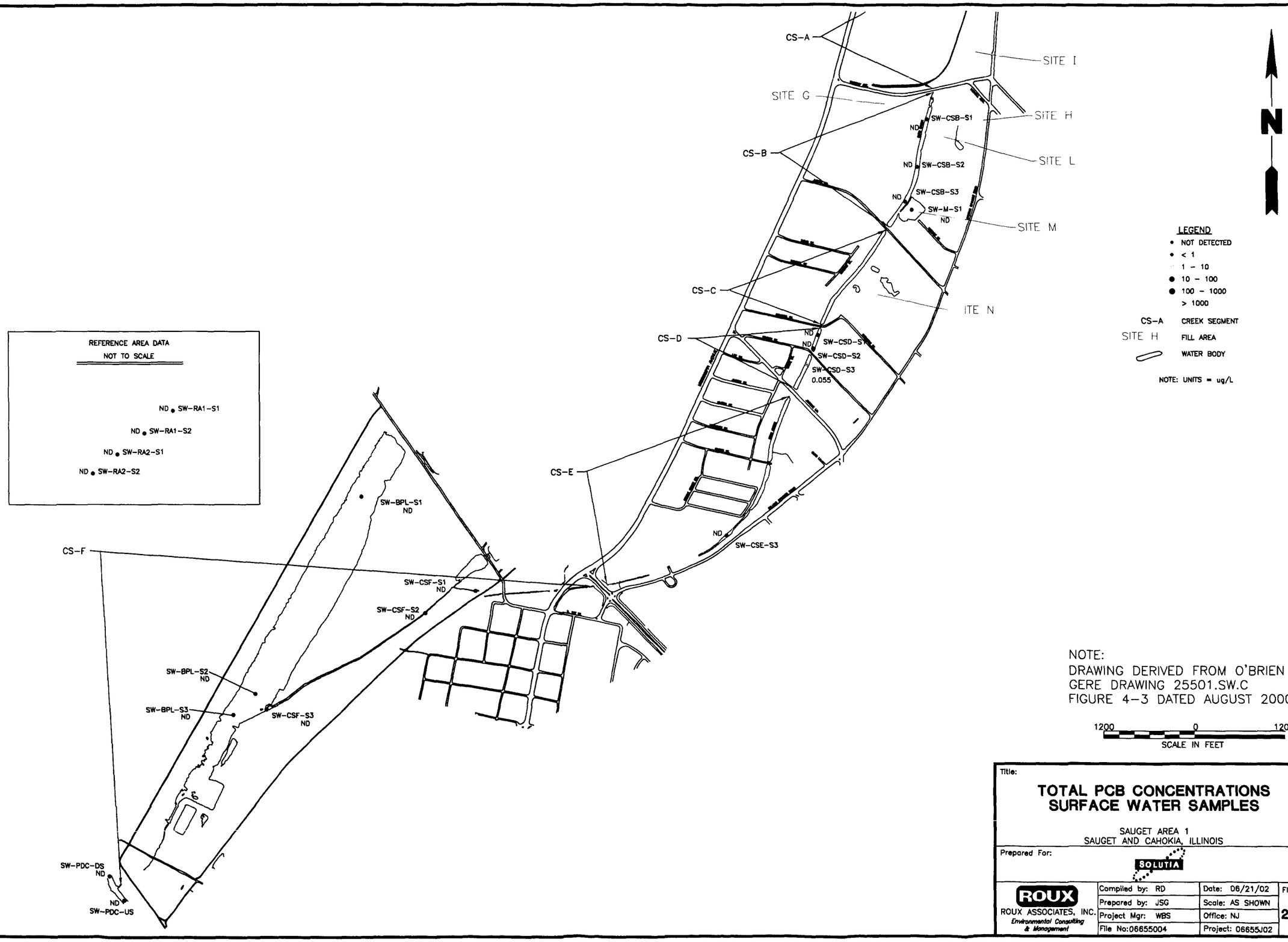
Title:

TOTAL HERBICIDE CONCENTRATIONS SURFACE WATER SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
	Prepared by: JSG	Scale: AS SHOWN	2-21
	Project Mgr: WBS	Office: NJ	
	File No:06655004	Project: 06655J02	



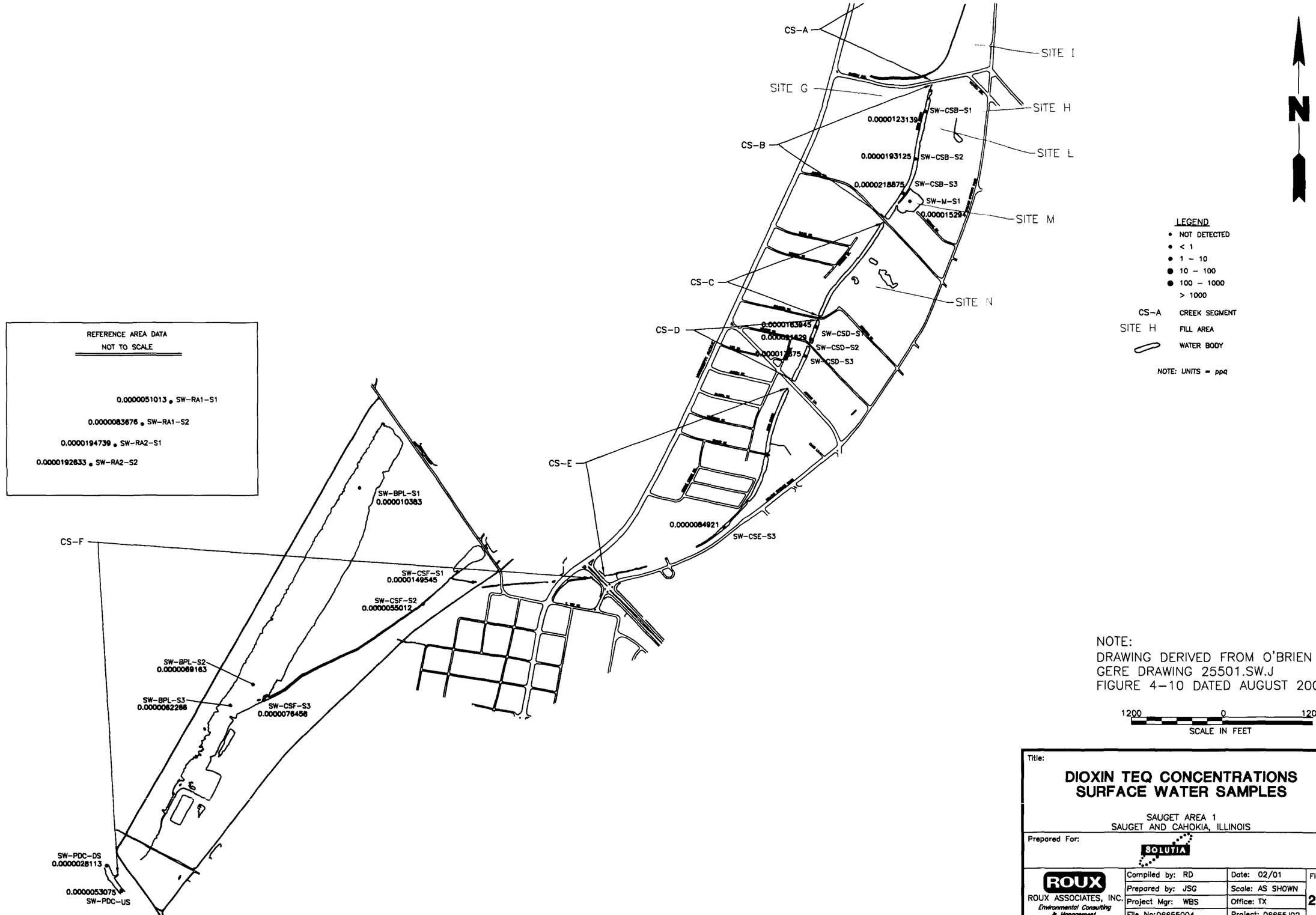
Title:

TOTAL PCB CONCENTRATIONS SURFACE WATER SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
	Prepared by: JSG	Scale: AS SHOWN	2-22
	Project Mgr: WBS	Office: NJ	
	File No:06655004	Project: 06655J02	



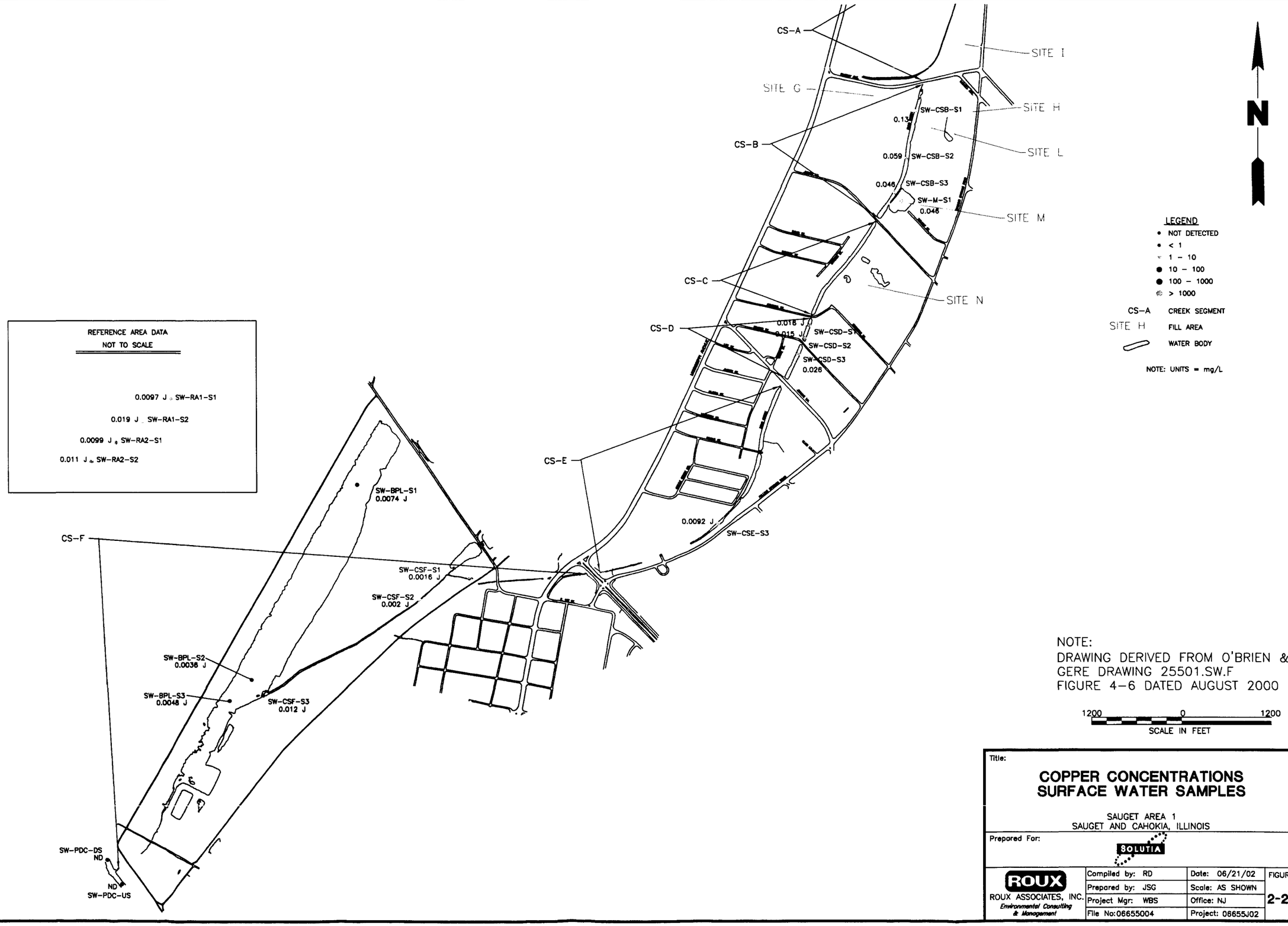
Title:

DIOXIN TEQ CONCENTRATIONS SURFACE WATER SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 02/01	FIGURE
	Prepared by: JSG	Scale: AS SHOWN	2-23
	Project Mgr: WBS	Office: TX	
	File No:06655004	Project: 06655J02	



NOTE:
DRAWING DERIVED FROM O'BRIEN & GERE DRAWING 25501.SW.F
FIGURE 4-6 DATED AUGUST 2000

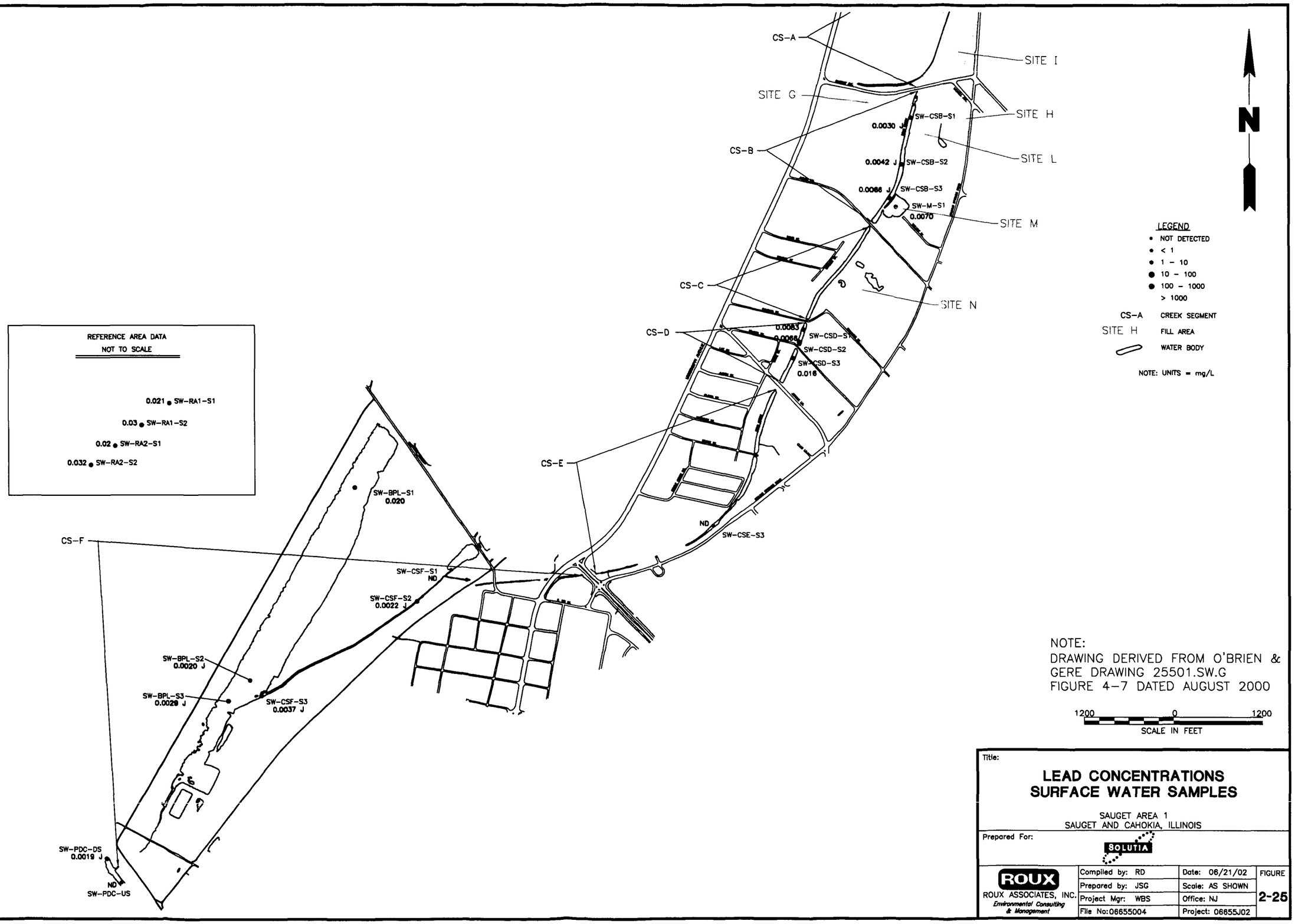
Title:

COPPER CONCENTRATIONS SURFACE WATER SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. *Environmental Consulting & Management*	Compiled by: RD	Date: 06/21/02	FIGURE
	Prepared by: JSG	Scale: AS SHOWN	2-24
	Project Mgr: WBS	Office: NJ	
	File No:06655004	Project: 06655J02	



NOTE:
DRAWING DERIVED FROM O'BRIEN & GERE DRAWING 25501.SW.G
FIGURE 4-7 DATED AUGUST 2000

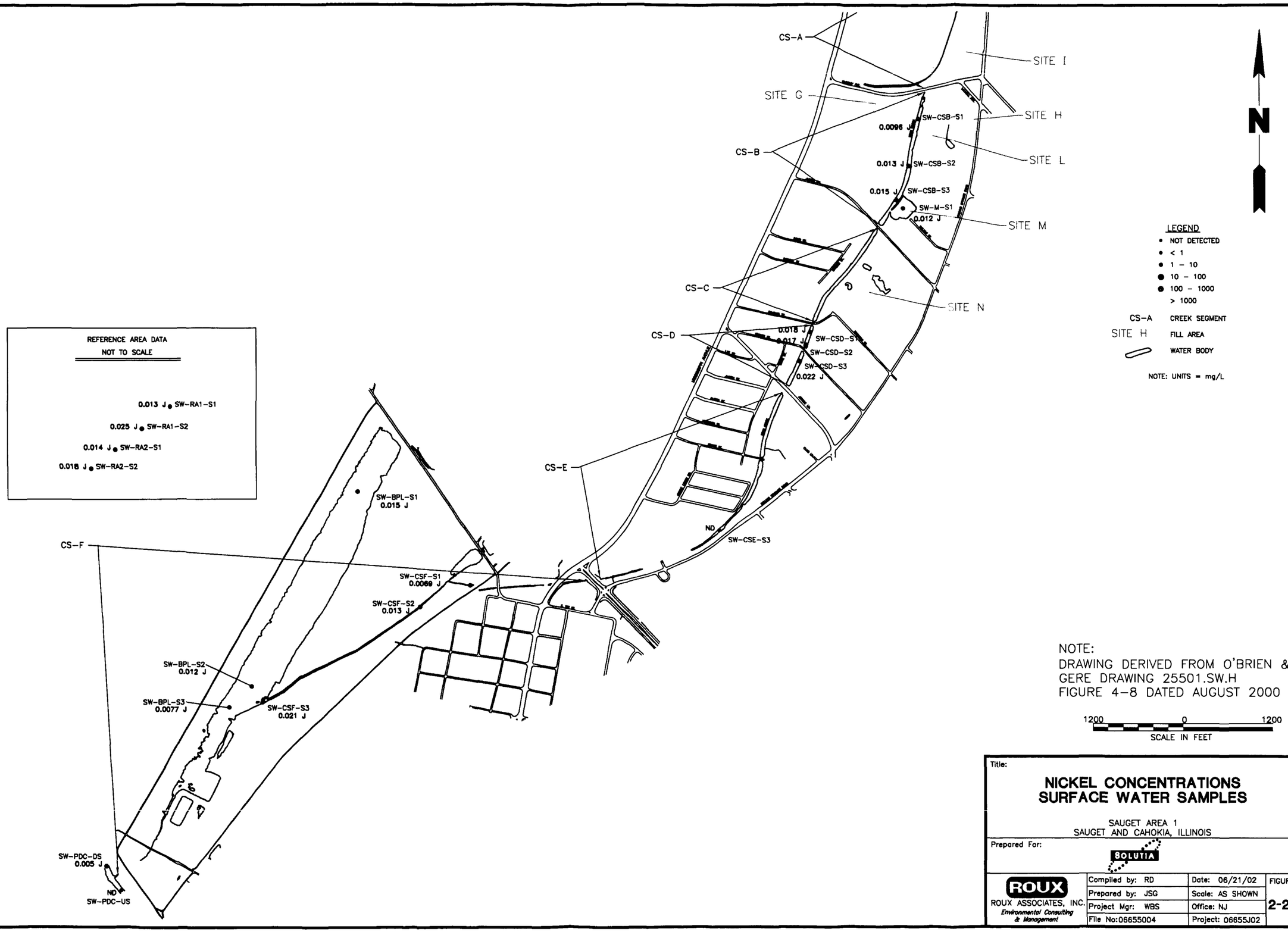
Title:

LEAD CONCENTRATIONS SURFACE WATER SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
	Prepared by: JSG	Scale: AS SHOWN	2-25
	Project Mgr: WBS	Office: NJ	
	File No: 06655004	Project: 06655J02	



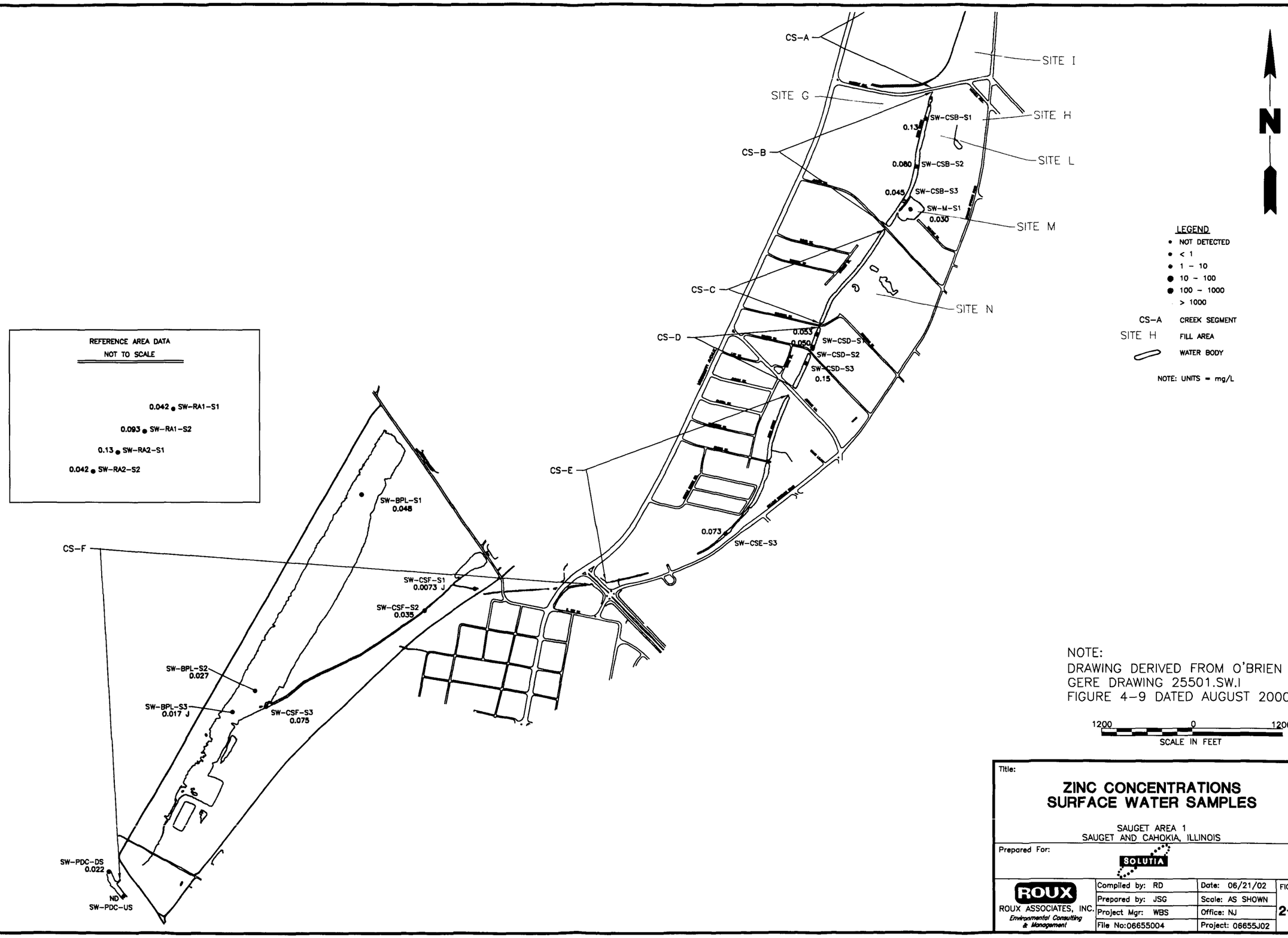
Title:

NICKEL CONCENTRATIONS SURFACE WATER SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
	Prepared by: JSG	Scale: AS SHOWN	2-26
	Project Mgr: WBS	Office: NJ	
	File No:06655004	Project: 06655J02	



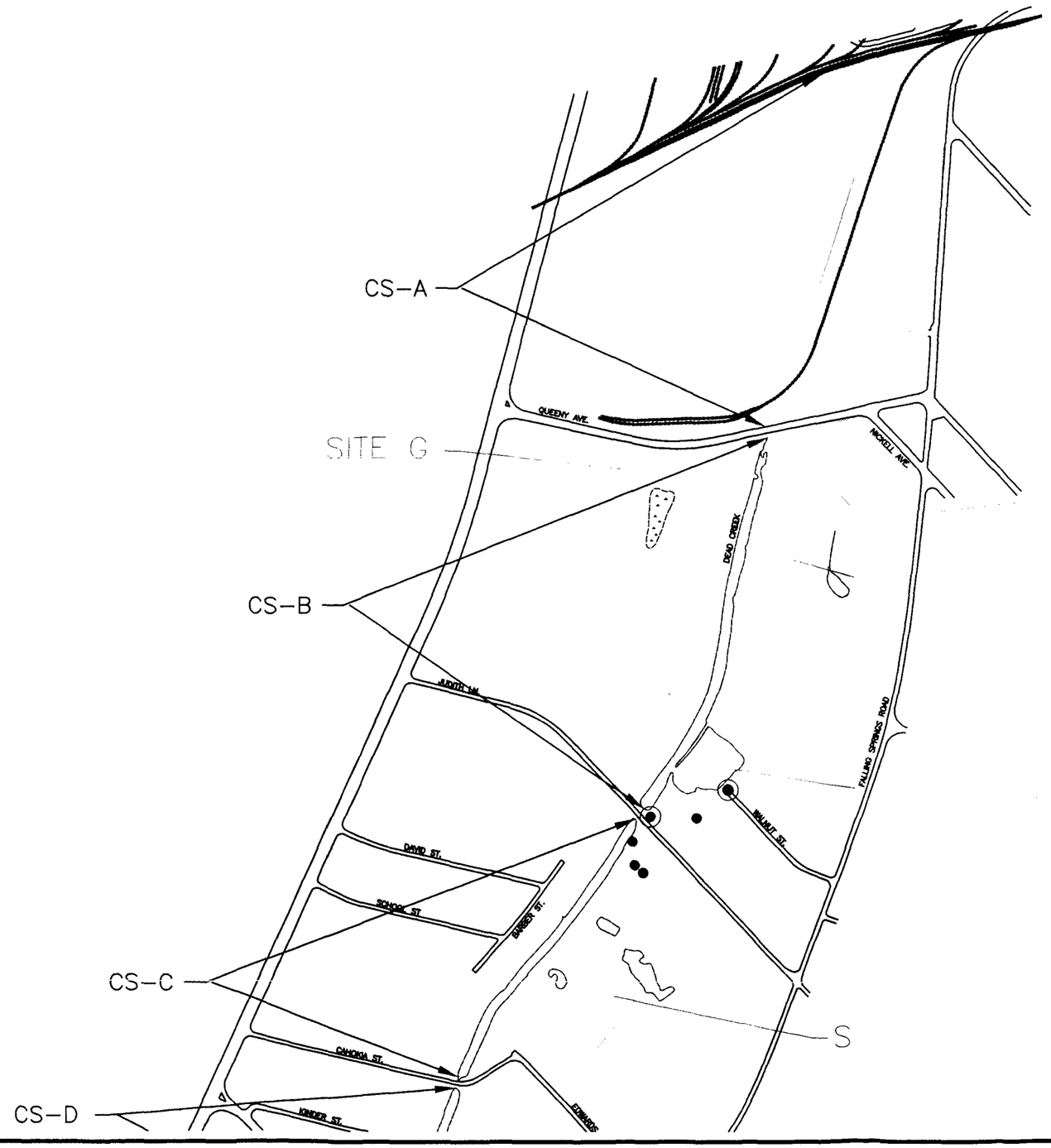
Title:

ZINC CONCENTRATIONS SURFACE WATER SAMPLES

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

ROUX ASSOCIATES, INC. Environmental Consulting & Management	Compiled by: RD	Date: 06/21/02	FIGURE
	Prepared by: JSG	Scale: AS SHOWN	2-27
	Project Mgr: WBS	Office: NJ	
	File No:06655004	Project: 06655J02	



N

LEGEND

SHALLOW AQUIFER GROUNDWATER SAMPLING LOCATION

DOMESTIC IRRIGATION WELL GROUNDWATER SAMPLING LOCATION

FILL AREA

WATER BODY

600 0 600
SCALE IN FEET

Title:

RESIDENTIAL AREA SHALLOW GROUNDWATER SAMPLING LOCATIONS

SAUGET AREA 1
SAUGET AND CAHOKIA, ILLINOIS

Prepared For: SOLUTIA

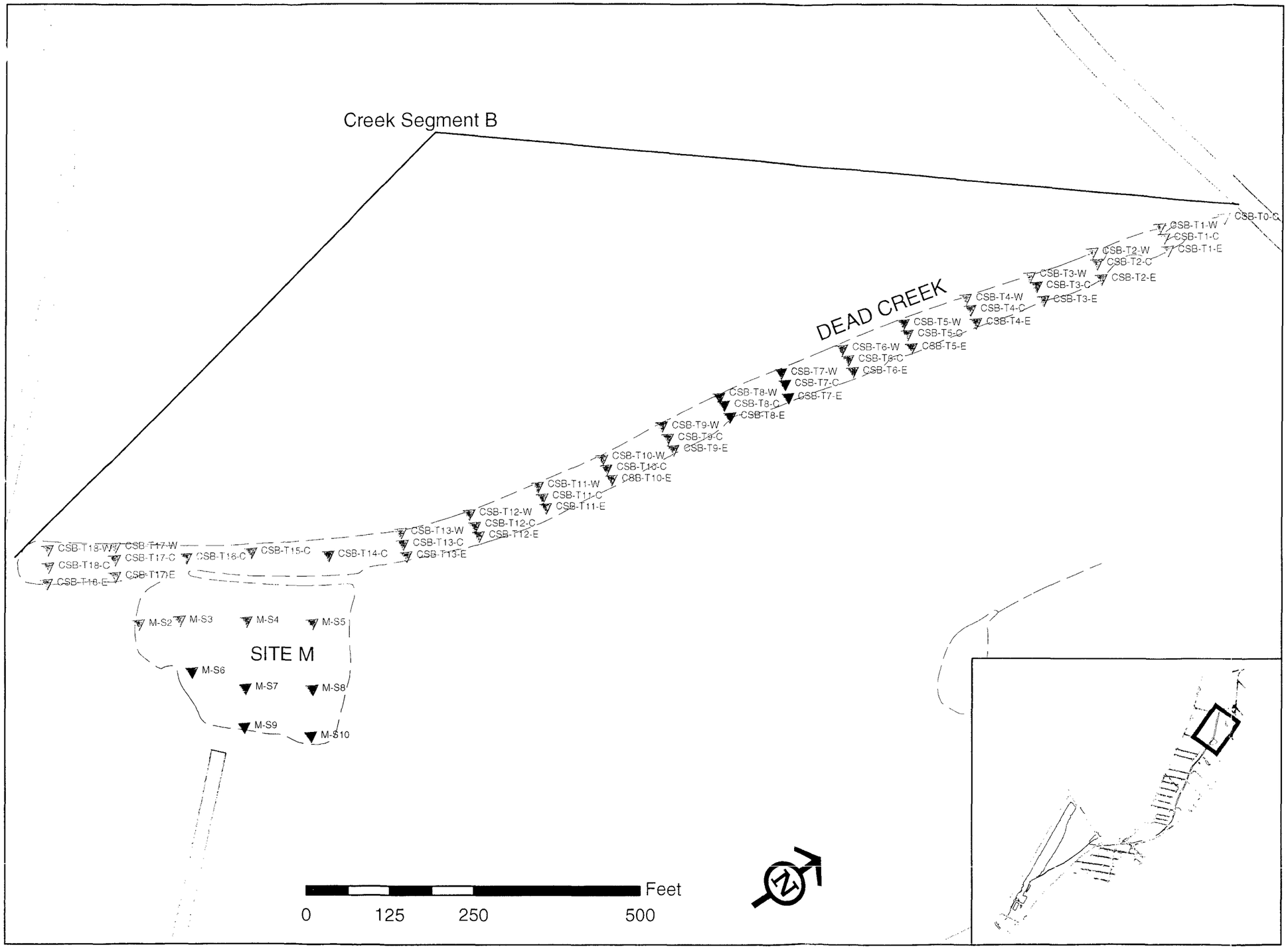
ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: RD	Date: 06/21/02	FIGURE
Prepared by: JSG	Scale: AS SHOWN	2-28
Project Mgr: WBS	Office: NJ	
File No:06655006	Project: 06655J02	

Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-29

Creek Bottom Soil
Sampling Locations
Creek Segment B and Site M



LEGEND

- Sample Locations
- Water
- Roads

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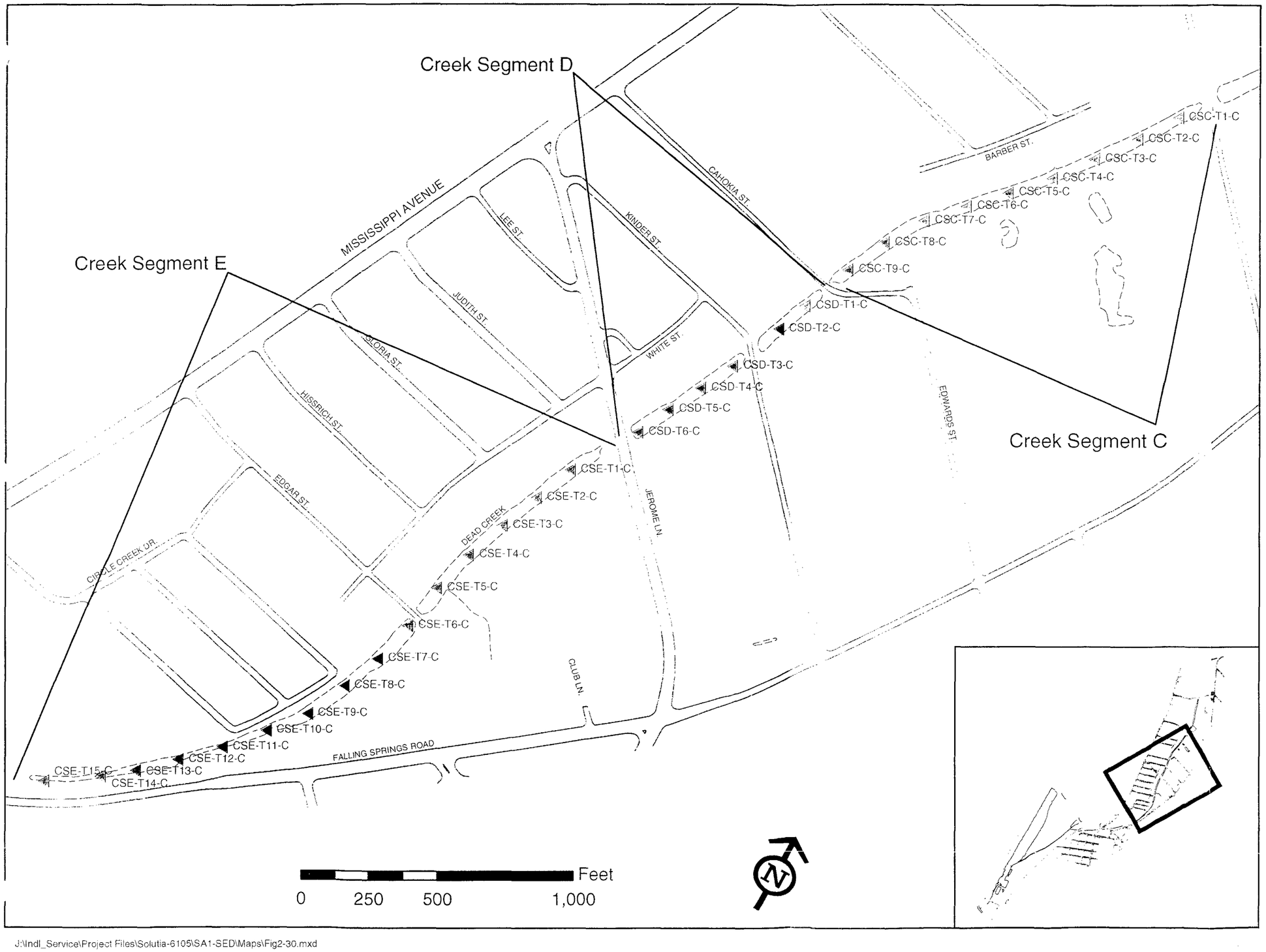
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-30
Creek Bottom Soil
Sampling Locations
Creek Segments C, D and E (North)



LEGEND

- Sample Locations
- Water
- Roads

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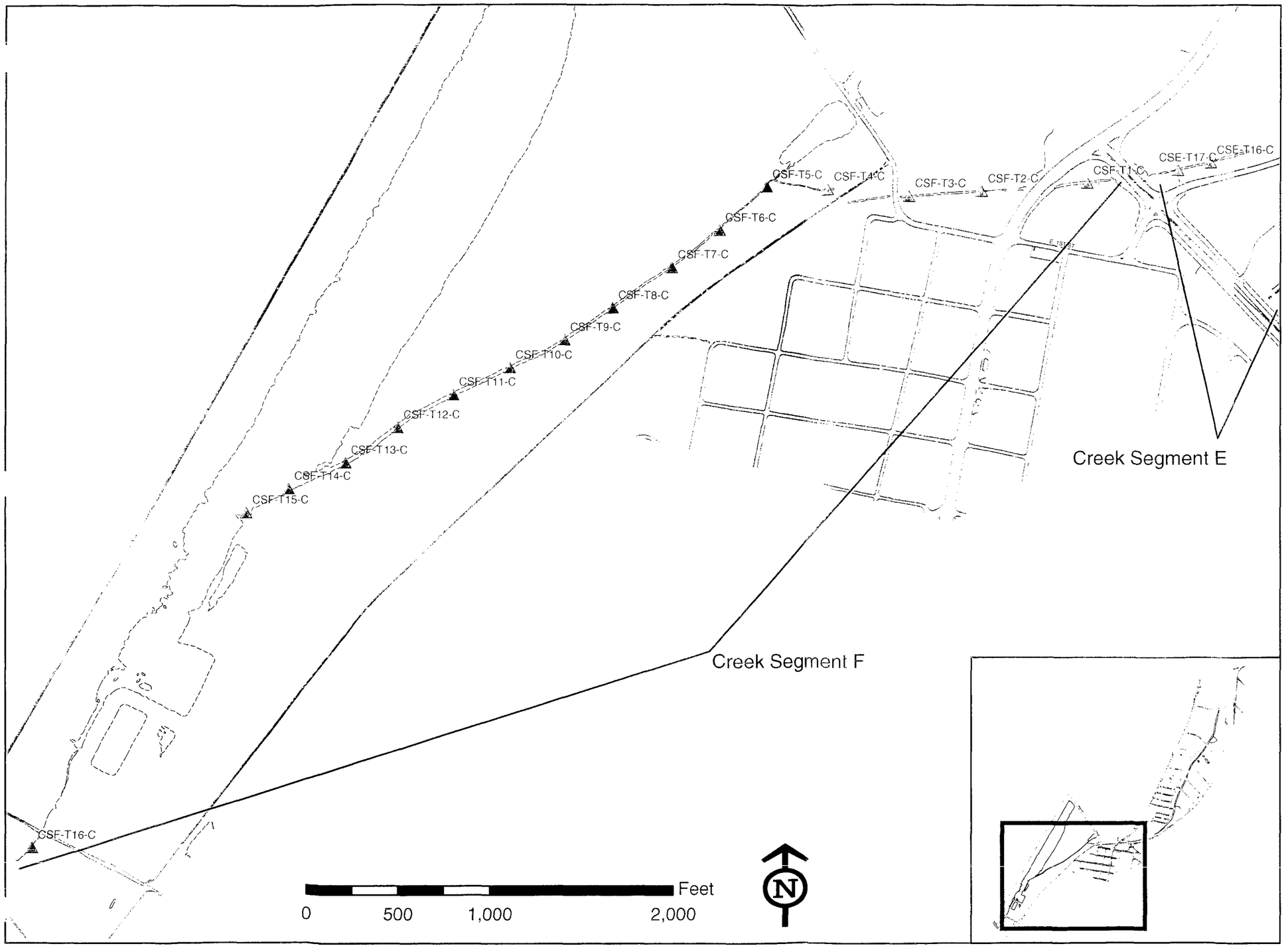
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-31
Creek Bottom Soil
Sampling Locations
Creek Segments E (South) and F



LEGEND

- Sample Locations
- Water
- Roads

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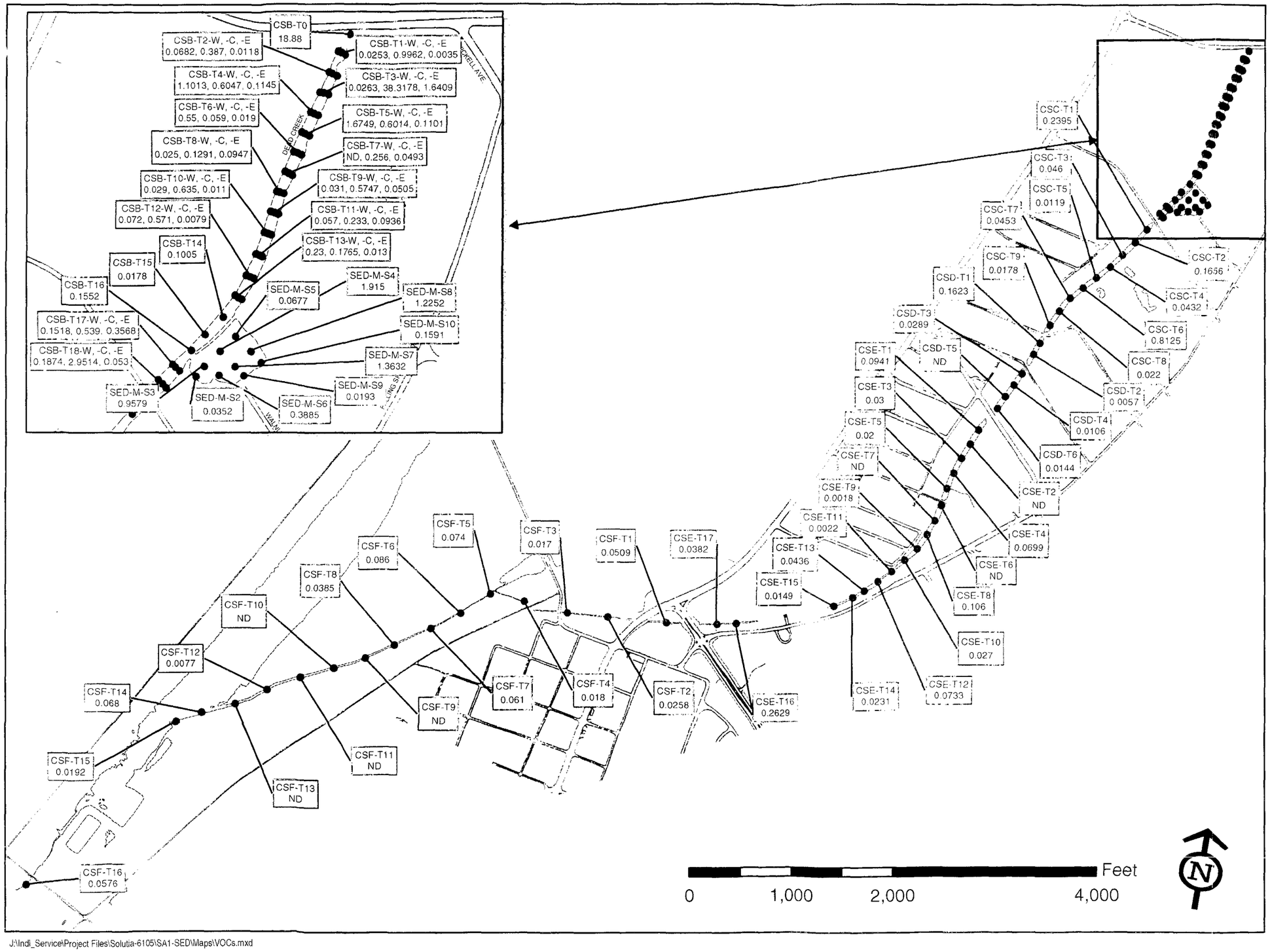

Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-32
Total VOC Concentrations
Creek Bottom Soil Samples

Legend

- • Total VOCs (mg/kg)
- ND Not Detected
- Roads
- Water

Notes:
1. For samples with duplicates, the maximum of the sample and the duplicate is presented.
2. Total is the sum of all detected analytes in this analytical group.

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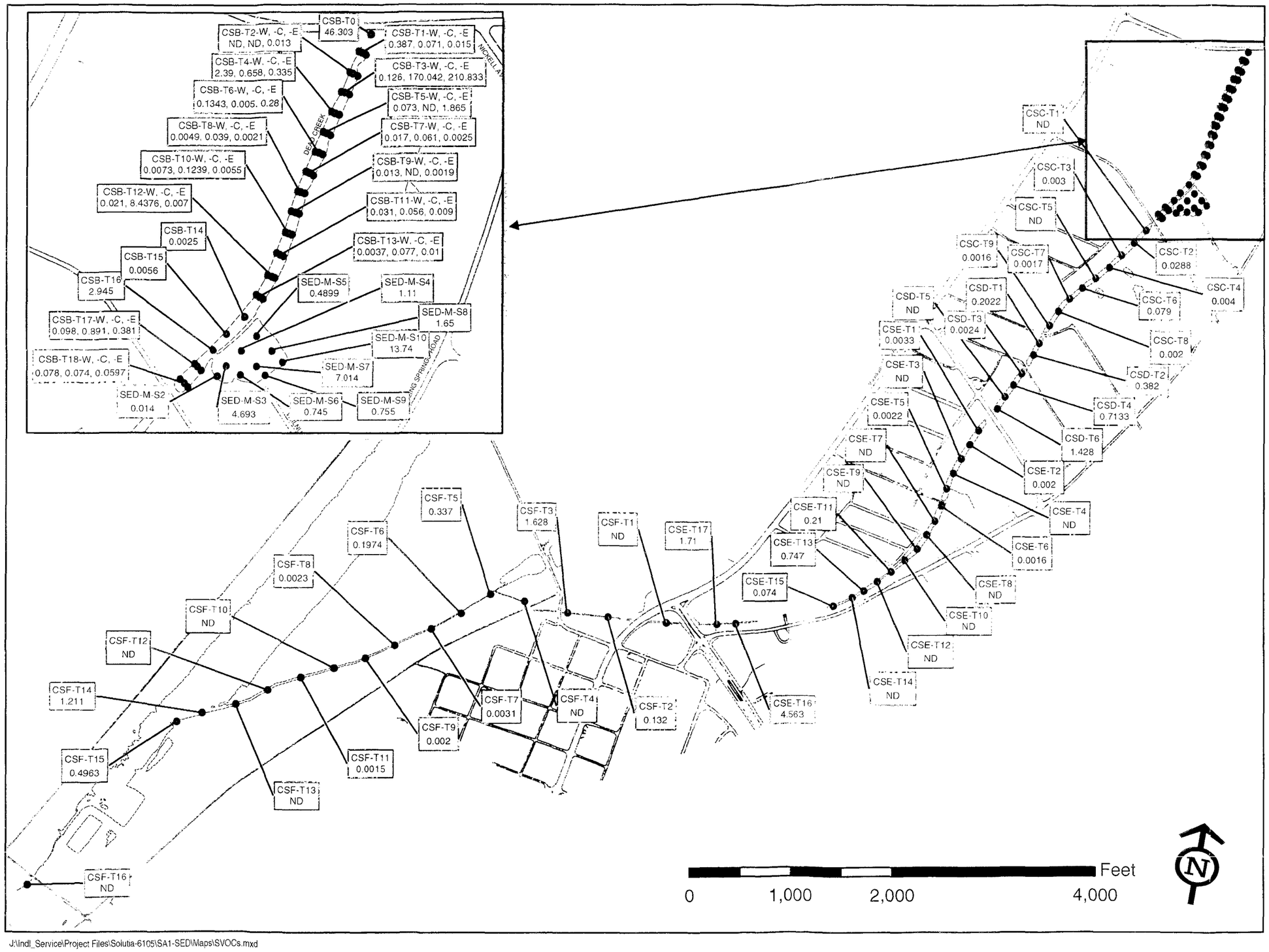

Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-33
Total SVOC Concentrations
Creek Bottom Soil Samples

Legend

- • Total SVOCs (mg/kg)
- ND Not Detected
- Roads
- Water

Notes:
1. For samples with duplicates, the maximum of the sample and the duplicate is presented.
2. Total is the sum of all detected analytes in this analytical group.

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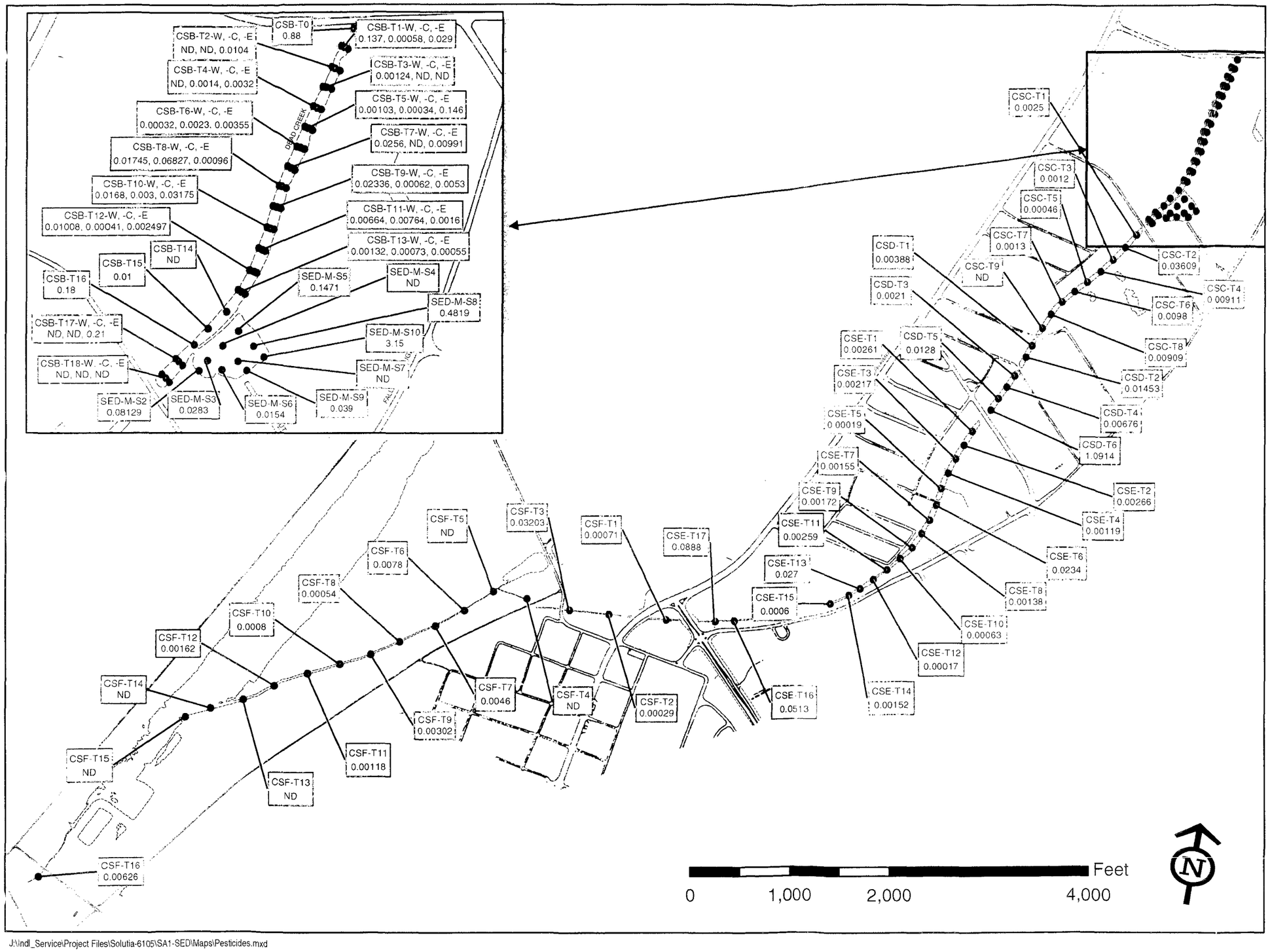
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-34
Total Pesticide Concentrations
Creek Bottom Soil Samples



Legend

- • Total Pesticides (mg/kg)
- ND Not Detected
- Roads
- Water

Notes:
1. For samples with duplicates, the maximum of the sample and the duplicate is presented.
2. Total is the sum of all detected analytes in this analytical group.

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St. Louis, Missouri

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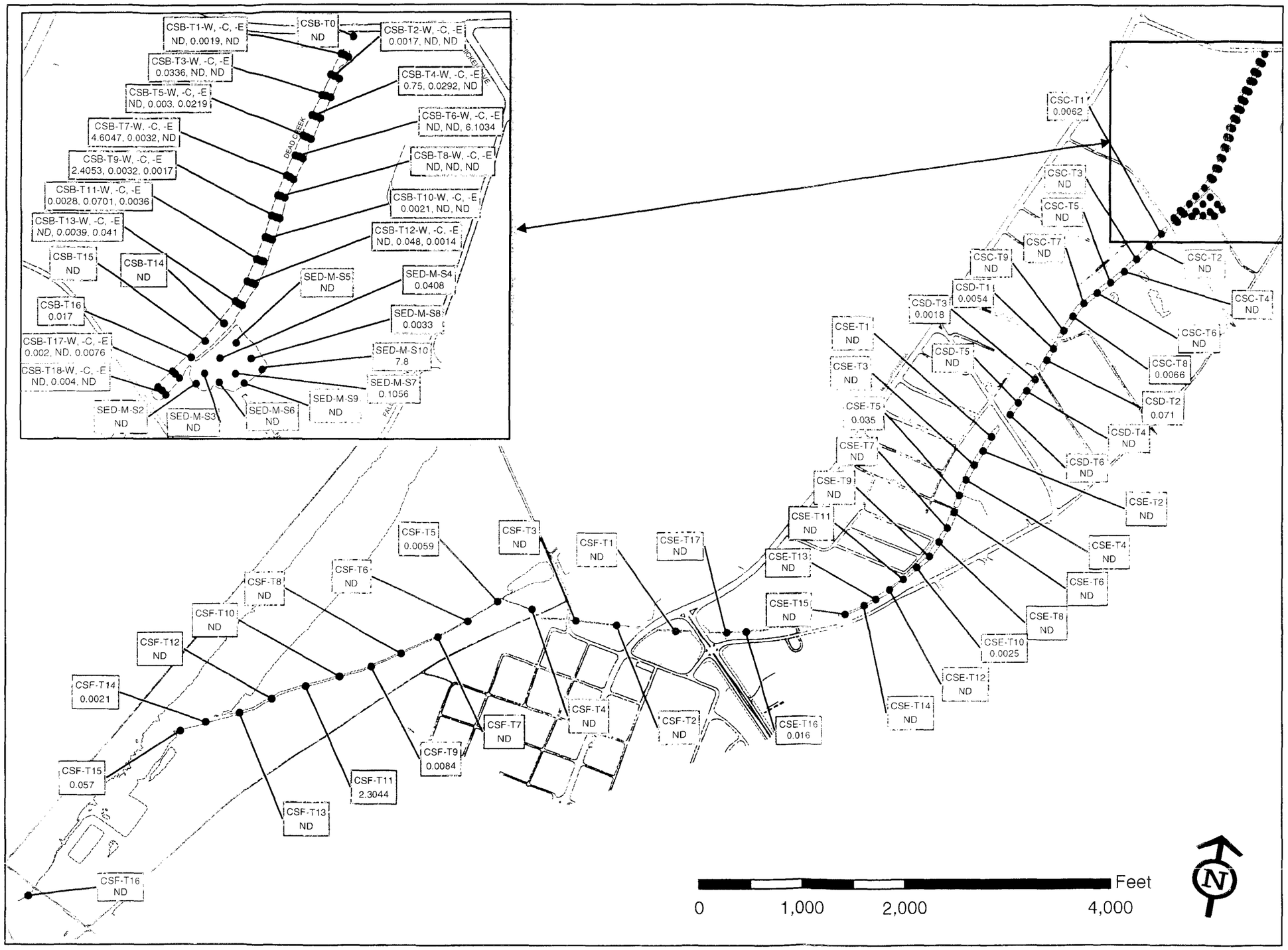

Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-35
Total Herbicide Concentrations
Creek Bottom Soil Samples

Legend

- • Total Herbicides (mg/kg)
- ND Not Detected
- Roads
- Water

Notes:
1. For samples with duplicates, the maximum of the sample and the duplicate is presented.
2. Total is the sum of all detected analytes in this analytical group.

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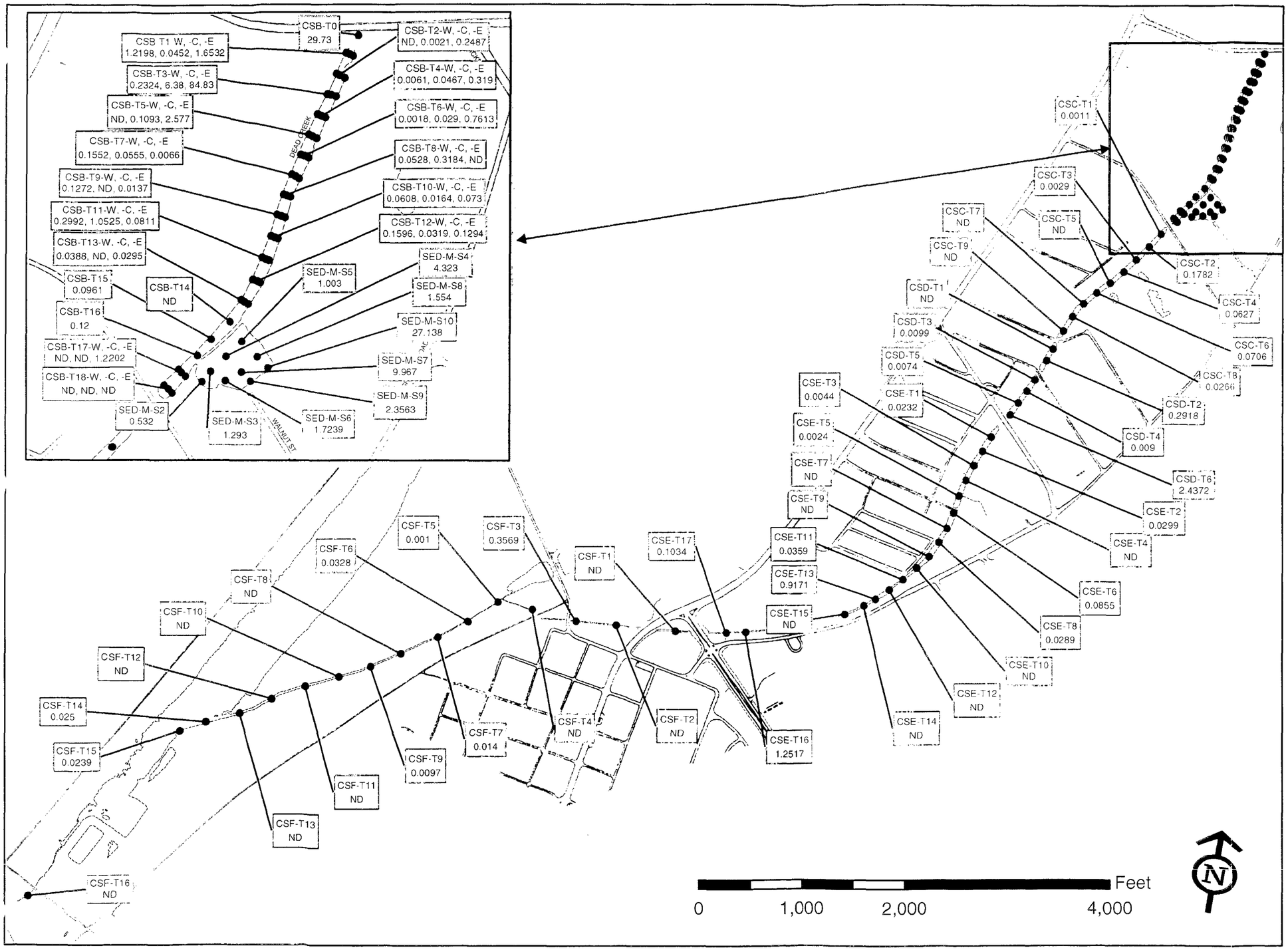
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-36
Total PCB Concentrations
Creek Bottom Soil Samples



Legend

- Total PCBs (mg/kg)
- ND Not Detected
- Roads
- Water

Notes:
1. For samples with duplicates, the maximum of the sample and the duplicate is presented.
2. Total is the sum of all detected analytes in this analytical group.

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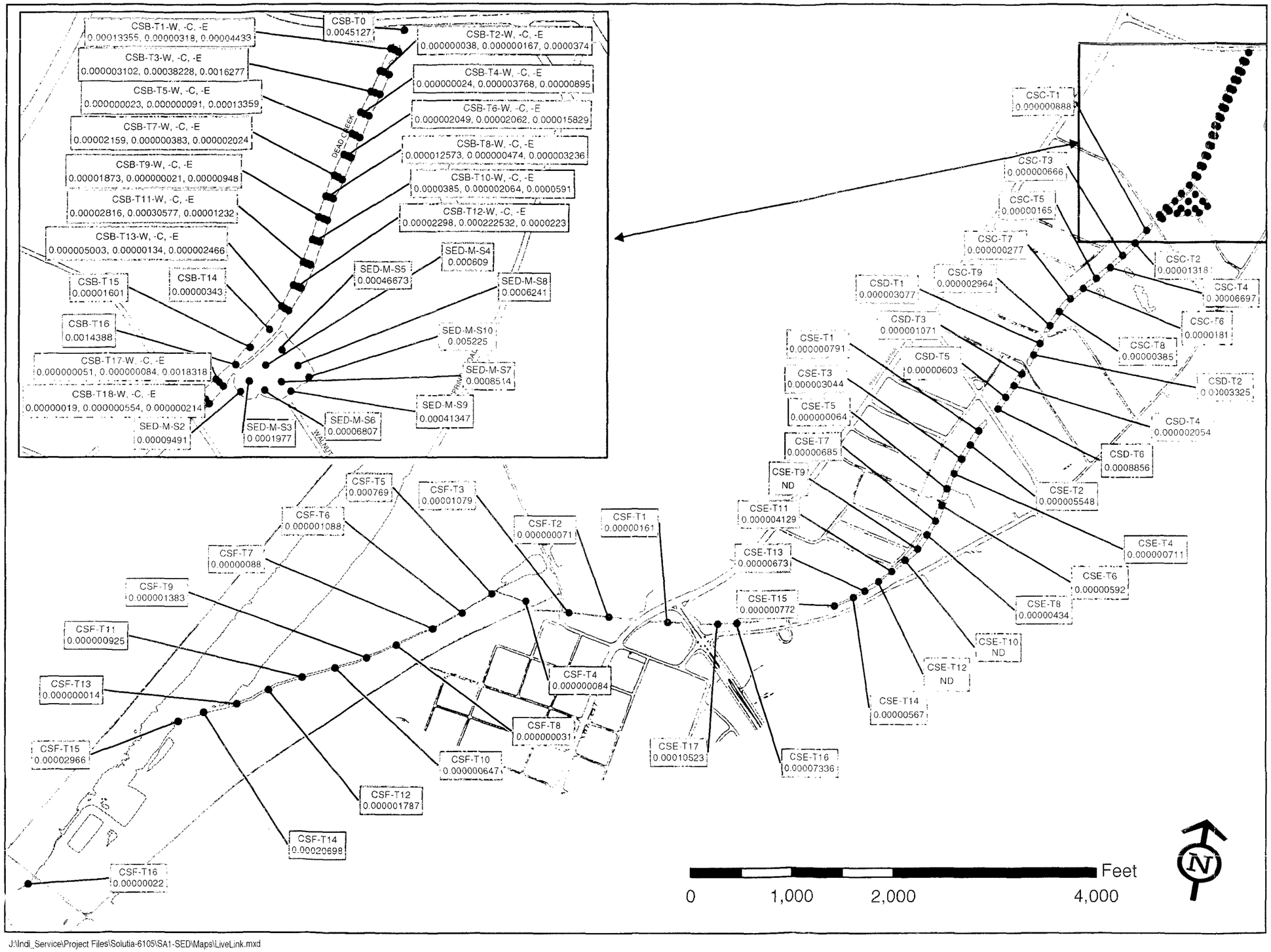

Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-37
Total Dioxin TEQ Concentrations
Creek Bottom Soil Samples

Legend

- • Total Dioxin TEQ (mg/kg)
- ND Not Detected
- Roads
- Water

Notes:
1. For samples with duplicates, the maximum of the sample and the duplicate is presented.
2. Total is the sum of all detected analytes in this analytical group.
3. Toxic Equivalent (TEQ) is the sum of dioxin congeners after multiplication by human health toxicity equivalent factor.

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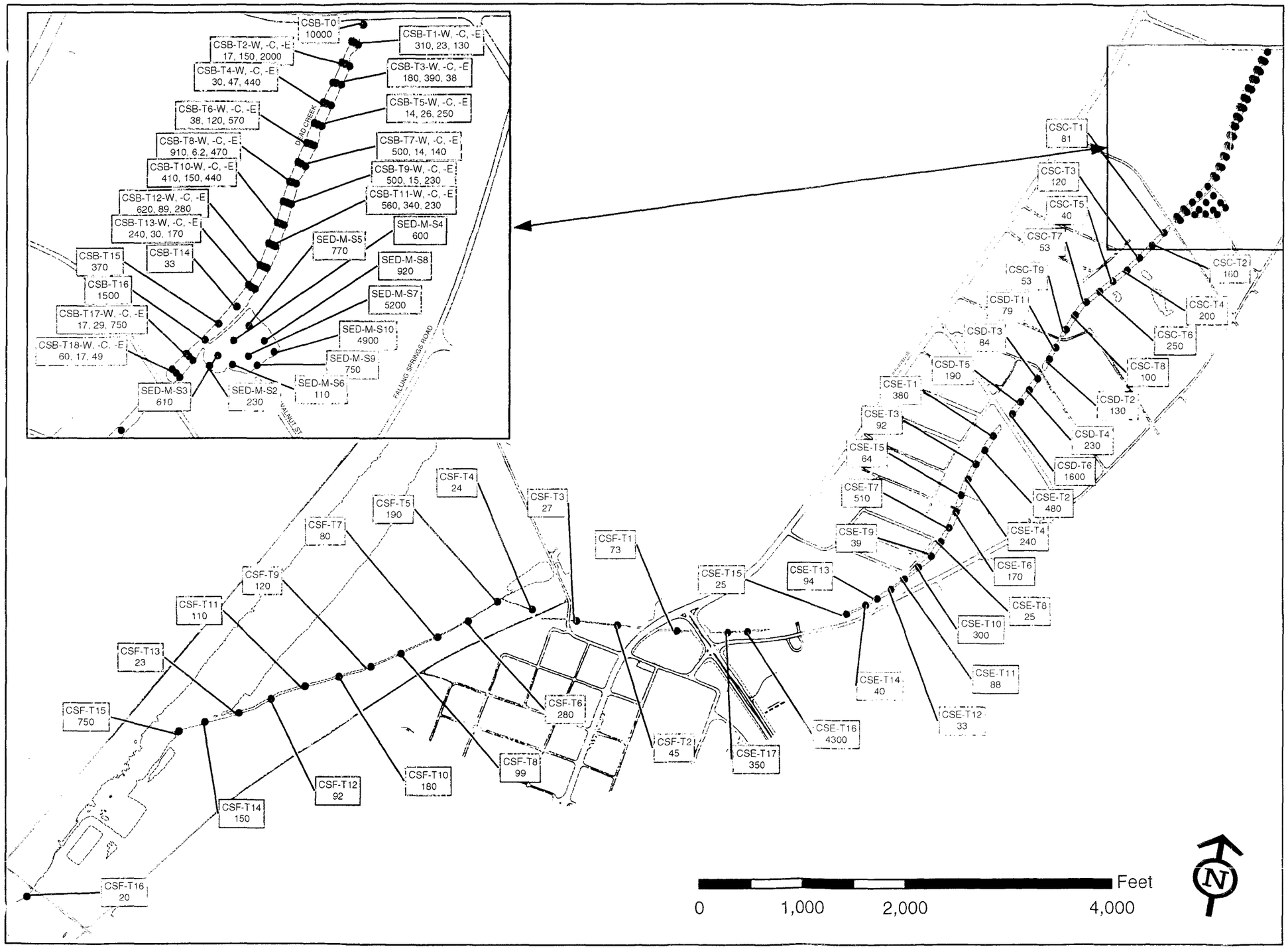
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-38
Copper Concentrations
Creek Bottom Soil Samples



Legend

- Copper (mg/kg)
- Roads
- Water

Note:
For samples with duplicates, the maximum of the sample and the duplicate is presented.

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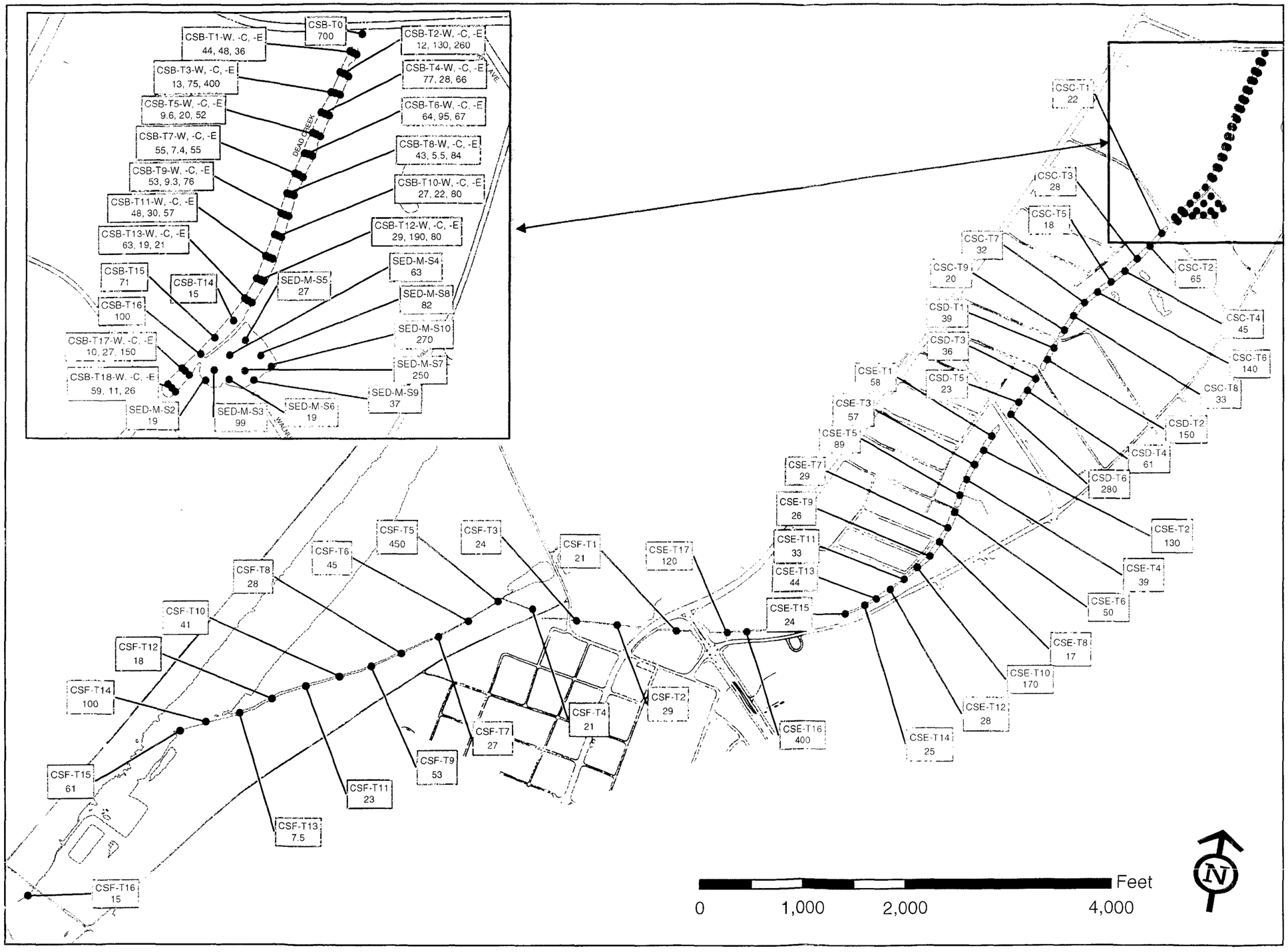

Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-39
Lead Concentrations
Creek Bottom Soil Samples

Legend

- Lead (mg/kg)
- Roads
- Water

Note:
For samples with duplicates, the maximum of the sample and the duplicate is presented.

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St. Louis, Missouri

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June 21, 2002
Revision 0

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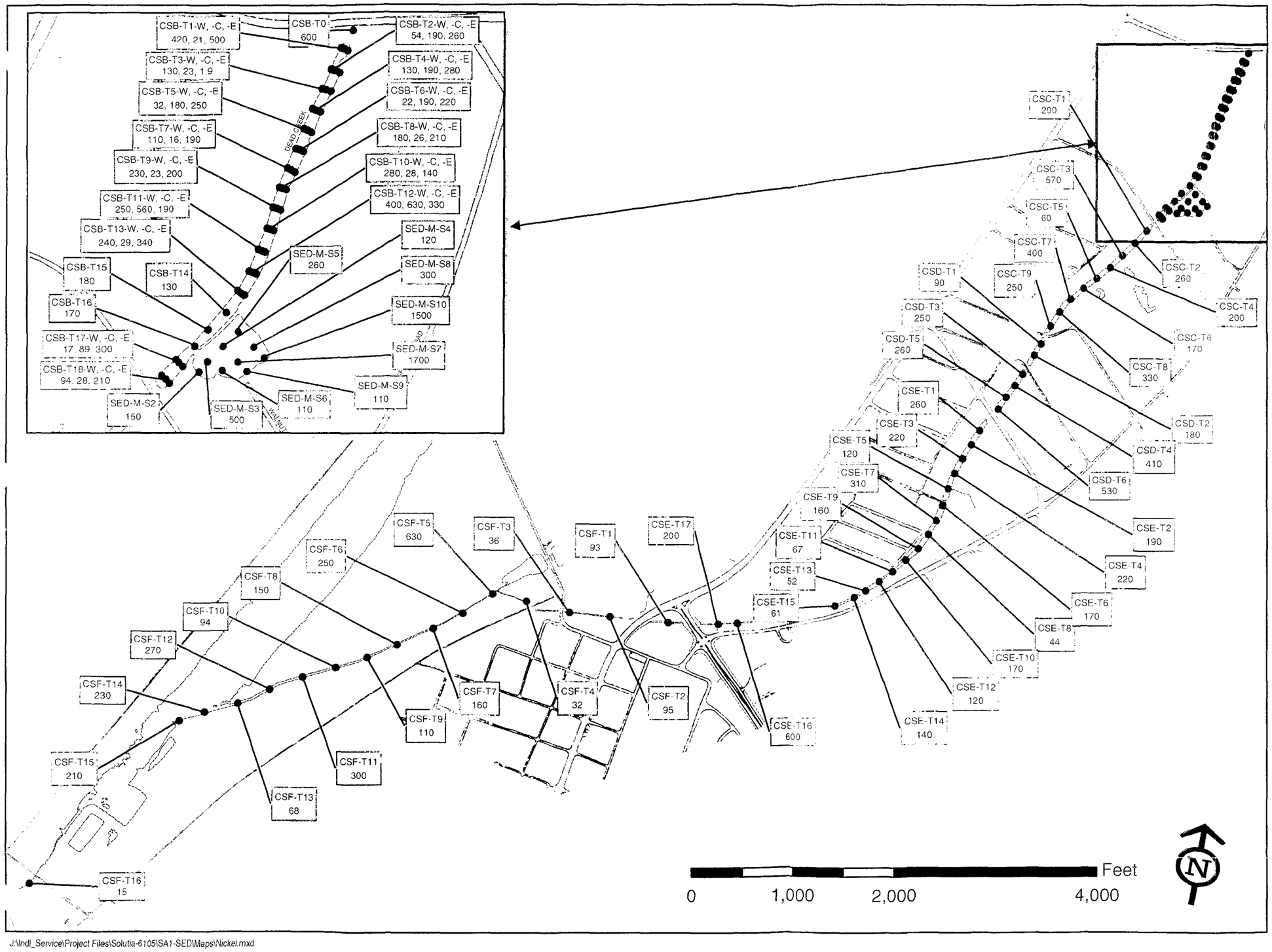
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-40
Nickel Concentrations
Creek Bottom Soil Samples



Legend

- Nickel (mg/kg)
- Roads
- Water

Note:
For samples with duplicates, the maximum of the sample and the duplicate is presented.

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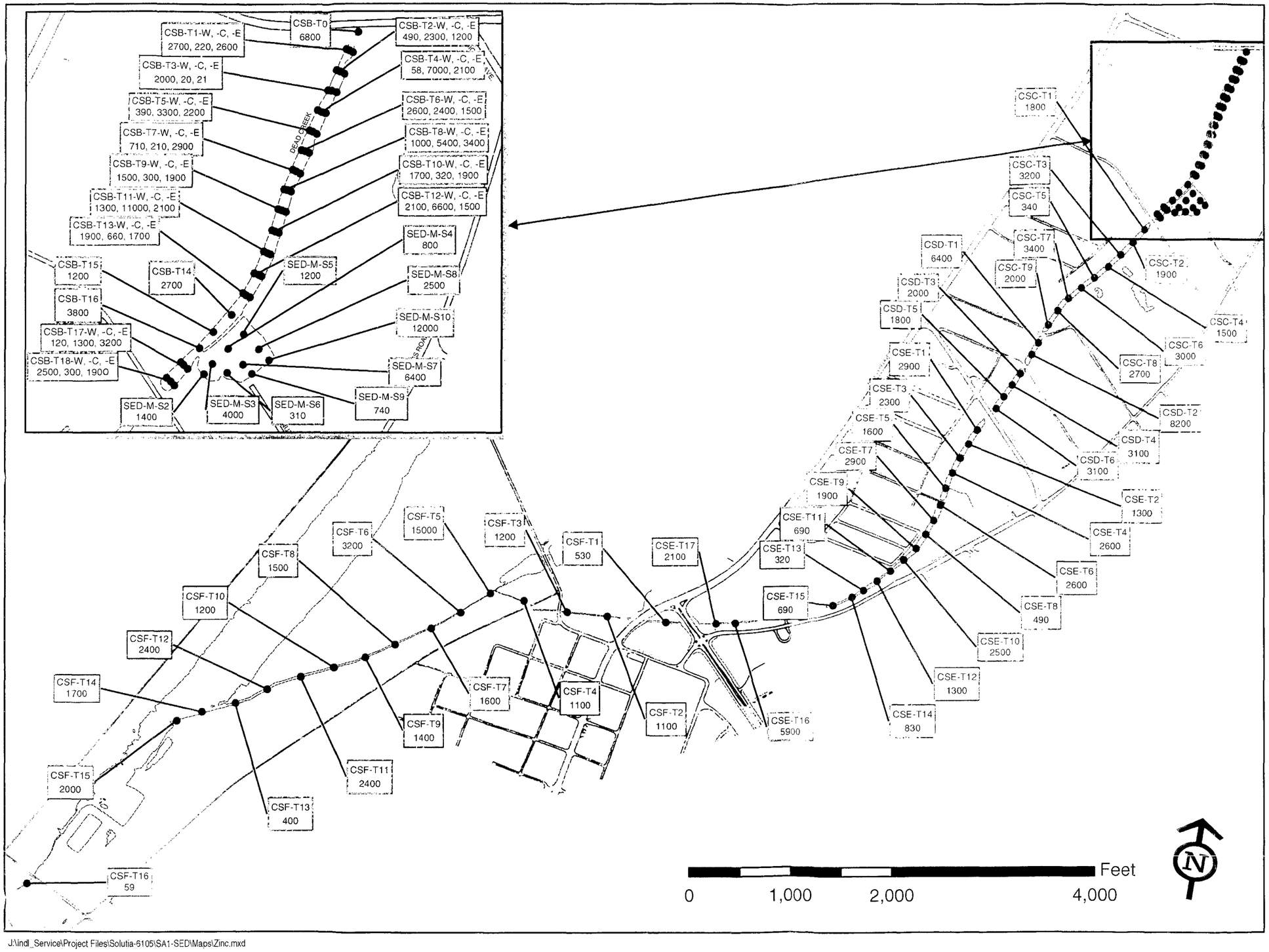
St. Louis, Missouri

ENSR INTERNATIONAL

June 21, 2002
Revision 0

J:\Indl_Service\Project Files\Solutia-6105\SA1-SED\Maps\Nickel.mxd



Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 2-41
Zinc Concentrations
Creek Bottom Soil Samples

Legend

- Zinc (mg/kg)
- Roads
- Water

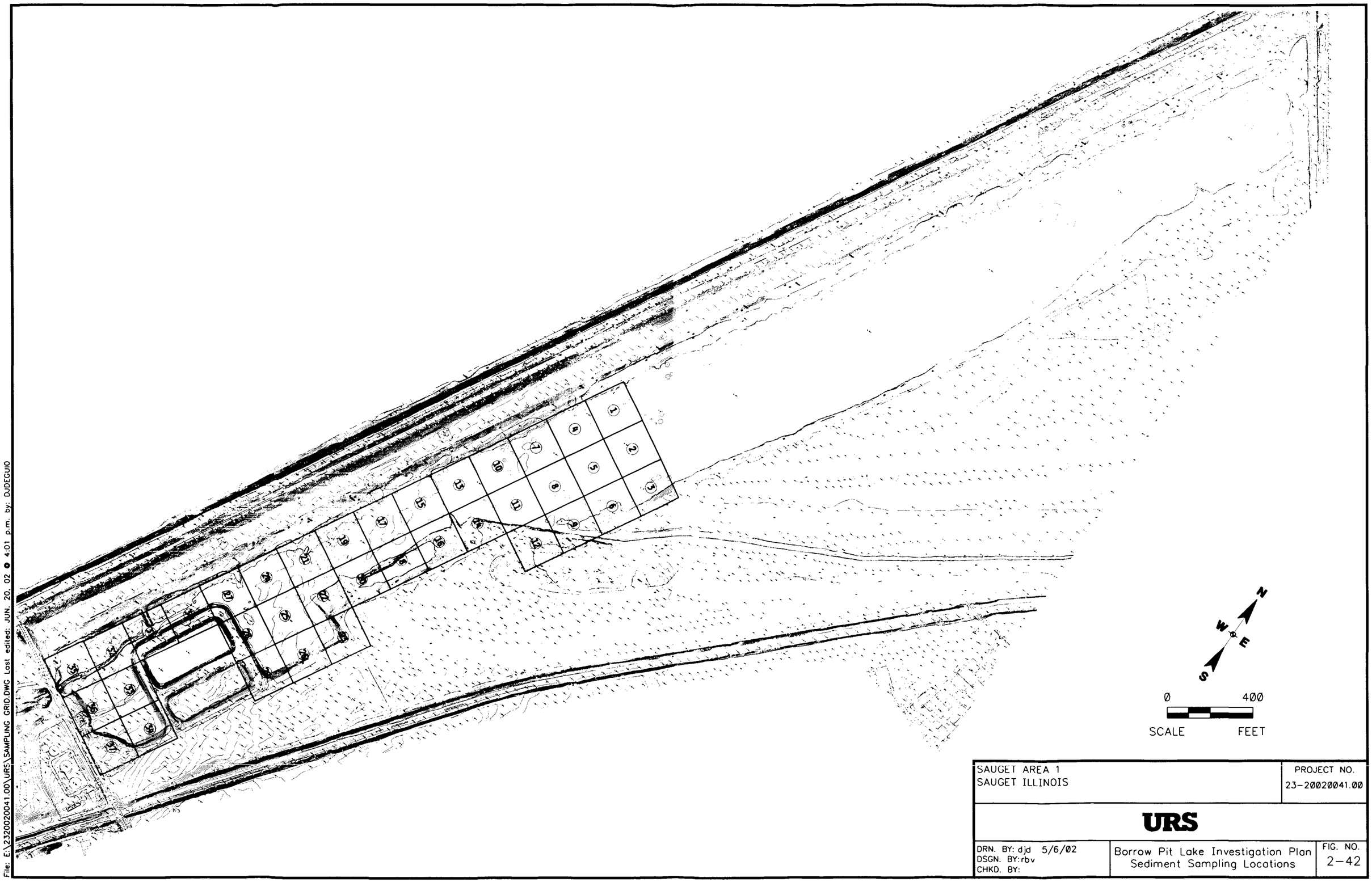
Note:
For samples with duplicates, the maximum of the sample and the duplicate is presented.

Solutia, Inc.
Remediation Technology Group
St. Louis, Missouri

ENSR INTERNATIONAL

June 21, 2002
Revision 0

J:\indl_Service\Project Files\Solutia-6105\SA1-SED\Maps\Zinc.mxd



SAUGET AREA 1 SAUGET ILLINOIS	PROJECT NO. 23-20020041.00
URS	
DRN. BY: djd 5/6/02 DSGN. BY: rbv CHKD. BY:	Borrow Pit Lake Investigation Plan Sediment Sampling Locations
	FIG. NO. 2-42

File: E:\232002041.00\URS\SAMPLING GRID.DWG Last edited: JUN. 20, 02 @ 4:01 p.m. by: DJDEGUIO

Table 1

Table 2 - 1

Industry-Specific Sediment Sample Analytical Data

PCBs

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

	Sample ID	FASED-BPL-S1-0-10IN	FASED-BPL-S1-0-10INEB	FASED-BPL-S2-0-10IN	FASED-BPL-S3-0-8IN	FASED-BPL-S4-0-10IN	FASED-BPL-S5-0-9IN	FASED-BPL-S6-0-11IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00
	Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound								
Decachlorobiphenyl		20 U	0.5 U	22 U	24 U	22 U	22 U	22 U
Dichlorobiphenyl		3.9 U	0.1 U	4.3 U	4.8 U	4.4 U	4.3 U	4.3 U
Heptachlorobiphenyl		12 U	0.3 U	13 U	15 U	13 U	13 U	13 U
Hexachlorobiphenyl		7.9 U	0.2 U	8.8 U	9.8 U	8.9 U	8.7 U	8.8 U
Monochlorobiphenyl		3.9 U	0.1 U	4.3 U	4.8 U	4.4 U	4.3 U	4.3 U
Nonachlorobiphenyl		20 U	0.5 U	22 U	24 U	22 U	22 U	22 U
Octachlorobiphenyl		12 U	0.3 U	13 U	15 U	13 U	13 U	13 U
Pentachlorobiphenyl		7.9 U	0.2 U	8.8 U	9.8 U	8.9 U	8.7 U	8.8 U
Tetrachlorobiphenyl		7.9 U	0.2 U	8.8 U	9.8 U	8.9 U	8.7 U	8.8 U
Trichlorobiphenyl		3.9 U	0.1 U	4.3 U	4.8 U	4.4 U	4.3 U	4.3 U
Total PCBs		ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

	Sample ID	FASED-BPL-S6-0-11INFD	FASED-BPL-S7-0-9IN	FASED-BPL-S8-0-9IN	FASED-CSB-S10W-0-9IN	FASED-CSB-S10W-0-9INFD	FASED-CSB-S1W-0-25IN	FASED-CSB-S2-0-23IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/02/00	02/02/00	02/01/00	02/01/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound								
Decachlorobiphenyl		24 U	22 U	24 U	100 U	70 J	730	2300 U
Dichlorobiphenyl		4.8 U	4.4 U	4.8 U	20 U	19 U	100 U	460 U
Heptachlorobiphenyl		14 U	13 U	14 U	700	860	2100	1400 U
Hexachlorobiphenyl		9.7 U	8.9 U	9.7 U	1200	1500	6600	3400
Monochlorobiphenyl		4.8 U	4.4 U	4.8 U	20 U	19 U	100 U	460 U
Nonachlorobiphenyl		24 U	22 U	24 U	100 U	72 J	510 U	2300 U
Octachlorobiphenyl		14 U	13 U	14 U	190	360	380	1400 U
Pentachlorobiphenyl		9.7 U	8.9 U	9.7 U	740	800	7300	3800
Tetrachlorobiphenyl		9.7 U	8.9 U	9.7 U	320	680	5400	5700
Trichlorobiphenyl		4.8 U	4.4 U	4.8 U	20	35	840	1400
Total PCBs		ND	ND	ND	3170	4377	23350	14300

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

	Sample ID	FASED-CSB-S3-0-26IN	FASED-CSB-S4W-0-23IN	FASED-CSB-S5-0-22IN	FASED-CSB-S6-0-20IN	FASED-CSB-S7-0-18IN	FASED-CSB-S8E-0-22IN	FASED-CSB-S9W-0-9IN
	Sample Date	02/01/00	02/01/00	02/01/00	02/02/00	02/02/00	02/02/00	02/02/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound								
Decachlorobiphenyl		140 J	280 J	620	250 J	18 J	150	490 U
Dichlorobiphenyl		72	66 U	210	180	9.1	27 U	97 U
Heptachlorobiphenyl		96 U	170 J	500	160 J	15 U	57 J	490
Hexachlorobiphenyl		400	1300	2800	1100	22	360	1800
Monochlorobiphenyl		32 U	66 U	63 U	62 U	5	27 U	97 U
Nonachlorobiphenyl		160 U	330 U	320 U	310 U	25 U	140 U	490 U
Octachlorobiphenyl		96 U	200 U	190 U	190 U	15 U	82 U	100 J
Pentachlorobiphenyl		290	3300	4800	3500	60	700	1900
Tetrachlorobiphenyl		650	7500	3400	14000	240	750	16000
Trichlorobiphenyl		330	2300	1200	5100	68	55	2200
Total PCBs		1882	14850	13530	24290	422.1	2072	22490

NOTES: *U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.*

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSC-S1-0-13IN	FASED-CSC-S10-0-28IN	FASED-CSC-S11-0-25IN	FASED-CSC-S11-0-25INFD	FASED-CSC-S12E-0-18IN	FASED-CSC-S2-0-28IN	FASED-CSC-S2-0-28INFD
Sample Date	01/31/00	02/01/00	02/01/00	02/01/00	02/01/00	01/31/00	01/31/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	500 J	320 J	1800	4300 U	3600	540 J	1900
Dichlorobiphenyl	230 U	130 U	260	850 U	66 U	140 U	140 J
Heptachlorobiphenyl	690 U	250 J	1000	2600 U	4300	420 U	1600
Hexachlorobiphenyl	780	2400	6300	1600 J	14000	970	6500
Monochlorobiphenyl	230 U	130 U	260	850 U	66 U	140 U	150 U
Nonachlorobiphenyl	1200 U	680 J	1000 U	4300 U	900	700 U	350 J
Octachlorobiphenyl	690 U	410 U	600 U	2600 U	1000	420 U	320 J
Pentachlorobiphenyl	1100	3600	9300	2700	13000	1700	9000
Tetrachlorobiphenyl	460 U	2800	7300	1700 U	11000	730	6400
Trichlorobiphenyl	230 U	960	1000	850 U	450	190	1800
Total PCBs	2380	11010	27220	4300	48250	4130	28010

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSC-S3-0-20IN	FASED-CSC-S4-0-22IN	FASED-CSC-S5W-0-26IN	FASED-CSC-S6W-0-26IN	FASED-CSC-S7-0-29IN	FASED-CSC-S8-0-16IN	FASED-CSC-S9-0-27IN
Sample Date	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	02/01/00	02/01/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	1400 J	260	1200	1100	410 J	490 J	2000 J
Dichlorobiphenyl	330 U	38 U	130 U	50 U	140	180 U	850 J
Heptachlorobiphenyl	1000 U	120	630	700	360 U	540 U	2900 U
Hexachlorobiphenyl	2800	1000	4100	3500	480	2000	7800
Monochlorobiphenyl	330 U	38 U	130 U	50 U	120 U	180 U	940 U
Nonachlorobiphenyl	1700 U	190	680 U	140 J	600 U	900 U	4800 U
Octachlorobiphenyl	1000 U	110 U	410 U	190	360 U	540 U	2900 U
Pentachlorobiphenyl	3800	2100	3900	4600	240 U	2800	9100
Tetrachlorobiphenyl	1900	950	3500	2500	240 U	1500	4700
Trichlorobiphenyl	570	110	300	80	240	420	2300
Total PCBs	10470	4730	13630	12810	1270	7210	26750

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSC-S9-0-27INFD	FASED-CSD-S1W-0-24IN	FASED-CSD-S2-0-15IN	FASED-CSD-S3-0-21IN	FASED-CSD-S4-0-23IN	FASED-CSD-S5-0-10IN	FASED-CSD-S6E-0-13IN
Sample Date	02/01/00	02/02/00	01/27/00	01/27/00	01/27/00	01/31/00	01/28/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	470	140 U	720	370	780	8.7 J	12 J
Dichlorobiphenyl	67	27 U	66	53 U	57 J	4.5 U	5.5 U
Heptachlorobiphenyl	340	82 U	210	270	480	14 U	17 U
Hexachlorobiphenyl	2600	96	720	2200	1800	18	39
Monochlorobiphenyl	60 U	27 U	49 U	53 U	61 U	4.5 U	5.5 U
Nonachlorobiphenyl	120 J	140 U	670	260 J	520	23 U	28 U
Octachlorobiphenyl	61 J	82 U	57 J	160 U	69 J	14 U	17 U
Pentachlorobiphenyl	4000	110	440	3000	4300	9.6	66
Tetrachlorobiphenyl	2800	55 U	610	1800	2200	9.2 U	11 U
Trichlorobiphenyl	380	27 U	470	190	410	4.5 U	5.5 U
Total PCBs	10838	206	3963	8090	10616	36.3	117

NOTES: *U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.*

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSD-S7-0-33IN	FASED-CSD-S8-0-29IN	FASED-CSD-S9W-0-23IN	FASED-CSE-S1-0-12IN	FASED-CSE-S10W-0-27IN	FASED-CSE-S11W-0-22IN	FASED-CSE-S12-0-21IN
Sample Date	01/31/00	01/31/00	01/31/00	01/19/00	01/24/00	01/24/00	01/24/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	1800	540 J	320	270 U	360 U	150 U	1400 U
Dichlorobiphenyl	280 U	120 U	52 U	54 U	72 U	30 U	280 U
Heptachlorobiphenyl	860 U	370 U	160 U	160 U	220 U	92 U	860 U
Hexachlorobiphenyl	1400	140 J	470	110 U	150 U	62 U	580 U
Monochlorobiphenyl	280 U	120 U	52 U	54 U	72 U	30 U	280 U
Nonachlorobiphenyl	720 J	620 U	110 J	270 U	360 U	150 U	1400 U
Octachlorobiphenyl	860 U	370 U	160 U	160 U	220 U	92 U	860 U
Pentachlorobiphenyl	490 J	250 U	450	110 U	150 U	62 U	580 U
Tetrachlorobiphenyl	580 U	250 U	70 J	110 U	150 U	62 U	580 U
Trichlorobiphenyl	1400	250	61	54 U	72 U	30 U	280 U
Total PCBs	5810	930	1481	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSE-S13E-0-21IN	FASED-CSE-S14W-0-31IN	FASED-CSE-S14W-0-31IN	FASED-CSE-S15-0-19IN	FASED-CSE-S16E-0-21IN	FASED-CSE-S17-0-28IN	FASED-CSE-S18-0-25IN
Sample Date	01/24/00	01/24/00	01/24/00	01/25/00	01/25/00	01/25/00	01/25/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	120 U	2000 U	---	1700 U	660	270 U	1600 U
Dichlorobiphenyl	24 U	400 U	---	330 U	66 U	53 U	320 U
Heptachlorobiphenyl	100	1200 U	---	1000 U	160 J	160 U	980 U
Hexachlorobiphenyl	300	820 U	---	670 U	2000	110 U	660 U
Monochlorobiphenyl	24 U	400 U	---	330 U	66 U	53 U	320 U
Nonachlorobiphenyl	120 U	2000 U	---	1700 U	28 J	140 J	1600 U
Octachlorobiphenyl	71 U	1200 U	---	1000 U	200 U	160 U	980 U
Pentachlorobiphenyl	50 U	820 U	---	670 U	4300	48 J	660 U
Tetrachlorobiphenyl	50 U	820 U	---	670 U	1500	110 U	660 U
Trichlorobiphenyl	24 U	400 U	---	330 U	110	53 U	320 U
Total PCBs	400	---	ND	ND	8758	188	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSE-S19E-0-28IN	FASED-CSE-S19E-0-28INFD	FASED-CSE-S20E-0-33IN	FASED-CSE-S21-0-28IN	FASED-CSE-S22E-0-26IN	FASED-CSE-S23-0-23IN	FASED-CSE-S24W-0-27IN
Sample Date	01/25/00	01/25/00	01/25/00	01/26/00	01/26/00	01/26/00	01/26/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	26 U	14 J	24 U	57	20 J	3600 U	58
Dichlorobiphenyl	5.2 U	5.1 U	4.8 U	5.9 U	4.9 U	720 U	5.1 J
Heptachlorobiphenyl	16 U	15 U	15 U	28	15 U	2200 U	73
Hexachlorobiphenyl	10 U	17	9.8 U	220	58	1400 U	340
Monochlorobiphenyl	5.2 U	5.1 U	4.8 U	5.9 U	4.9 U	720 U	5.4 U
Nonachlorobiphenyl	26 U	14 J	24 U	33	25 U	3600 U	26 J
Octachlorobiphenyl	16 U	15 U	15 U	18 U	15 U	2200 U	20
Pentachlorobiphenyl	10 U	26	9.8 U	360	92	1400 U	730
Tetrachlorobiphenyl	10 U	10 U	9.8 U	96	15	1400 U	400
Trichlorobiphenyl	5.2 U	5.1 U	4.8 U	6.3	4.9 U	720 U	50
Total PCBs	ND	71	ND	800.3	185	ND	1702.1

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSE-S25W-0-29IN	FASED-CSE-S26E-0-12IN	FASED-CSE-S2W-0-19IN	FASED-CSE-S3-0-13IN	FASED-CSE-S4E-0-17IN	FASED-CSE-S5E-0-24IN	FASED-CSE-S6W-0-35IN
Sample Date	01/26/00	01/27/00	01/19/00	01/20/00	01/20/00	01/20/00	01/20/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	24 U	22 U	500 U	120 U	110 U	1600 U	89 J
Dichlorobiphenyl	4.6 U	4.4 U	98 U	24 U	22 U	320 U	20 J
Heptachlorobiphenyl	14 U	13 U	300 U	74 U	68 U	960 U	71 U
Hexachlorobiphenyl	19	4.2 J	200 U	49 U	45 U	640 U	400
Monochlorobiphenyl	4.6 U	4.4 U	98 U	24 U	22 U	320 U	24
Nonachlorobiphenyl	13 J	22 U	500 U	56 J	110 U	1600 U	120 U
Octachlorobiphenyl	14 U	13 U	300 U	74 U	68 U	960 U	71 U
Pentachlorobiphenyl	20	3.8 J	200 U	49 U	45 U	640 U	680
Tetrachlorobiphenyl	9.4 U	8.9 U	200 U	49 U	45 U	640 U	250
Trichlorobiphenyl	4.6 U	4.4 U	98 U	24 U	22 U	320 U	24 U
Total PCBs	52	8	ND	56	ND	ND	1463

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

	Sample ID	FASED-CSE-S6W-0-35INFD	FASED-CSE-S7W-0-13IN	FASED-CSE-S8-0-32IN	FASED-CSE-S9-0-31IN	FASED-CSF-S10-0-9IN	FASED-CSF-S11W-0-10IN	FASED-CSF-S12-0-15IN
	Sample Date	01/20/00	01/20/00	01/21/00	01/21/00	01/12/00	01/12/00	01/12/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound								
Decachlorobiphenyl		210	790 U	240 U	310 U	25 U	29 U	28 U
Dichlorobiphenyl		43	160 U	48 U	62 U	4.9 U	5.7 U	5.6 U
Heptachlorobiphenyl		43 J	480 U	90 J	190 U	15 U	17 U	17 U
Hexachlorobiphenyl		570	640	520	230	10 U	12 U	11 U
Monochlorobiphenyl		32	160 U	48 U	62 U	4.9 U	5.7 U	5.6 U
Nonachlorobiphenyl		120 J	490 J	240 U	310 U	25 U	29 U	28 U
Octachlorobiphenyl		75 U	480 U	140 U	190 U	15 U	17 U	17 U
Pentachlorobiphenyl		930	1200	710	500	10 U	12 U	11 U
Tetrachlorobiphenyl		380	320 U	140	130 U	10 U	12 U	11 U
Trichlorobiphenyl		76	160 U	48 U	62 U	4.9 U	5.7 U	5.6 U
Total PCBs		2404	2330	1460	730	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSF-S12-0-15INFD	FASED-CSF-S13W-0-15IN	FASED-CSF-S14W-0-15IN	FASED-CSF-S15W-0-28IN	FASED-CSF-S16-0-23IN	FASED-CSF-S17W-0-16IN	FASED-CSF-S18E-0-14IN
Sample Date	01/12/00	01/12/00	01/12/00	01/13/00	01/13/00	01/13/00	01/13/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	28 U	33 J	57 J	310 U	30 U	160	52
Dichlorobiphenyl	5.5 U	7 UJ	6.7 UJ	61 U	5.9 U	6.1 U	6.2 U
Heptachlorobiphenyl	17 U	21 UJ	13 J	180 U	18 U	15 J	19 U
Hexachlorobiphenyl	11 U	14 UJ	14 UJ	120 U	12 U	12 U	13 U
Monochlorobiphenyl	5.5 U	7 UJ	6.7 UJ	61 U	5.9 U	6.1 U	6.2 U
Nonachlorobiphenyl	28 U	35 UJ	24 J	310 U	30 U	24 J	21 J
Octachlorobiphenyl	17 U	21 UJ	20 UJ	180 U	18 U	12 J	19 U
Pentachlorobiphenyl	11 U	160 J	250 J	64 J	13	220	170
Tetrachlorobiphenyl	11 U	48 J	93 J	120 U	12 U	44	18
Trichlorobiphenyl	5.5 U	7 UJ	6.7 UJ	61 U	5.9 U	6.1 U	6.2 U
Total PCBs	ND	241	437	64	13	475	261

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSF-S19-0-13IN	FASED-CSF-S1E-0-8IN	FASED-CSF-S2-0-7IN	FASED-CSF-S20-0-12IN	FASED-CSF-S21-0-13IN	FASED-CSF-S21-0-13INFD	FASED-CSF-S22E-0-20IN
Sample Date	01/17/00	01/11/00	01/11/00	01/17/00	01/17/00	01/17/00	01/17/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	85 J	25 U	450 U	50	96	150 J	76
Dichlorobiphenyl	6.6 UJ	4.9 U	89 U	5.6 U	5.9 U	6.7 UJ	5.7 U
Heptachlorobiphenyl	51 J	15 U	270 U	13 J	15 J	31 J	49
Hexachlorobiphenyl	13 UJ	10 U	180 U	11 U	12 U	14 UJ	12 U
Monochlorobiphenyl	6.6 UJ	4.9 U	89 U	5.6 U	5.9 U	6.7 UJ	5.7 U
Nonachlorobiphenyl	32 J	25 U	250 J	28 U	37	50 J	28 J
Octachlorobiphenyl	6.6 J	15 U	270 U	17 U	18 U	14 J	5.8 J
Pentachlorobiphenyl	720 J	10 U	140 J	300	310	420 J	680
Tetrachlorobiphenyl	340 J	10 U	180 U	93	65	110 J	250
Trichlorobiphenyl	8.3 J	4.9 U	89 U	5.6 U	5.9 U	6.7 UJ	6.4
Total PCBs	1242.9	ND	390	456	523	775	1095.2

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

	Sample ID	FASED-CSF-S23-0-15IN	FASED-CSF-S24W-0-13IN	FASED-CSF-S25E-0-10IN	FASED-CSF-S26W-0-13IN	FASED-CSF-S27E-0-16IN	FASED-CSF-S28-0-10IN	FASED-CSF-S29W-0-10IN
	Sample Date	01/17/00	01/17/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound								
Decachlorobiphenyl		93 J	32 J	190 J	75	98	460 J	24 UJ
Dichlorobiphenyl		6.3 UJ	6.5 U	7.2 UJ	5.4 U	6 U	61 UJ	4.8 UJ
Heptachlorobiphenyl		62 J	20 U	50 J	40	110	260 J	15 UJ
Hexachlorobiphenyl		13 UJ	13 U	19 J	11 U	12 U	120 UJ	9.8 UJ
Monochlorobiphenyl		6.3 UJ	6.5 U	7.2 UJ	5.4 U	6 U	61 UJ	4.8 UJ
Nonachlorobiphenyl		35 J	33 U	67 J	26 J	33	270 J	24 UJ
Octachlorobiphenyl		21 J	20 U	20 J	11 J	27	180 UJ	15 UJ
Pentachlorobiphenyl		770 J	160	550 J	330	1100	3700 J	9.8 UJ
Tetrachlorobiphenyl		400 J	13 U	150 J	91	420	1600 J	9.8 UJ
Trichlorobiphenyl		16 J	6.5 U	7.2 UJ	5.4 U	17	61 UJ	4.8 UJ
Total PCBs		1397	192	1046	573	1805	6290	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSF-S30N-0-8IN	FASED-CSF-S31N-0-13IN	FASED-CSF-S32S-0-11IN	FASED-CSF-S32S-0-11INFD	FASED-CSF-S33-0-13IN	FASED-CSF-S34S-0-14IN	FASED-CSF-S35S-0-21IN
Sample Date	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	02/02/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	15 J	560 UJ	130 U	250 U	24 J	120 U	120 U
Dichlorobiphenyl	5.2 UJ	110 UJ	26 U	50 U	6.1 U	24 U	23 U
Heptachlorobiphenyl	16 UJ	330 UJ	78 U	150 U	14 J	74 U	69 U
Hexachlorobiphenyl	10 UJ	220 UJ	52 U	100 U	6.4 J	49 U	46 U
Monochlorobiphenyl	5.2 UJ	110 UJ	26 U	50 U	6.1 U	24 U	23 U
Nonachlorobiphenyl	20 J	560 UJ	130 U	250 U	31 U	120 U	120 U
Octachlorobiphenyl	16 UJ	330 UJ	78 U	150 U	18 U	74 U	69 U
Pentachlorobiphenyl	10 UJ	220 UJ	87	100 U	78	49 U	46 U
Tetrachlorobiphenyl	10 UJ	220 UJ	52 U	100 U	9.3 J	49 U	46 U
Trichlorobiphenyl	5.2 UJ	110 UJ	26 U	50 U	6.1 U	24 U	23 U
Total PCBs	35	ND	87	ND	131.7	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Compound	Sample ID	FASED-CSF-S36N-0-12IN	FASED-CSF-S36N-0-12INFD	FASED-CSF-S37N-0-13IN	FASED-CSF-S38S-0-14IN	FASED-CSF-S39S-0-26IN	FASED-CSF-S3E-0-6IN	FASED-CSF-S4-0-7IN
	Sample Date	01/18/00	01/18/00	01/18/00	01/19/00	01/19/00	01/11/00	01/11/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Decachlorobiphenyl		25	250 U	50 U	15 J	60	22 U	22 U
Dichlorobiphenyl		4.9 U	48 U	9.8 U	4.6 U	6.1 U	4.4 U	4.4 U
Heptachlorobiphenyl		40	150 U	30 U	8.1 J	20	14 U	13 U
Hexachlorobiphenyl		10 U	98 U	13 J	9.3 U	12 U	9 U	8.9 U
Monochlorobiphenyl		4.9 U	48 U	9.8 U	4.6 U	6.1 UJ	4.4 U	4.4 U
Nonachlorobiphenyl		25 U	250 U	50 U	23 U	22 J	22 U	22 U
Octachlorobiphenyl		23	150 U	30 U	14 U	18 UJ	14 U	13 U
Pentachlorobiphenyl		170	98 U	20	140	340 J	9 U	8.9 U
Tetrachlorobiphenyl		39	98 U	20 U	100	120 J	9 U	8.9 U
Trichlorobiphenyl		4.9 U	48 U	9.8 U	7.4	6.1 U	4.4 U	4.4 U
Total PCBs		297	ND	33	270.5	562	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Total Petroleum Hydrocarbons

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Compound	Sample ID	FASED-CSF-S40-0-20IN	FASED-CSF-S5W-0-10IN	FASED-CSF-S6E-0-10IN	FASED-CSF-S7E-0-11IN	FASED-CSF-S8-0-15IN	FASED-CSF-S9-0-11IN
	Sample Date	01/19/00	01/11/00	01/11/00	01/11/00	01/12/00	01/12/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Decachlorobiphenyl		46 UJ	24 U	24 U	23 U	24 U	29 U
Dichlorobiphenyl		9.2 UJ	4.8 U	4.7 U	4.5 U	4.8 U	5.7 U
Heptachlorobiphenyl		28 UJ	14 U	14 U	14 U	15 U	17 U
Hexachlorobiphenyl		19 UJ	9.7 U	9.6 U	9.2 U	9.8 U	12 U
Monochlorobiphenyl		9.2 UJ	4.8 U	4.7 U	4.5 U	4.8 U	5.7 U
Nonachlorobiphenyl		46 UJ	10 J	24 U	23 U	24 U	29 U
Octachlorobiphenyl		28 UJ	14 U	14 U	14 U	15 U	17 U
Pentachlorobiphenyl		23 J	9.7 U	9.6 U	9.2 U	9.8 U	12 U
Tetrachlorobiphenyl		19 UJ	9.7 U	9.6 U	9.2 U	9.8 U	12 U
Trichlorobiphenyl		9.2 UJ	4.8 U	4.7 U	4.5 U	4.8 U	5.7 U
Total PCBs		23	10	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSB-S3-0-26IN	FASED-CSB-S4W-0-23IN	FASED-CSB-S5-0-22IN	FASED-CSB-S6-0-20IN	FASED-CSB-S7-0-18IN	FASED-CSB-S8E-0-22IN	FASED-CSB-S9W-0-9IN
	Sample Date	02/01/00	02/01/00	02/01/00	02/02/00	02/02/00	02/02/00	02/02/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		700	800	2100	2500	67	460	5200
Hydrocarbons as GRO		8.8	0.37	0.44	3.9	3.7	0.34	1.9

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

Sample ID	FASED-CSC-S1-0-13IN	FASED-CSC-S10-0-28IN	FASED-CSC-S11-0-25IN	FASED-CSC-S11-0-25INFD	FASED-CSC-S12E-0-18IN	FASED-CSC-S2-0-28IN	FASED-CSC-S2-0-28INFD
Sample Date	01/31/00	02/01/00	02/01/00	02/01/00	02/01/00	01/31/00	01/31/00
Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Hydrocarbons as DRO	540	2400	2600	5200	930	800	1000
Hydrocarbons as GRO	0.34 U	0.52	8.3	9.8	2.1	4.1	0.51

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSC-S3-0-20IN	FASED-CSC-S4-0-22IN	FASED-CSC-S5W-0-26IN	FASED-CSC-S6W-0-26IN	FASED-CSC-S7-0-29IN	FASED-CSC-S8-0-16IN	FASED-CSC-S9-0-27IN
	Sample Date	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	02/01/00	02/01/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		1200	1100	880	160	430	2500	5000
Hydrocarbons as GRO		1.4	2.3	3	0.15	6.3	2	9.6

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSC-S9-0-27INFD	FASED-CSD-S1W-0-24IN	FASED-CSD-S2-0-15IN	FASED-CSD-S3-0-21IN	FASED-CSD-S4-0-23IN	FASED-CSD-S5-0-10IN	FASED-CSD-S6E-0-13IN
	Sample Date	02/01/00	02/02/00	01/27/00	01/27/00	01/27/00	01/31/00	01/28/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		930	74	220	280	920	53	30
Hydrocarbons as GRO		6.3	0.41 U	0.36 U	0.4	0.66 U	0.34 U	0.42 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSD-S7-0-33IN	FASED-CSD-S8-0-29IN	FASED-CSD-S9W-0-23IN	FASED-CSE-S1-0-12IN	FASED-CSE-S10W-0-27IN	FASED-CSE-S11W-0-22IN	FASED-CSE-S12-0-21IN
	Sample Date	01/31/00	01/31/00	01/31/00	01/19/00	01/24/00	01/24/00	01/24/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		1200	750	61	98	870	320	410
Hydrocarbons as GRO		0.52	0.84	0.64	0.5 U	2.5	0.16	0.43 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

Sample ID	FASED-CSE-S13E-0-21IN	FASED-CSE-S14W-0-31IN	FASED-CSE-S15-0-19IN	FASED-CSE-S16E-0-21IN	FASED-CSE-S17-0-28IN	FASED-CSE-S18-0-25IN	FASED-CSE-S19E-0-28IN
Sample Date	01/24/00	01/24/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00
Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Hydrocarbons as DRO	56	830	860	290	110	290	5.2 U
Hydrocarbons as GRO	0.36 U	0.36	0.32	0.27	0.27	0.3	0.39 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSE-S19E-0-28INFD	FASED-CSE-S20E-0-33IN	FASED-CSE-S21-0-28IN	FASED-CSE-S22E-0-26IN	FASED-CSE-S23-0-23IN	FASED-CSE-S24W-0-27IN	FASED-CSE-S25W-0-29IN
	Sample Date	01/25/00	01/25/00	01/26/00	01/26/00	01/26/00	01/26/00	01/26/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		41	4.8 U	310	15	3600	82	11
Hydrocarbons as GRO		0.31	0.27	0.45 U	0.37 U	0.26	0.18	0.35 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

Sample ID	FASED-CSE-S26E-0-12IN	FASED-CSE-S2W-0-19IN	FASED-CSE-S3-0-13IN	FASED-CSE-S4E-0-17IN	FASED-CSE-S5E-0-24IN	FASED-CSE-S6W-0-35IN	FASED-CSE-S6W-0-35INFD
Sample Date	01/27/00	01/19/00	01/20/00	01/20/00	01/20/00	01/20/00	01/20/00
Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Hydrocarbons as DRO	420	50	460	1100	2100	1700	1100
Hydrocarbons as GRO	0.22	0.43 U	0.42 U	0.38 U	5.6	8.4	4.9

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSE-S7W-0-13IN	FASED-CSE-S8-0-32IN	FASED-CSE-S9-0-31IN	FASED-CSF-S10-0-9IN	FASED-CSF-S11W-0-10IN	FASED-CSF-S12-0-15IN	FASED-CSF-S12-0-15INFD
	Sample Date	01/20/00	01/21/00	01/21/00	01/12/00	01/12/00	01/12/00	01/12/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		3200	550	930	17	11	16	17
Hydrocarbons as GRO		3.9	6	1.4	0.46 U	0.63 U	0.53 U	0.6 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

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Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSF-S13W-0-15IN	FASED-CSF-S14W-0-15IN	FASED-CSF-S15W-0-28IN	FASED-CSF-S16-0-23IN	FASED-CSF-S17W-0-16IN	FASED-CSF-S18E-0-14IN	FASED-CSF-S19-0-13IN
	Sample Date	01/12/00	01/12/00	01/13/00	01/13/00	01/13/00	01/13/00	01/17/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		77	91	31	18	100	110	74
Hydrocarbons as GRO		0.8 U	0.69 U	0.68 U	0.74 U	0.77 U	0.79 U	0.15

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSF-S1E-0-8IN	FASED-CSF-S2-0-7IN	FASED-CSF-S20-0-12IN	FASED-CSF-S21-0-13IN	FASED-CSF-S21-0-13INFD	FASED-CSF-S22E-0-20IN	FASED-CSF-S23-0-15IN
	Sample Date	01/11/00	01/11/00	01/17/00	01/17/00	01/17/00	01/17/00	01/17/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		7.4	920	50	87	25	50	49
Hydrocarbons as GRO		0.26	31	0.5 U	0.57 U	0.77 U	0.18	0.14

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSF-S24W-0-13IN	FASED-CSF-S25E-0-10IN	FASED-CSF-S26W-0-13IN	FASED-CSF-S27E-0-16IN	FASED-CSF-S28-0-10IN	FASED-CSF-S29W-0-10IN	FASED-CSF-S30N-0-8IN
	Sample Date	01/17/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		47	71	75	44	220	21	20
Hydrocarbons as GRO		0.14	0.13	0.52 U	0.53 U	0.17	0.38 U	0.1

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSF-S31N-0-13IN	FASED-CSF-S32S-0-11IN	FASED-CSF-S32S-0-11INFD	FASED-CSF-S33-0-13IN	FASED-CSF-S34S-0-14IN	FASED-CSF-S35S-0-21IN	FASED-CSF-S36N-0-12IN
	Sample Date	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	02/02/00	01/18/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		49	75	190	440	40	170	120
Hydrocarbons as GRO		0.38	0.43	0.11	0.26	0.17	0.35 U	0.15

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

Sample ID	FASED-CSF-S36N-0-12INFD	FASED-CSF-S37N-0-13IN	FASED-CSF-S38S-0-14IN	FASED-CSF-S39S-0-26IN	FASED-CSF-S3E-0-6IN	FASED-CSF-S4-0-7IN	FASED-CSF-S40-0-20IN
Sample Date	01/18/00	01/18/00	01/19/00	01/19/00	01/11/00	01/11/00	01/19/00
Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Hydrocarbons as DRO	150	160	44	300	3.8	2.7	170
Hydrocarbons as GRO	0.1	0.44 U	0.33 U	0.55 U	0.3 U	0.56 U	0.35 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSF-S5W-0-10IN	FASED-CSF-S6E-0-10IN	FASED-CSF-S7E-0-11IN	FASED-CSF-S8-0-15IN	FASED-CSF-S9-0-11IN
	Sample Date	01/11/00	01/11/00	01/11/00	01/12/00	01/12/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound						
Hydrocarbons as DRO		3	3.4	5.7	8.6	24
Hydrocarbons as GRO		0.38 U	0.36 U	0.34 U	0.36 U	0.63 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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FXP File: D:\25501\TABLEPRS.FXP

File Number 10040 25501

Metals

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-BPL-S1-0-10IN	FASED-BPL-S1-0-10INEB	FASED-BPL-S2-0-10IN	FASED-BPL-S3-0-8IN	FASED-BPL-S4-0-10IN	FASED-BPL-S5-0-9IN	FASED-BPL-S6-0-11IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00
	Units	mg/kg dw	mg/l	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		9.9	0.02 U	15	14	13	13	15
Zinc		380	0.02 U	230	300	360	280	220

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-BPL-S6-0-11INFD	FASED-BPL-S7-0-9IN	FASED-BPL-S8-0-9IN	FASED-CSB-S10W-0-9IN	FASED-CSB-S10W-0-9INFD	FASED-CSB-S1W-0-25IN	FASED-CSB-S2-0-23IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/02/00	02/02/00	02/01/00	02/01/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		19	18	21	1800	670	2200	19000
Zinc		450	410	490	800	260	3600	25000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSB-S3-0-26IN	FASED-CSB-S4W-0-23IN	FASED-CSB-S5-0-22IN	FASED-CSB-S6-0-20IN	FASED-CSB-S7-0-18IN	FASED-CSB-S8E-0-22IN	FASED-CSB-S9W-0-9IN
	Sample Date	02/01/00	02/01/00	02/01/00	02/02/00	02/02/00	02/02/00	02/02/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		750	19000	4500	4900	480	6700	2000
Zinc		11000	21000	12000	20000	3100	12000	26000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

Sample ID	FASED-CSC-S1-0-13IN	FASED-CSC-S10-0-28IN	FASED-CSC-S11-0-25IN	FASED-CSC-S11-0-25INFD	FASED-CSC-S12E-0-18IN	FASED-CSC-S2-0-28IN	FASED-CSC-S2-0-28INFD
Sample Date	01/31/00	02/01/00	02/01/00	02/01/00	02/01/00	01/31/00	01/31/00
Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Copper	2200	640	13000	6900	16000	4500	6400
Zinc	2300	17000	37000	20000	4700	11000	13000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSC-S3-0-20IN	FASED-CSC-S4-0-22IN	FASED-CSC-S5W-0-26IN	FASED-CSC-S6W-0-26IN	FASED-CSC-S7-0-29IN	FASED-CSC-S8-0-16IN	FASED-CSC-S9-0-27IN
	Sample Date	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	02/01/00	02/01/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		4200	5600	9500	2600	1400	14000	31000
Zinc		10000	11000	13000	3400	3100	33000	76000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSC-S9-0-27INFD	FASED-CSD-S1W-0-24IN	FASED-CSD-S2-0-15IN	FASED-CSD-S3-0-21IN	FASED-CSD-S4-0-23IN	FASED-CSD-S5-0-10IN	FASED-CSD-S6E-0-13IN
	Sample Date	02/01/00	02/02/00	01/27/00	01/27/00	01/27/00	01/31/00	01/28/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		3500	840	1500	1100	18000	220	1100
Zinc		6700	4500	1600	2000	19000	360	3300

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSD-S7-0-33IN	FASED-CSD-S8-0-29IN	FASED-CSD-S9W-0-23IN	FASED-CSE-S1-0-12IN	FASED-CSE-S10W-0-27IN	FASED-CSE-S11W-0-22IN	FASED-CSE-S12-0-21IN
	Sample Date	01/31/00	01/31/00	01/31/00	01/19/00	01/24/00	01/24/00	01/24/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		1400	770	3800	44	970	150	480
Zinc		13000	16000	6100	660	4200	1000	1400

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSE-S13E-0-21IN	FASED-CSE-S14W-0-31IN	FASED-CSE-S15-0-19IN	FASED-CSE-S16E-0-21IN	FASED-CSE-S17-0-28IN	FASED-CSE-S18-0-25IN	FASED-CSE-S19E-0-28IN
	Sample Date	01/24/00	01/24/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		120	13000	11000	3600	460	2200	1600
Zinc		1100	32000	150000	6600	3200	6800	3000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSE-S19E-0-28INFD	FASED-CSE-S20E-0-33IN	FASED-CSE-S21-0-28IN	FASED-CSE-S22E-0-26IN	FASED-CSE-S23-0-23IN	FASED-CSE-S24W-0-27IN	FASED-CSE-S25W-0-29IN
	Sample Date	01/25/00	01/25/00	01/26/00	01/26/00	01/26/00	01/26/00	01/26/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		440	24	330	42	2900	810	690
Zinc		3100	2900	8600	2800	5200	2900	3100

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSE-S26E-0-12IN	FASED-CSE-S2W-0-19IN	FASED-CSE-S3-0-13IN	FASED-CSE-S4E-0-17IN	FASED-CSE-S5E-0-24IN	FASED-CSE-S6W-0-35IN	FASED-CSE-S6W-0-35INFD
	Sample Date	01/27/00	01/19/00	01/20/00	01/20/00	01/20/00	01/20/00	01/20/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		57	34	65	45	3900	440	6500
Zinc		810	490	590	500	8500	1900	11000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSE-S7W-0-13IN	FASED-CSE-S8-0-32IN	FASED-CSE-S9-0-31IN	FASED-CSF-S10-0-9IN	FASED-CSF-S11W-0-10IN	FASED-CSF-S12-0-15IN	FASED-CSF-S12-0-15INFD
	Sample Date	01/20/00	01/21/00	01/21/00	01/12/00	01/12/00	01/12/00	01/12/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		35000	270	1200	33	88	80	72
Zinc		55000	4200	3900	250	690	680	690

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

Compound	Sample ID	FASED-CSF-S13W-0-15IN	FASED-CSF-S14W-0-15IN	FASED-CSF-S15W-0-28IN	FASED-CSF-S16-0-23IN	FASED-CSF-S17W-0-16IN	FASED-CSF-S18E-0-14IN	FASED-CSF-S19-0-13IN
	Sample Date	01/12/00	01/12/00	01/13/00	01/13/00	01/13/00	01/13/00	01/17/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Copper		370	460	430	33	1400	1700	5400
Zinc		2100	3200	7700	3900	11000	9100	10000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSF-S1E-0-8IN	FASED-CSF-S2-0-7IN	FASED-CSF-S20-0-12IN	FASED-CSF-S21-0-13IN	FASED-CSF-S21-0-13INFD	FASED-CSF-S22E-0-20IN	FASED-CSF-S23-0-15IN
	Sample Date	01/11/00	01/11/00	01/17/00	01/17/00	01/17/00	01/17/00	01/17/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		17	12	710	920	1200	420	1400
Zinc		88	53	2300	4500	4400	4800	5400

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

Sample ID	FASED-CSF-S24W-0-13IN	FASED-CSF-S25E-0-10IN	FASED-CSF-S26W-0-13IN	FASED-CSF-S27E-0-16IN	FASED-CSF-S28-0-10IN	FASED-CSF-S29W-0-10IN	FASED-CSF-S30N-0-8IN
Sample Date	01/17/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00
Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Copper	530	2500	930	1900	1200	26	54
Zinc	3200	6200	4700	6200	3200	510	850

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSF-S31N-0-13IN	FASED-CSF-S32S-0-11IN	FASED-CSF-S32S-0-11INFD	FASED-CSF-S33-0-13IN	FASED-CSF-S34S-0-14IN	FASED-CSF-S35S-0-21IN	FASED-CSF-S36N-0-12IN
	Sample Date	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	02/02/00	01/18/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		130	81	59	200	92	44	78
Zinc		2400	1600	1200	1700	3900	540	1000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSF-S36N-0-12INFD	FASED-CSF-S37N-0-13IN	FASED-CSF-S38S-0-14IN	FASED-CSF-S39S-0-26IN	FASED-CSF-S3E-0-6IN	FASED-CSF-S4-0-7IN	FASED-CSF-S40-0-20IN
	Sample Date	01/18/00	01/18/00	01/19/00	01/19/00	01/11/00	01/11/00	01/19/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		68	43	89	1100	17	10	39
Zinc		720	920	860	5300	63	50	690

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

Compound	Sample ID	FASED-CSF-S5W-0-10IN	FASED-CSF-S6E-0-10IN	FASED-CSF-S7E-0-11IN	FASED-CSF-S8-0-15IN	FASED-CSF-S9-0-11IN
	Sample Date	01/11/00	01/11/00	01/11/00	01/12/00	01/12/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Copper		13	17	21	34	78
Zinc		62	85	84	160	400

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-BPL-S1-0-10IN	FASED-BPL-S1-0-10INEB	FASED-BPL-S2-0-10IN	FASED-BPL-S3-0-8IN	FASED-BPL-S4-0-10IN	FASED-BPL-S5-0-9IN	FASED-BPL-S6-0-11IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00
	Units	mg/kg dw	mg/l	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		23	0.1 U	10	4.6	4	6.6	8.1
Hydrocarbons as GRO		0.28 U	0.05 U	0.33 U	0.37 U	0.33 U	0.31 U	0.33 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-BPL-S6-0-11INFD	FASED-BPL-S7-0-9IN	FASED-BPL-S8-0-9IN	FASED-CSB-S10W-0-9IN	FASED-CSB-S10W-0-9INFD	FASED-CSB-S1W-0-25IN	FASED-CSB-S2-0-23IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/02/00	02/02/00	02/01/00	02/01/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		6	4.3	5.5	370	150	2400	2000
Hydrocarbons as GRO		0.36 U	0.33 U	0.36 U	0.3 U	0.29 U	0.69	9.9

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

Table 2

Table 2 - 2

Broad-Scan Sediment Sample Analytical Data

Volatile Organic Compounds

O'BRIEN & GERE ENGINEERS, INC.

Table 5-1
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8260B Volatile Organic Compound Data

Sample ID	BPL-ESED-S1-0.2FT	BPL-ESED-S1-0.2FTFD	BPL-ESED-S2-0.2FT	BPL-ESED-S3-0.2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/l
Compound							
1,1,1-Trichloroethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
1,1,2,2-Tetrachloroethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
1,1,2-Trichloroethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
1,1-Dichloroethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
1,1-Dichloroethene	24 UJ	19 UJ	23 UJ	27 UJ	10 U	7.9 U	5 U
1,2-Dichloroethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
1,2-Dichloropropane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
2-Butanone (MEK)	130 UJ	100 UJ	130 UJ	140 UJ	57 U	43 U	25 U
2-Hexanone	130 UJ	100 UJ	130 UJ	140 UJ	57 U	43 U	25 U
4-Methyl-2-pentanone (MIBK)	130 UJ	100 UJ	130 UJ	140 UJ	57 U	43 U	25 U
Acetone	260 UJ	210 UJ	250 UJ	290 UJ	41 J	86 U	50 U
Benzene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	1.2 U
Bromodichloromethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Bromoform	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Bromomethane	51 UJ	42 UJ	51 UJ	58 UJ	23 U	17 U	9.8 U
Carbon disulfide	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Carbon tetrachloride	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Chlorobenzene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Chloroethane	51 UJ	42 UJ	51 UJ	58 UJ	23 U	17 U	10 U
Chloroform	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Chloromethane	51 UJ	42 UJ	51 UJ	58 UJ	23 U	17 U	10 U
Cis/Trans-1,2-Dichloroethene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Dibromochloromethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Ethylbenzene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Methylene chloride (Dichloromethane)	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	1.6 J
Styrene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Tetrachloroethene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Toluene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Trichloroethene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	2.7 U
Vinyl chloride	51 UJ	42 UJ	51 UJ	58 UJ	23 U	17 U	10 U
Xylenes, Total	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
cis-1,3-Dichloropropene	20 UJ	17 UJ	20 UJ	23 UJ	9.2 U	6.8 U	1 U
trans-1,3-Dichloropropene	20 UJ	17 UJ	20 UJ	23 UJ	9.2 U	6.8 U	5 U
Total VOCs	ND	ND	ND	ND	41	ND	1.6

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-1
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8260B Volatile Organic Compound Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0.2FTEB	SED-CSB-S1-0.2FT	SED-CSB-S1-0.2FTFD	SED-CSB-S2-0.2FT	SED-CSB-S3-0.2FT	SED-CSC-S1-0.2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
1,1,1-Trichloroethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
1,1,2,2-Tetrachloroethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
1,1,2-Trichloroethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
1,1-Dichloroethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
1,1-Dichloroethene	8.9 U	5.0 U	24 UJ	18 UJ	18 UJ	35 UJ	25 UJ
1,2-Dichloroethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
1,2-Dichloropropane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
2-Butanone (MEK)	48 U	25 U	130 UJ	99 UJ	98 UJ	190 UJ	31 J
2-Hexanone	48 U	25 U	130 UJ	99 UJ	21 J	190 UJ	130 UJ
4-Methyl-2-pentanone (MIBK)	48 U	25 U	130 UJ	99 UJ	98 UJ	190 UJ	130 UJ
Acetone	47 J	50 U	260 UJ	200 UJ	250 UJ	380 UJ	96 J
Benzene	9.6 U	1.2 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Bromodichloromethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Bromoform	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Bromomethane	19 U	9.8 U	52 UJ	40 UJ	39 UJ	76 UJ	54 UJ
Carbon disulfide	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Carbon tetrachloride	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Chlorobenzene	9.6 U	5.0 U	86 J	17 J	26 J	20 J	27 UJ
Chloroethane	19 U	10 U	52 UJ	40 UJ	39 UJ	76 UJ	54 UJ
Chloroform	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Chloromethane	19 U	10 U	52 UJ	40 UJ	39 UJ	76 UJ	54 UJ
Cis/Trans-1,2-Dichloroethene	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Dibromochloromethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Ethylbenzene	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Methylene chloride (Dichloromethane)	9.6 U	0.90 J	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Styrene	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Tetrachloroethene	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Toluene	6.4 J	5.0 U	26 UJ	20 UJ	20 J	38 UJ	27 UJ
Trichloroethene	9.6 U	2.7 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Vinyl chloride	19 U	10 U	52 UJ	40 UJ	39 UJ	76 UJ	54 UJ
Xylenes, Total	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
cis-1,3-Dichloropropene	7.7 U	1.0 U	21 UJ	16 UJ	16 UJ	30 UJ	22 UJ
trans-1,3-Dichloropropene	7.7 U	5.0 U	21 UJ	16 UJ	16 UJ	30 UJ	22 UJ
Total VOCs	53.4	0.9	86	17	67	20	127

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-1
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8260B Volatile Organic Compound Data

Sample ID	SED-CSC-S2-0.2FT	SED-CSC-S3-0.2FT	SED-CSD-S1-0.2FT	SED-CSD-S2-0.2FT	SED-CSD-S3-0.2FT	SED-CSE-S1-0.2FT	SED-CSE-S2-0.2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
1,1,1-Trichloroethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
1,1,2,2-Tetrachloroethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
1,1,2-Trichloroethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
1,1-Dichloroethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
1,1-Dichloroethene	20 UJ	27 UJ	37 UJ	38 UJ	19 UJ	27 UJ	17 UJ
1,2-Dichloroethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
1,2-Dichloropropane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
2-Butanone (MEK)	37 J	28 J	65 J	56 J	30 J	150 UJ	94 UJ
2-Hexanone	110 UJ	140 UJ	200 UJ	200 UJ	100 UJ	150 UJ	94 UJ
4-Methyl-2-pentanone (MIBK)	110 UJ	140 UJ	200 UJ	200 UJ	100 UJ	150 UJ	94 UJ
Acetone	130 J	100 J	190 J	170 J	84 J	430 UJ	190 UJ
Benzene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Bromodichloromethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Bromoform	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Bromomethane	45 UJ	58 UJ	80 UJ	82 UJ	41 UJ	60 UJ	38 UJ
Carbon disulfide	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Carbon tetrachloride	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Chlorobenzene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Chloroethane	45 UJ	58 UJ	80 UJ	82 UJ	41 UJ	60 UJ	38 UJ
Chloroform	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Chloromethane	45 UJ	58 UJ	80 UJ	82 UJ	41 UJ	60 UJ	38 UJ
Cis/Trans-1,2-Dichloroethene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Dibromochloromethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Ethylbenzene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Methylene chloride (Dichloromethane)	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Styrene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Tetrachloroethene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Toluene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Trichloroethene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Vinyl chloride	45 UJ	58 UJ	80 UJ	82 UJ	41 UJ	60 UJ	38 UJ
Xylenes, Total	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
cis-1,3-Dichloropropene	18 UJ	23 UJ	32 UJ	33 UJ	16 UJ	24 UJ	15 UJ
trans-1,3-Dichloropropene	18 UJ	23 UJ	32 UJ	33 UJ	16 UJ	24 UJ	15 UJ
Total VOCs	167	128	255	226	114	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-1
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8260B Volatile Organic Compound Data

Sample ID	SED-CSE-S3-0.2FT	SED-CSF-S1-0.2FT	SED-CSF-S2-0.2FT	SED-CSF-S3-0.2FT	SED-M-S1-0.2FT	SED-RA1-S1-0.2FT	SED-RA1-S2-0.2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
1,1,1-Trichloroethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
1,1,2,2-Tetrachloroethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
1,1,2-Trichloroethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
1,1-Dichloroethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
1,1-Dichloroethene	23 UJ	16 UJ	38 UJ	24 UJ	38 UJ	8.7 U	17 UJ
1,2-Dichloroethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
1,2-Dichloropropane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
2-Butanone (MEK)	520 J	85 UJ	200 UJ	130 UJ	270 UJ	47 U	40 J
2-Hexanone	130 UJ	85 UJ	200 UJ	130 UJ	210 UJ	47 U	94 UJ
4-Methyl-2-pentanone (MIBK)	130 UJ	85 UJ	200 UJ	130 UJ	210 UJ	47 U	94 UJ
Acetone	1200 J	200 UJ	410 UJ	260 UJ	920 UJ	95 U	160 J
Benzene	25 UJ	17 UJ	41 UJ	26 UJ	17 J	9.5 U	19 UJ
Bromodichloromethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Bromoform	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Bromomethane	50 UJ	34 UJ	82 UJ	51 UJ	83 UJ	19 U	38 UJ
Carbon disulfide	25 UJ	17 UJ	41 UJ	26 UJ	49 J	9.5 U	19 UJ
Carbon tetrachloride	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Chlorobenzene	25 UJ	17 UJ	41 UJ	26 UJ	100 J	9.5 U	19 UJ
Chloroethane	50 UJ	34 UJ	82 UJ	51 UJ	83 UJ	19 U	38 UJ
Chloroform	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Chloromethane	50 UJ	34 UJ	82 UJ	51 UJ	83 UJ	19 U	38 UJ
Cis/Trans-1,2-Dichloroethene	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Dibromochloromethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Ethylbenzene	25 UJ	17 UJ	41 UJ	11 J	42 UJ	9.5 U	19 UJ
Methylene chloride (Dichloromethane)	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Styrene	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Tetrachloroethene	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Toluene	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Trichloroethene	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Vinyl chloride	50 UJ	34 UJ	82 UJ	51 UJ	83 UJ	19 U	38 UJ
Xylenes, Total	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
cis-1,3-Dichloropropene	20 UJ	14 UJ	33 UJ	20 UJ	33 UJ	7.6 U	15 UJ
trans-1,3-Dichloropropene	20 UJ	14 UJ	33 UJ	20 UJ	33 UJ	7.6 U	15 UJ
Total VOCs	1720	ND	ND	11	166	ND	200

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-1
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8260B Volatile Organic Compound Data

Sample ID	SED-RA2-S1-0.2FT	SED-RA2-S1-0.2FTEB	SED-RA2-S1-0.2FTFD	SED-RA2-S2-0.2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/08/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw
Compound				
1,1,1-Trichloroethane	13 UJ	5 U	13 UJ	11 UJ
1,1,2,2-Tetrachloroethane	13 UJ	5 U	13 UJ	11 UJ
1,1,2-Trichloroethane	13 UJ	5 U	13 UJ	11 UJ
1,1-Dichloroethane	13 UJ	5 U	13 UJ	11 UJ
1,1-Dichloroethene	12 UJ	5 U	12 UJ	10 UJ
1,2-Dichloroethane	13 UJ	5 U	13 UJ	11 UJ
1,2-Dichloropropane	13 UJ	5 U	13 UJ	11 UJ
2-Butanone (MEK)	11 J	25 U	67 UJ	14 J
2-Hexanone	65 UJ	25 U	67 UJ	56 UJ
4-Methyl-2-pentanone (MIBK)	65 UJ	25 U	67 UJ	56 UJ
Acetone	38 J	50 U	130 UJ	52 J
Benzene	13 UJ	1.2 U	13 UJ	11 UJ
Bromodichloromethane	13 UJ	5 U	13 UJ	11 UJ
Bromoform	13 UJ	5 U	13 UJ	11 UJ
Bromomethane	26 UJ	9.8 U	27 UJ	22 UJ
Carbon disulfide	13 UJ	5 U	13 UJ	11 UJ
Carbon tetrachloride	13 UJ	5 U	13 UJ	11 UJ
Chlorobenzene	13 UJ	5 U	13 UJ	11 UJ
Chloroethane	26 UJ	10 U	27 UJ	22 UJ
Chloroform	13 UJ	5 U	13 UJ	11 UJ
Chloromethane	26 UJ	10 U	27 UJ	22 UJ
Cis/Trans-1,2-Dichloroethene	13 UJ	5 U	13 UJ	11 UJ
Dibromochloromethane	13 UJ	5 U	13 UJ	11 UJ
Ethylbenzene	13 UJ	5 U	13 UJ	11 UJ
Methylene chloride (Dichloromethane)	13 UJ	4.7 U	13 UJ	11 UJ
Styrene	13 UJ	5 U	13 UJ	11 UJ
Tetrachloroethene	13 UJ	5 U	13 UJ	11 UJ
Toluene	13 UJ	5 U	13 UJ	11 UJ
Trichloroethene	13 UJ	2.7 U	13 UJ	11 UJ
Vinyl chloride	26 UJ	10 U	27 UJ	22 UJ
Xylenes, Total	13 UJ	5 U	13 UJ	11 UJ
cis-1,3-Dichloropropene	10 UJ	1 U	11 UJ	9.1 UJ
trans-1,3-Dichloropropene	10 UJ	5 U	11 UJ	9.1 UJ
Total VOCs	49	ND	ND	66

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Semivolatile Organic Compounds

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	BPL-ESED-S1-0.2FT	BPL-ESED-S1-0.2FTFD	BPL-ESED-S2-0.2FT	BPL-ESED-S3-0.2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/l
Compound							
1,2,4-Trichlorobenzene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
1,2-Dichlorobenzene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
1,3-Dichlorobenzene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
1,4-Dichlorobenzene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
2,2'-Oxybis(1-Chloropropane)	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
2,4,5-Trichlorophenol	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
2,4,6-Trichlorophenol	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	2.1 U
2,4-Dichlorophenol	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
2,4-Dinitrophenol	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 U	1100 U	14 U
2,4-Dinitrotoluene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
2,6-Dinitrotoluene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
2-Chloronaphthalene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
2-Chlorophenol	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
2-Methylnaphthalene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
2-Methylphenol (o-cresol)	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
2-Nitroaniline	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 U	1100 U	50 U
2-Nitrophenol	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
3,3'-Dichlorobenzidine	910 UJ	910 UJ	960 UJ	910 UJ	480 U	450 U	20 U
3-Methylphenol/4-Methylphenol	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
3-Nitroaniline	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 UJ	1100 U	50 U
4,6-Dinitro-2-methylphenol	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 U	1100 U	13 U
4-Bromophenylphenyl ether	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	1 U
4-Chloro-3-methylphenol	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
4-Chloroaniline	910 UJ	910 UJ	960 UJ	910 UJ	480 U	450 U	20 U
4-Chlorophenylphenyl ether	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
4-Nitroaniline	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 U	1100 U	50 U
4-Nitrophenol	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 U	1100 U	50 U
Acenaphthene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Acenaphthylene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Anthracene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
Benzo(a)anthracene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Benzo(a)pyrene	250 UJ	250 UJ	260 UJ	250 UJ	130 U	120 U	10 U
Benzo(b)fluoranthene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Benzo(g,h,i)perylene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	0.76 J
Benzo(k)fluoranthene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U

NOTES: *U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.*

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	BPL-ESED-S1-0.2FT	BPL-ESED-S1-0.2FTFD	BPL-ESED-S2-0.2FT	BPL-ESED-S3-0.2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/l
Compound							
Butylbenzylphthalate	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
Carbazole	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	3.4 U
Chrysene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
Di-n-butylphthalate	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Di-n-octylphthalate	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Dibenzo(a,h)anthracene	250 UJ	250 UJ	260 UJ	250 UJ	130 UJ	120 U	10 U
Dibenzofuran	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Diethylphthalate	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Dimethylphthalate	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Fluoranthene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Fluorene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	1 U
Hexachlorobenzene	190 UJ	190 UJ	200 UJ	190 UJ	100 U	95 U	10 U
Hexachlorobutadiene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Hexachlorocyclopentadiene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Hexachloroethane	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	1.9 U
Indeno(1,2,3-cd)pyrene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	0.61 J
Isophorone	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
N-Nitroso-di-n-propylamine	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
N-Nitrosodiphenylamine	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	5 U
Naphthalene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
Nitrobenzene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	3.5 U
Pentachlorophenol	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 U	1100 U	5 U
Phenanthrene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
Phenol	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
Pyrene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
bis(2-Chloroethoxy)methane	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
bis(2-Chloroethyl)ether	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
bis(2-Ethylhexyl)phthalate	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	1.8 U
Total Semivolatiles	ND	ND	ND	ND	ND	ND	1.37

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0.2FTEB	SED-CSB-S1-0.2FT	SED-CSB-S1-0.2FTFD	SED-CSB-S2-0.2FT	SED-CSB-S3-0.2FT	SED-CSC-S1-0.2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
1,2,4-Trichlorobenzene	230 U	10 U	2600 UJ	2200 UJ	770 J	3300 UJ	3400 UJ
1,2-Dichlorobenzene	230 U	10 U	370 J	2200 UJ	2600 UJ	3300 UJ	3400 UJ
1,3-Dichlorobenzene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
1,4-Dichlorobenzene	230 U	10 U	1000 J	2200 UJ	520 J	3300 UJ	3400 UJ
2,2'-Oxybis(1-Chloropropane)	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2,4,5-Trichlorophenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2,4,6-Trichlorophenol	230 U	2.1 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2,4-Dichlorophenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2,4-Dinitrophenol	1200 U	14 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
2,4-Dinitrotoluene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2,6-Dinitrotoluene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2-Chloronaphthalene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2-Chlorophenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2-Methylnaphthalene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2-Methylphenol (o-cresol)	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2-Nitroaniline	1200 U	50 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
2-Nitrophenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
3,3'-Dichlorobenzidine	450 U	20 U	5000 UJ	4200 UJ	5000 UJ	6300 UJ	6600 UJ
3-Methylphenol/4-Methylphenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
3-Nitroaniline	1200 U	50 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
4,6-Dinitro-2-methylphenol	1200 U	13 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
4-Bromophenylphenyl ether	230 U	1.0 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
4-Chloro-3-methylphenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
4-Chloroaniline	450 U	20 U	5000 UJ	4200 UJ	830 J	6300 UJ	6600 UJ
4-Chlorophenylphenyl ether	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
4-Nitroaniline	1200 U	50 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
4-Nitrophenol	1200 U	50 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
Acenaphthene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Acenaphthylene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Anthracene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Benzo(a)anthracene	230 U	10 U	960 J	600 J	870 J	680 J	530 J
Benzo(a)pyrene	120 U	10 U	1500 J	770 J	1200 J	730 J	1800 UJ
Benzo(b)fluoranthene	230 U	10 U	1700 J	1100 J	2000 J	1100 J	680 J
Benzo(g,h,i)perylene	230 U	10 U	1600 J	710 J	1600 J	790 J	3400 UJ
Benzo(k)fluoranthene	230 U	10 U	1500 J	920 J	1600 J	920 J	3400 UJ

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0.2FTEB	SED-CSB-S1-0.2FT	SED-CSB-S1-0.2FTFD	SED-CSB-S2-0.2FT	SED-CSB-S3-0.2FT	SED-CSC-S1-0.2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Butylbenzylphthalate	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Carbazole	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Chrysene	230 U	10 U	1600 J	990 J	1800 J	1100 J	640 J
Di-n-butylphthalate	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Di-n-octylphthalate	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Dibenzo(a,h)anthracene	120 U	10 U	1400 UJ	1200 UJ	1400 UJ	1700 UJ	1800 UJ
Dibenzofuran	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Diethylphthalate	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Dimethylphthalate	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Fluoranthene	230 U	10 U	2300 J	1700 J	1800 J	1900 J	780 J
Fluorene	230 U	1.0 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 U
Hexachlorobenzene	96 U	10 U	1000 UJ	900 UJ	1000 UJ	1300 UJ	1400 UJ
Hexachlorobutadiene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Hexachlorocyclopentadiene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Hexachloroethane	230 U	1.9 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Indeno(1,2,3-cd)pyrene	230 U	10 U	1300 J	2200 UJ	1000 J	3300 UJ	3400 UJ
Isophorone	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
N-Nitroso-di-n-propylamine	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
N-Nitrosodiphenylamine	230 U	5.0 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Naphthalene	230 U	10 U	2600 UJ	2200 UJ	380 J	3300 UJ	3400 UJ
Nitrobenzene	230 U	3.5 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Pentachlorophenol	1200 U	5.0 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
Phenanthrene	230 U	10 U	2600 UJ	810 J	930 J	910 J	530 J
Phenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Pyrene	230 U	10 U	3000 J	1800 J	2200 J	2000 J	940 J
bis(2-Chloroethoxy)methane	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
bis(2-Chloroethyl)ether	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
bis(2-Ethylhexyl)phthalate	230 U	1.8 U	3000 J	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Total Semivolatiles	ND	ND	19830	9400	17500	10130	4100

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	SED-CSC-S2-0.2FT	SED-CSC-S3-0.2FT	SED-CSD-S1-0.2FT	SED-CSD-S2-0.2FT	SED-CSD-S3-0.2FT	SED-CSE-S1-0.2FT	SED-CSE-S2-0.2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
1,2,4-Trichlorobenzene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
1,2-Dichlorobenzene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
1,3-Dichlorobenzene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
1,4-Dichlorobenzene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2,2'-Oxybis(1-Chloropropane)	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2,4,5-Trichlorophenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2,4,6-Trichlorophenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2,4-Dichlorophenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2,4-Dinitrophenol	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
2,4-Dinitrotoluene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2,6-Dinitrotoluene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2-Chloronaphthalene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2-Chlorophenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2-Methylnaphthalene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2-Methylphenol (o-cresol)	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2-Nitroaniline	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
2-Nitrophenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
3,3'-Dichlorobenzidine	5500 UJ	7600 UJ	8400 UJ	9100 UJ	5700 UJ	1200 UJ	860 UJ
3-Methylphenol/4-Methylphenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
3-Nitroaniline	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
4,6-Dinitro-2-methylphenol	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
4-Bromophenylphenyl ether	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
4-Chloro-3-methylphenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
4-Chloroaniline	5500 UJ	7600 UJ	8400 UJ	9100 UJ	5700 UJ	1200 UJ	860 UJ
4-Chlorophenylphenyl ether	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
4-Nitroaniline	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
4-Nitrophenol	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
Acenaphthene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Acenaphthylene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Anthracene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Benzo(a)anthracene	2800 UJ	890 J	4300 UJ	4700 UJ	420 J	100 J	120 J
Benzo(a)pyrene	1500 UJ	1400 J	2300 UJ	2500 UJ	560 J	150 J	170 J
Benzo(b)fluoranthene	600 J	2000 J	970 J	780 J	910 J	170 J	260 J
Benzo(g,h,i)perylene	2800 UJ	1400 J	4300 UJ	4700 UJ	660 J	140 J	170 J
Benzo(k)fluoranthene	390 J	1200 J	660 J	520 J	610 J	600 UJ	170 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	SED-CSC-S2-0.2FT	SED-CSC-S3-0.2FT	SED-CSD-S1-0.2FT	SED-CSD-S2-0.2FT	SED-CSD-S3-0.2FT	SED-CSE-S1-0.2FT	SED-CSE-S2-0.2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Butylbenzylphthalate	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Carbazole	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Chrysene	500 J	1500 J	790 J	670 J	740 J	190 J	220 J
Di-n-butylphthalate	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Di-n-octylphthalate	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Dibenzo(a,h)anthracene	1500 UJ	2100 UJ	2300 UJ	2500 UJ	1600 UJ	320 UJ	240 UJ
Dibenzofuran	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Diethylphthalate	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Dimethylphthalate	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Fluoranthene	800 J	2200 J	1200 J	1000 J	1200 J	320 J	390 J
Fluorene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Hexachlorobenzene	1200 UJ	1600 UJ	1800 UJ	1900 UJ	1200 UJ	250 UJ	180 UJ
Hexachlorobutadiene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Hexachlorocyclopentadiene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Hexachloroethane	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Indeno(1,2,3-cd)pyrene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	130 J	150 J
Isophorone	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
N-Nitroso-di-n-propylamine	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
N-Nitrosodiphenylamine	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Naphthalene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Nitrobenzene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Pentachlorophenol	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
Phenanthrene	320 J	840 J	4300 UJ	4700 UJ	410 J	130 J	120 J
Phenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Pyrene	660 J	2000 J	950 J	970 J	1100 J	250 J	310 J
bis(2-Chloroethoxy)methane	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
bis(2-Chloroethyl)ether	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
bis(2-Ethylhexyl)phthalate	2800 UJ	3900 UJ	4300 UJ	4700 UJ	1200 J	600 UJ	260 J
Total Semivolatiles	3270	13430	4570	3940	7810	1580	2340

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	SED-CSE-S3-0.2FT	SED-CSF-S1-0.2FT	SED-CSF-S2-0.2FT	SED-CSF-S3-0.2FT	SED-M-S1-0.2FT	SED-RA1-S1-0.2FT	SED-RA1-S2-0.2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
1,2,4-Trichlorobenzene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
1,2-Dichlorobenzene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
1,3-Dichlorobenzene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
1,4-Dichlorobenzene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2,2'-Oxybis(1-Chloropropane)	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2,4,5-Trichlorophenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2,4,6-Trichlorophenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2,4-Dichlorophenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2,4-Dinitrophenol	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
2,4-Dinitrotoluene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2,6-Dinitrotoluene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2-Chloronaphthalene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2-Chlorophenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2-Methylnaphthalene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2-Methylphenol (o-cresol)	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2-Nitroaniline	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
2-Nitrophenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
3,3'-Dichlorobenzidine	1100 UJ	770 UJ	1700 UJ	1200 UJ	9700 UJ	590 U	880 UJ
3-Methylphenol/4-Methylphenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
3-Nitroaniline	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
4,6-Dinitro-2-methylphenol	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
4-Bromophenylphenyl ether	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
4-Chloro-3-methylphenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
4-Chloroaniline	1100 UJ	770 UJ	1700 UJ	1200 UJ	2400 J	590 U	880 UJ
4-Chlorophenylphenyl ether	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
4-Nitroaniline	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
4-Nitrophenol	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
Acenaphthene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Acenaphthylene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Anthracene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Benzo(a)anthracene	340 J	400 UJ	890 UJ	620 UJ	1300 J	300 U	450 UJ
Benzo(a)pyrene	420 J	210 UJ	470 UJ	330 UJ	1500 J	160 U	240 UJ
Benzo(b)fluoranthene	520 J	400 UJ	890 UJ	620 UJ	1500 J	300 U	450 UJ
Benzo(g,h,i)perylene	350 J	400 UJ	890 UJ	620 UJ	1300 J	300 U	450 UJ
Benzo(k)fluoranthene	600 J	400 UJ	890 UJ	620 UJ	1800 J	300 U	450 UJ

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	SED-CSE-S3-0.2FT	SED-CSF-S1-0.2FT	SED-CSF-S2-0.2FT	SED-CSF-S3-0.2FT	SED-M-S1-0.2FT	SED-RA1-S1-0.2FT	SED-RA1-S2-0.2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Butylbenzylphthalate	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Carbazole	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Chrysene	660 J	74 J	890 UJ	620 UJ	1600 J	300 U	450 UJ
Di-n-butylphthalate	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Di-n-octylphthalate	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Dibenzo(a,h)anthracene	300 UJ	210 UJ	470 UJ	330 UJ	2600 UJ	160 U	240 UJ
Dibenzofuran	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Diethylphthalate	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Dimethylphthalate	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Fluoranthene	1200 J	120 J	890 UJ	130 J	3000 J	300 U	450 UJ
Fluorene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Hexachlorobenzene	230 UJ	160 UJ	370 UJ	260 UJ	2000 UJ	120 U	190 UJ
Hexachlorobutadiene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Hexachlorocyclopentadiene	R	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Hexachloroethane	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Indeno(1,2,3-cd)pyrene	430 J	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Isophorone	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
N-Nitroso-di-n-propylamine	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
N-Nitrosodiphenylamine	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Naphthalene	560 UJ	400 UJ	890 UJ	620 UJ	1100 J	300 U	450 UJ
Nitrobenzene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Pentachlorophenol	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
Phenanthrene	510 J	400 UJ	890 UJ	620 UJ	1300 J	300 U	450 UJ
Phenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Pyrene	1000 J	400 UJ	890 UJ	620 UJ	2200 J	300 U	450 UJ
bis(2-Chloroethoxy)methane	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
bis(2-Chloroethyl)ether	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
bis(2-Ethylhexyl)phthalate	250 J	400 UJ	890 UJ	620 UJ	1400 J	300 U	450 UJ
Total Semivolatiles	6280	194	ND	130	20400	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	SED-RA2-S1-0.2FT	SED-RA2-S1-0.2FTEB	SED-RA2-S1-0.2FTFD	SED-RA2-S2-0.2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw
Compound				
1,2,4-Trichlorobenzene	350 UJ	10 U	350 UJ	370 UJ
1,2-Dichlorobenzene	350 UJ	10 U	350 UJ	370 UJ
1,3-Dichlorobenzene	350 UJ	10 U	350 UJ	370 UJ
1,4-Dichlorobenzene	350 UJ	10 U	350 UJ	370 UJ
2,2'-Oxybis(1-Chloropropane)	350 UJ	10 U	350 UJ	370 UJ
2,4,5-Trichlorophenol	350 UJ	10 U	350 UJ	370 UJ
2,4,6-Trichlorophenol	350 UJ	2.1 U	350 UJ	370 UJ
2,4-Dichlorophenol	350 UJ	10 U	350 UJ	370 UJ
2,4-Dinitrophenol	1800 UJ	14 U	1800 UJ	1800 UJ
2,4-Dinitrotoluene	350 UJ	10 U	350 UJ	370 UJ
2,6-Dinitrotoluene	350 UJ	10 U	350 UJ	370 UJ
2-Chloronaphthalene	350 UJ	10 U	350 UJ	370 UJ
2-Chlorophenol	350 UJ	10 U	350 UJ	370 UJ
2-Methylnaphthalene	350 UJ	10 U	350 UJ	370 UJ
2-Methylphenol (o-cresol)	350 UJ	10 U	350 UJ	370 UJ
2-Nitroaniline	1800 UJ	50 U	1800 UJ	1800 UJ
2-Nitrophenol	350 UJ	10 U	350 UJ	370 UJ
3,3'-Dichlorobenzidine	680 UJ	20 U	690 UJ	710 UJ
3-Methylphenol/4-Methylphenol	350 UJ	10 U	350 UJ	370 UJ
3-Nitroaniline	1800 UJ	50 U	1800 UJ	1800 UJ
4,6-Dinitro-2-methylphenol	1800 UJ	13 U	1800 UJ	1800 UJ
4-Bromophenylphenyl ether	350 UJ	1 U	350 UJ	370 UJ
4-Chloro-3-methylphenol	350 UJ	10 U	350 UJ	370 UJ
4-Chloroaniline	680 UJ	1.2 J	690 UJ	710 UJ
4-Chlorophenylphenyl ether	350 UJ	10 U	350 UJ	370 UJ
4-Nitroaniline	1800 UJ	50 U	1800 UJ	1800 UJ
4-Nitrophenol	1800 UJ	50 U	1800 UJ	1800 UJ
Acenaphthene	350 UJ	10 U	350 UJ	370 UJ
Acenaphthylene	350 UJ	10 U	350 UJ	370 UJ
Anthracene	350 UJ	10 U	350 UJ	370 UJ
Benzo(a)anthracene	350 UJ	10 U	350 UJ	370 UJ
Benzo(a)pyrene	190 UJ	10 U	190 UJ	190 UJ
Benzo(b)fluoranthene	350 UJ	10 U	350 UJ	370 UJ
Benzo(g,h,i)perylene	350 UJ	10 U	350 UJ	370 UJ
Benzo(k)fluoranthene	350 UJ	10 U	350 UJ	370 UJ

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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File Number 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	SED-RA2-S1-0 2FT	SED-RA2-S1-0.2FTEB	SED-RA2-S1-0.2FTFD	SED-RA2-S2-0.2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw
Compound				
Butylbenzylphthalate	350 UJ	10 U	350 UJ	370 UJ
Carbazole	350 UJ	10 U	350 UJ	370 UJ
Chrysene	350 UJ	10 U	350 UJ	370 UJ
Di-n-butylphthalate	350 UJ	10 U	350 UJ	370 UJ
Di-n-octylphthalate	350 UJ	10 U	350 UJ	370 UJ
Dibenzo(a,h)anthracene	190 UJ	10 U	190 UJ	190 UJ
Dibenzofuran	350 UJ	10 U	350 UJ	370 UJ
Diethylphthalate	350 UJ	10 U	350 UJ	370 UJ
Dimethylphthalate	350 UJ	10 U	350 UJ	370 UJ
Fluoranthene	350 UJ	10 U	350 UJ	370 UJ
Fluorene	350 UJ	1 U	350 UJ	370 UJ
Hexachlorobenzene	140 UJ	10 U	140 UJ	150 UJ
Hexachlorobutadiene	350 UJ	10 U	350 UJ	370 UJ
Hexachlorocyclopentadiene	350 UJ	10 U	350 UJ	370 UJ
Hexachloroethane	350 UJ	1.9 U	350 UJ	370 UJ
Indeno(1,2,3-cd)pyrene	350 UJ	10 U	350 UJ	370 UJ
Isophorone	350 UJ	10 U	350 UJ	370 UJ
N-Nitroso-di-n-propylamine	350 UJ	10 U	350 UJ	370 UJ
N-Nitrosodiphenylamine	350 UJ	5 U	350 UJ	370 UJ
Naphthalene	350 UJ	10 U	350 UJ	370 UJ
Nitrobenzene	350 UJ	3.5 U	350 UJ	370 UJ
Pentachlorophenol	1800 UJ	5 U	1800 UJ	1800 UJ
Phenanthrene	350 UJ	10 U	350 UJ	370 UJ
Phenol	350 UJ	10 U	350 UJ	370 UJ
Pyrene	350 UJ	10 U	350 UJ	370 UJ
bis(2-Chloroethoxy)methane	350 UJ	10 U	350 UJ	370 UJ
bis(2-Chloroethyl)ether	350 UJ	10 U	350 UJ	370 UJ
bis(2-Ethylhexyl)phthalate	350 UJ	1.8 U	350 UJ	370 UJ
Total Semivolatiles	ND	1.2	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Pesticides

O'BRIEN & GERE ENGINEERS, INC.

Table 5-4
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8081A Pesticide Data

	Sample ID	BPL-ESED-S1-0.2FT	BPL-ESED-S1-0.2FTFD	BPL-ESED-S2-0.2FT	BPL-ESED-S3-0.2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
	Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/l
Compound								
4,4'-DDD		18 UJ	9.1 UJ	19 UJ	18 UJ	4.8 U	4.5 U	0.1 U
4,4'-DDE		1.4 J	0.81 J	3.2 J	1.6 J	4.8 U	4.5 U	0.1 U
4,4'-DDT		1.9 J	0.38 J	19 UJ	1.4 J	4.8 U	4.5 U	0.1 U
Aldrin		9.4 UJ	4.7 UJ	9.9 UJ	9.4 UJ	2.4 U	2.3 U	0.05 U
Alpha Chlordane		0.52 J	0.43 J	3.2 J	1.2 J	2.4 U	2.3 U	0.05 U
Dieldrin		0.3 J	0.21 J	0.5 J	18 UJ	4.8 UJ	4.5 U	0.1 U
Endosulfan I		9.4 UJ	0.38 J	2.8 J	1 J	2.4 U	2.3 U	0.05 U
Endosulfan II		18 UJ	9.1 UJ	19 UJ	18 UJ	4.8 U	4.5 U	0.1 U
Endosulfan sulfate		18 UJ	0.94 J	1.4 J	18 UJ	4.8 U	4.5 U	0.1 U
Endrin		18 UJ	9.1 UJ	19 UJ	18 UJ	4.8 UJ	4.5 U	0.1 U
Endrin aldehyde		1.6 J	1.1 J	2.2 J	1.2 J	4.8 U	4.5 U	0.1 U
Endrin ketone		1 J	0.43 J	19 UJ	18 UJ	4.8 U	4.5 U	0.1 U
Gamma Chlordane		0.89 J	0.58 J	3 J	9.4 UJ	2.4 U	2.3 U	0.05 U
Heptachlor		9.4 UJ	4.7 UJ	9.9 UJ	9.4 UJ	2.4 U	2.3 U	0.05 U
Heptachlor epoxide		9.4 UJ	0.2 J	9.9 UJ	9.4 UJ	2.4 U	2.3 U	0.05 U
Methoxychlor		94 UJ	47 UJ	99 UJ	94 UJ	24 U	23 U	0.5 U
Toxaphene		940 UJ	470 UJ	990 UJ	940 UJ	240 U	230 U	5 U
alpha-BHC		2.8 UJ	1.4 UJ	2.9 UJ	2.8 UJ	0.72 U	0.68 U	0.039 U
beta-BHC		2.8 UJ	1.4 UJ	2.9 UJ	2.8 UJ	0.72 UJ	0.68 U	0.014 U
delta-BHC		2.8 UJ	1.4 UJ	2.9 UJ	2.8 UJ	2.4 U	2.3 U	0.012 U
gamma-BHC (Lindane)		9.4 UJ	0.16 J	9.9 UJ	9.4 UJ	2.4 U	2.3 U	0.019 U
Total Pesticides		7.61	5.62	16.3	6.4	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-4
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8081A Pesticide Data

Compound	Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0.2FTEB	SED-CSB-S1-0.2FT	SED-CSB-S1-0.2FTFD	SED-CSB-S2-0.2FT	SED-CSB-S3-0.2FT	SED-CSC-S1-0.2FT
	Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
	Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
4,4'-DDD		4.5 U	0.10 U	170 J	130 J	970 UJ	650 UJ	28 J
4,4'-DDE		4.5 U	0.10 U	970 UJ	860 UJ	970 UJ	650 UJ	51 J
4,4'-DDT		4.5 U	0.10 U	970 UJ	860 UJ	970 UJ	650 UJ	140 UJ
Aldrin		2.3 U	0.050 U	1200 J	1000 J	980 J	410 J	25 J
Alpha Chlordane		2.3 U	0.050 U	500 UJ	440 UJ	500 UJ	330 UJ	37 J
Dieldrin		4.5 U	0.10 U	970 UJ	860 UJ	970 UJ	650 UJ	140 UJ
Endosulfan I		2.3 U	0.050 U	500 UJ	440 UJ	500 UJ	330 UJ	70 UJ
Endosulfan II		4.5 U	0.10 U	970 UJ	860 UJ	970 UJ	650 UJ	140 UJ
Endosulfan sulfate		4.5 U	0.0014 J	970 UJ	84 J	130 J	98 J	9 J
Endrin		4.5 U	0.10 U	970 UJ	860 UJ	970 UJ	650 UJ	140 UJ
Endrin aldehyde		4.5 U	0.10 U	520 J	860 UJ	970 UJ	650 UJ	140 UJ
Endrin ketone		4.5 U	0.10 U	970 UJ	860 UJ	970 UJ	650 UJ	140 UJ
Gamma Chlordane		2.3 U	0.050 U	760 J	680 J	500 UJ	330 UJ	110 J
Heptachlor		2.3 U	0.050 U	500 UJ	440 UJ	500 J	330 UJ	70 UJ
Heptachlor epoxide		2.3 U	0.050 U	500 UJ	440 UJ	500 UJ	330 UJ	70 UJ
Methoxychlor		23 U	0.50 U	5000 UJ	4400 UJ	5000 UJ	3300 UJ	700 UJ
Toxaphene		230 U	5.0 U	50000 UJ	44000 UJ	50000 UJ	33000 UJ	7000 UJ
alpha-BHC		0.69 U	0.039 U	150 UJ	130 UJ	150 UJ	98 UJ	21 UJ
beta-BHC		0.69 U	0.014 U	150 UJ	130 UJ	150 UJ	98 UJ	21 UJ
delta-BHC		2.3 U	0.0096 J	150 UJ	130 UJ	150 UJ	98 UJ	21 UJ
gamma-BHC (Lindane)		2.3 U	0.019 U	500 UJ	440 UJ	500 UJ	330 UJ	70 UJ
Total Pesticides		ND	0.011	2650	1894	1610	508	260

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-4
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8081A Pesticide Data

Sample ID	SED-CSC-S2-0.2FT	SED-CSC-S3-0.2FT	SED-CSD-S1-0.2FT	SED-CSD-S2-0.2FT	SED-CSD-S3-0.2FT	SED-CSE-S1-0.2FT	SED-CSE-S2-0.2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
4,4'-DDD	270 UJ	380 UJ	86 UJ	94 UJ	58 UJ	120 UJ	86 UJ
4,4'-DDE	270 UJ	380 UJ	20 J	14 J	4.4 J	15 J	3.4 J
4,4'-DDT	270 UJ	380 UJ	86 UJ	94 UJ	58 UJ	9.3 J	86 UJ
Aldrin	42 J	64 J	9.6 J	11 J	2.7 J	60 UJ	44 UJ
Alpha Chlordane	54 J	120 J	26 J	14 J	30 UJ	6.9 J	2.5 J
Dieldrin	270 UJ	380 UJ	86 UJ	94 UJ	58 UJ	9.4 J	1.7 J
Endosulfan I	140 UJ	200 UJ	44 UJ	48 UJ	30 UJ	60 UJ	44 UJ
Endosulfan II	270 UJ	380 UJ	86 UJ	94 UJ	58 UJ	12 J	2.3 J
Endosulfan sulfate	16 J	380 UJ	86 UJ	94 UJ	58 UJ	10 J	86 UJ
Endrin	270 UJ	380 UJ	86 UJ	94 UJ	58 UJ	4.6 J	86 UJ
Endrin aldehyde	270 UJ	380 UJ	86 UJ	94 UJ	16 J	22 J	3.6 J
Endrin ketone	270 UJ	380 UJ	86 UJ	94 UJ	5.5 J	17 J	6.8 J
Gamma Chlordane	140 J	250 J	49 J	29 J	6.7 J	14 J	5.9 J
Heptachlor	9.1 J	9.7 J	44 UJ	48 UJ	30 UJ	60 UJ	44 UJ
Heptachlor epoxide	140 UJ	200 UJ	44 UJ	48 UJ	30 UJ	5.2 J	44 UJ
Methoxychlor	1400 UJ	2000 UJ	440 UJ	480 UJ	300 UJ	39 J	440 UJ
Toxaphene	14000 UJ	20000 UJ	4400 UJ	4800 UJ	3000 UJ	6000 UJ	4400 UJ
alpha-BHC	41 UJ	58 UJ	13 UJ	14 UJ	8.8 UJ	18 UJ	13 UJ
beta-BHC	41 UJ	58 UJ	13 UJ	14 UJ	8.8 UJ	18 UJ	13 UJ
delta-BHC	41 UJ	18 J	16 J	14 UJ	1.5 J	1.3 J	13 UJ
gamma-BHC (Lindane)	140 UJ	200 UJ	44 UJ	48 UJ	30 UJ	60 UJ	44 UJ
Total Pesticides	261.1	461.7	120.6	68	36.8	165.7	26.2

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-4
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8081A Pesticide Data

Sample ID	SED-CSE-S3-0.2FT	SED-CSF-S1-0.2FT	SED-CSF-S2-0.2FT	SED-CSF-S3-0.2FT	SED-M-S1-0.2FT	SED-RA1-S1-0.2FT	SED-RA1-S2-0.2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
4,4'-DDD	22 UJ	3.8 J	35 UJ	24 UJ	770 UJ	5.8 U	8.8 UJ
4,4'-DDE	4.3 J	11 J	8.1 J	2.5 J	110 J	5.8 U	8.8 UJ
4,4'-DDT	22 UJ	4.5 J	35 UJ	24 UJ	44 J	5.8 U	8.8 UJ
Aldrin	11 UJ	4.1 J	18 UJ	12 UJ	120 J	3 U	4.6 UJ
Alpha Chlordane	3.9 J	4.6 J	5.3 J	0.84 J	400 UJ	3 U	4.6 UJ
Dieldrin	5.4 J	9.3 J	35 UJ	0.99 J	770 UJ	5.8 U	8.8 UJ
Endosulfan I	11 UJ	5.7 J	2 J	1.2 J	400 UJ	3 U	4.6 UJ
Endosulfan II	22 UJ	8.1 J	5.5 J	1.8 J	770 UJ	5.8 U	8.8 UJ
Endosulfan sulfate	22 UJ	2.8 J	35 UJ	24 UJ	50 J	5.8 U	8.8 UJ
Endrin	22 UJ	1.7 J	35 UJ	1.7 J	770 UJ	5.8 U	8.8 UJ
Endrin aldehyde	22 UJ	14 J	9 J	3.6 J	770 UJ	5.8 U	8.8 UJ
Endrin ketone	22 UJ	10 J	7.2 J	3.8 J	200 J	5.8 U	8.8 UJ
Gamma Chlordane	5.1 J	17 J	7.5 J	2.4 J	140 J	3 U	4.6 UJ
Heptachlor	0.53 J	7.8 UJ	18 UJ	0.93 J	59 J	3 U	4.6 UJ
Heptachlor epoxide	11 UJ	5.4 J	18 UJ	0.51 J	400 UJ	3 U	4.6 UJ
Methoxychlor	110 UJ	24 J	14 J	7.3 J	4000 UJ	30 U	46 UJ
Toxaphene	1100 UJ	780 UJ	1800 UJ	1200 UJ	40000 UJ	300 U	460 UJ
alpha-BHC	3.3 UJ	2.3 UJ	5.3 UJ	3.7 UJ	120 UJ	0.89 U	1.3 UJ
beta BHC	3.3 UJ	2.3 UJ	5.3 UJ	3.7 UJ	120 UJ	0.89 U	1.3 UJ
delta-BHC	3.3 UJ	0.34 J	5.3 UJ	3.7 UJ	120 UJ	0.89 U	1.3 UJ
gamma-BHC (Lindane)	11 UJ	7.8 UJ	18 UJ	12 UJ	400 UJ	3 U	4.6 UJ
Total Pesticides	19.23	126.34	58.6	27.57	723	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-4
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8081A Pesticide Data

Sample ID	SED-RA2-S1-0.2FT	SED-RA2-S1-0.2FTEB	SED-RA2-S1-0.2FTFD	SED-RA2-S2-0.2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw
Compound				
4,4'-DDD	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
4,4'-DDE	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
4,4'-DDT	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Aldrin	3.5 UJ	0.05 U	3.5 UJ	3.7 UJ
Alpha Chlordane	3.5 UJ	0.05 U	3.5 UJ	3.7 UJ
Dieldrin	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Endosulfan I	3.5 UJ	0.05 U	3.5 UJ	3.7 UJ
Endosulfan II	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Endosulfan sulfate	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Endrin	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Endrin aldehyde	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Endrin ketone	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Gamma Chlordane	3.5 UJ	0.05 U	3.5 UJ	3.7 UJ
Heptachlor	3.5 UJ	0.05 U	3.5 UJ	3.7 UJ
Heptachlor epoxide	3.5 UJ	0.05 U	3.5 UJ	3.7 UJ
Methoxychlor	35 UJ	0.5 U	35 UJ	37 UJ
Toxaphene	350 UJ	5 U	350 UJ	370 UJ
alpha-BHC	1 UJ	0.039 U	1 UJ	1.1 UJ
beta-BHC	1 UJ	0.014 U	1 UJ	1.1 UJ
delta-BHC	1 UJ	0.0089 J	1 UJ	1.1 UJ
gamma-BHC (Lindane)	3.5 UJ	0.019 U	3.5 UJ	3.7 UJ
Total Pesticides	ND	0.0089	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Herbicides

O'BRIEN & GERE ENGINEERS, INC.

Table 5-5
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8151A Herbicide Data

Sample ID	BPL-ESED-S1-0.2FT	BPL-ESED-S1-0.2FTFD	BPL-ESED-S2-0.2FT	BPL-ESED-S3-0.2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/l
Compound							
2,4,5-T	23 UJ	23 UJ	24 UJ	23 UJ	12 U	11 U	0.5 U
2,4,5-TP (Silvex)	23 UJ	23 UJ	24 UJ	23 UJ	12 U	11 U	0.5 U
2,4-D	23 UJ	6.1 J	24 UJ	11 J	12 U	11 U	0.5 U
2,4-DB	23 UJ	23 UJ	24 UJ	23 UJ	12 U	11 U	0.5 U
Dalapon	180 UJ	180 UJ	190 UJ	180 UJ	97 U	90 U	120 U
Dicamba	55 UJ	55 UJ	58 UJ	56 UJ	30 U	27 U	1.2 U
Dichloroprop	280 UJ	270 UJ	290 UJ	280 UJ	140 U	140 U	6 U
Dinoseb	280 UJ	270 UJ	290 UJ	280 UJ	140 U	140 U	6 U
MCPA	5500 UJ	5500 UJ	5800 UJ	5600 UJ	2900 U	2700 U	120 U
MCPP	5500 UJ	5500 UJ	5800 UJ	5600 UJ	2900 U	2700 U	120 U
Pentachlorophenol	47 UJ	47 UJ	50 UJ	47 UJ	29 U	27 U	1 U
Total Herbicides	ND	6.1	ND	11	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-5
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8151A Herbicide Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0.2FTEB	SED-CSB-S1-0.2FT	SED-CSB-S1-0.2FTFD	SED-CSB-S2-0.2FT	SED-CSB-S3-0.2FT	SED-CSC-S1-0.2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
2,4,5-T	11 U	0.50 U	110 UJ	110 UJ	21 UJ	140 UJ	28 UJ
2,4,5-TP (Silvex)	11 U	0.50 U	110 UJ	110 UJ	21 UJ	140 UJ	28 UJ
2,4-D	11 U	0.50 U	110 UJ	110 UJ	21 UJ	140 UJ	28 UJ
2,4-DB	11 U	0.50 U	110 UJ	110 UJ	21 UJ	140 UJ	28 UJ
Dalapon	91 U	120 U	840 UJ	850 UJ	160 UJ	1100 UJ	220 UJ
Dicamba	28 U	1.2 U	260 UJ	260 UJ	50 UJ	350 UJ	68 UJ
Dichloroprop	140 U	6.0 U	1300 UJ	1300 UJ	250 UJ	1800 UJ	340 UJ
Dinoseb	140 U	6.0 U	1300 UJ	1300 UJ	250 UJ	1800 UJ	340 UJ
MCPA	2800 U	120 U	26000 UJ	26000 UJ	5000 UJ	35000 UJ	6800 UJ
MCPP	2800 U	120 U	26000 UJ	26000 UJ	5000 UJ	35000 UJ	6800 UJ
Pentachlorophenol	23 U	1.0 U	57 J	36 J	220 J	56 J	7.4 J
Total Herbicides	ND	ND	57	36	220	56	7.4

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-5
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8151A Herbicide Data

	Sample ID	SED-CSC-S2-0.2FT	SED-CSC-S3-0.2FT	SED-CSD-S1-0.2FT	SED-CSD-S2-0.2FT	SED-CSD-S3-0.2FT	SED-CSE-S1-0.2FT	SED-CSE-S2-0.2FT
	Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound								
2,4,5-T		24 UJ	180 UJ	190 UJ	220 UJ	24 UJ	170 U	130 UJ
2,4,5-TP (Silvex)		24 UJ	180 UJ	190 UJ	220 UJ	24 UJ	170 UJ	130 UJ
2,4-D		24 UJ	180 UJ	190 UJ	220 UJ	24 UJ	73 J	130 UJ
2,4-DB		24 UJ	180 UJ	190 UJ	220 UJ	24 UJ	150 J	130 UJ
Dalapon		180 UJ	1400 UJ	1500 UJ	1700 UJ	190 UJ	1300 UJ	990 UJ
Dicamba		57 UJ	440 UJ	460 UJ	13 J	59 UJ	410 UJ	300 UJ
Dichloroprop		280 UJ	2200 UJ	2300 UJ	2600 UJ	290 UJ	2100 UJ	1500 UJ
Dinoseb		280 UJ	2200 UJ	2300 UJ	2600 UJ	290 UJ	2100 UJ	1500 UJ
MCPA		5700 UJ	44000 UJ	46000 UJ	53000 UJ	5900 UJ	41000 UJ	30000 UJ
MCPP		5700 UJ	44000 UJ	46000 UJ	53000 UJ	5900 UJ	41000 UJ	30000 UJ
Pentachlorophenol		23 J	23 J	400 UJ	450 UJ	3.9 J	350 UJ	12 J
Total Herbicides		23	23	ND	13	3.9	223	12

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-5
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8151A Herbicide Data

Sample ID	SED-CSE-S3-0.2FT	SED-CSF-S1-0.2FT	SED-CSF-S2-0.2FT	SED-CSF-S3-0.2FT	SED-M-S1-0.2FT	SED-RA1-S1-0.2FT	SED-RA1-S2-0.2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
2,4,5-T	140 UJ	110 UJ	240 UJ	30 UJ	220 UJ	15 U	22 UJ
2,4,5-TP (Silvex)	140 UJ	110 UJ	240 UJ	30 UJ	220 UJ	15 U	22 UJ
2,4-D	140 UJ	110 UJ	240 UJ	23 J	220 UJ	12 J	22 UJ
2,4-DB	140 UJ	110 UJ	240 UJ	30 UJ	220 UJ	15 U	22 UJ
Dalapon	1100 UJ	860 UJ	2000 UJ	240 UJ	1700 UJ	120 U	180 UJ
Dicamba	340 UJ	260 UJ	570 UJ	74 UJ	540 UJ	35 U	54 UJ
Dichloroprop	1700 UJ	1300 UJ	2900 UJ	370 UJ	2700 UJ	180 U	270 UJ
Dinoseb	R	1300 UJ	2900 UJ	370 UJ	2700 UJ	180 U	270 UJ
MCPA	34000 UJ	26000 UJ	57000 UJ	7400 UJ	54000 UJ	3500 UJ	5400 UJ
MCPP	34000 UJ	26000 UJ	57000 UJ	7400 UJ	54000 UJ	3500 U	5400 UJ
Pentachlorophenol	3.8 J	72 UJ	490 UJ	62 UJ	52 J	1.9 J	46 UJ
Total Herbicides	3.8	ND	ND	23	52	13.9	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-5
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8151A Herbicide Data

Sample ID	SED-RA2-S1-0.2FT	SED-RA2-S1-0.2FTEB	SED-RA2-S1-0.2FTFD	SED-RA2-S2-0.2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw
Compound				
2,4,5-T	17 UJ	0.5 U	17 UJ	18 UJ
2,4,5-TP (Silvex)	17 UJ	0.5 U	17 UJ	18 UJ
2,4-D	17 UJ	0.5 U	17 UJ	18 UJ
2,4-DB	17 UJ	0.5 U	17 UJ	18 UJ
Dalapon	130 UJ	120 U	130 UJ	120 UJ
Dicamba	42 UJ	1.2 U	42 UJ	43 UJ
Dichloroprop	210 UJ	6 U	210 UJ	220 UJ
Dinoseb	210 UJ	6 U	210 UJ	220 UJ
MCPA	4200 UJ	120 U	4200 UJ	4300 UJ
MCPP	4200 UJ	120 U	4200 UJ	4300 UJ
Pentachlorophenol	35 UJ	1.0 U	35 UJ	36 UJ
Total Herbicides	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

PCBs

O'BRIEN & GERE ENGINEERS, INC.

Table 5-3
Solutia
Sauget Area 1
Broad Scan Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	BPL-ESED-S1-0.2FT	BPL-ESED-S1-0.2FTFD	BPL-ESED-S2-0.2FT	BPL-ESED-S3-0.2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/l
Compound							
Decachlorobiphenyl	230 UJ	46 UJ	49 UJ	46 UJ	24 U	23 U	0.5 U
Dichlorobiphenyl	46 UJ	9.2 UJ	9.7 UJ	9.2 UJ	4.8 UJ	4.5 U	0.1 U
Heptachlorobiphenyl	140 UJ	28 UJ	29 UJ	28 UJ	15 UJ	14 U	0.3 U
Hexachlorobiphenyl	95 UJ	19 UJ	20 UJ	19 UJ	9.8 UJ	9.2 U	0.2 U
Monochlorobiphenyl	46 UJ	9.2 UJ	9.7 UJ	9.2 UJ	4.8 UJ	4.5 U	0.1 U
Nonachlorobiphenyl	230 UJ	46 UJ	49 UJ	46 UJ	24 UJ	23 U	0.5 U
Octachlorobiphenyl	140 UJ	28 UJ	29 UJ	28 UJ	15 UJ	14 U	0.3 U
Pentachlorobiphenyl	95 UJ	19 UJ	20 UJ	19 UJ	9.8 UJ	9.2 U	0.2 U
Tetrachlorobiphenyl	95 UJ	19 UJ	20 UJ	19 UJ	9.8 UJ	9.2 U	0.2 U
Trichlorobiphenyl	46 UJ	9.2 UJ	9.7 UJ	9.2 UJ	4.8 UJ	4.5 U	0.1 U
Total PCBs	ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-3
Solutia
Sauget Area 1
Broad Scan Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0.2FTEB	SED-CSB-S1-0.2FT	SED-CSB-S1-0.2FTFD	SED-CSB-S2-0.2FT	SED-CSB-S3-0.2FT	SED-CSC-S1-0.2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	23 U	0.50 U	2500 UJ	2300 UJ	3400 J	2300 J	290 UJ
Dichlorobiphenyl	4.6 U	0.10 U	500 UJ	450 UJ	640 J	500 J	57 UJ
Heptachlorobiphenyl	14 U	0.30 U	980 J	1400 UJ	5300 J	1300 J	170 UJ
Hexachlorobiphenyl	9.3 U	0.20 U	5200 J	2600 J	21000 J	7600 J	160 J
Monochlorobiphenyl	4.6 U	0.10 U	500 UJ	450 UJ	500 UJ	670 UJ	57 UJ
Nonachlorobiphenyl	23 U	0.50 U	2500 UJ	2300 UJ	2500 UJ	3400 UJ	290 UJ
Octachlorobiphenyl	14 U	0.30 U	1500 UJ	1400 UJ	1800 J	2000 UJ	170 UJ
Pentachlorobiphenyl	9.3 U	0.20 U	34000 J	7500 J	66000 J	19000 J	110 UJ
Tetrachlorobiphenyl	9.3 U	0.20 U	88000 J	15000 J	98000 J	26000 J	110 UJ
Trichlorobiphenyl	4.6 U	0.10 U	34000 J	4800 J	30000 J	11000 J	57 UJ
Total PCBs	ND	ND	162180	29900	226140	67700	160

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-3
Solutia
Sauget Area 1
Broad Scan Sediments
Method 680 Polychlorinated Biphenyl Data

	Sample ID	SED-CSC-S2-0.2FT	SED-CSC-S3-0.2FT	SED-CSD-S1-0.2FT	SED-CSD-S2-0.2FT	SED-CSD-S3-0.2FT	SED-CSE-S1-0.2FT	SED-CSE-S2-0.2FT
	Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound								
Decachlorobiphenyl		2900 UJ	3900 UJ	170 J	230 J	300 UJ	140 J	440 UJ
Dichlorobiphenyl		570 UJ	770 UJ	87 UJ	96 UJ	59 UJ	12 UJ	87 UJ
Heptachlorobiphenyl		1700 UJ	2300 UJ	260 UJ	290 UJ	180 UJ	49 J	260 UJ
Hexachlorobiphenyl		720 J	2000 J	97 J	400 J	250 J	130 J	170 UJ
Monochlorobiphenyl		570 UJ	770 UJ	87 UJ	96 UJ	59 UJ	12 UJ	87 UJ
Nonachlorobiphenyl		2900 UJ	3900 UJ	440 UJ	480 UJ	300 UJ	60 UJ	440 UJ
Octachlorobiphenyl		1700 UJ	2300 UJ	260 UJ	290 UJ	180 UJ	36 UJ	260 UJ
Pentachlorobiphenyl		2200 J	2600 J	430 J	520 J	480 J	650 J	170 UJ
Tetrachlorobiphenyl		1200 UJ	1600 UJ	180 UJ	190 UJ	120 UJ	60 J	170 UJ
Trichlorobiphenyl		570 UJ	770 UJ	87 UJ	96 UJ	59 UJ	9.2 J	87 UJ
Total PCBs		2920	4600	697	1150	730	1038.2	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-3
Solutia
Sauget Area 1
Broad Scan Sediments
Method 680 Polychlorinated Biphenyl Data

	Sample ID	SED-CSE-S3-0.2FT	SED-CSF-S1-0.2FT	SED-CSF-S2-0.2FT	SED-CSF-S3-0.2FT	SED-M-S1-0.2FT	SED-RA1-S1-0.2FT	SED-RA1-S2-0.2FT
	Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound								
Decachlorobiphenyl		56 UJ	39 UJ	88 UJ	310 UJ	5100 UJ	30 U	45 UJ
Dichlorobiphenyl		11 UJ	7.7 UJ	17 UJ	60 UJ	1000 UJ	5.9 U	8.9 UJ
Heptachlorobiphenyl		33 UJ	23 UJ	53 UJ	180 UJ	3000 UJ	18 U	27 UJ
Hexachlorobiphenyl		22 UJ	22 J	17 J	120 UJ	3000 J	12 U	18 UJ
Monochlorobiphenyl		11 UJ	7.7 UJ	17 UJ	60 UJ	1000 UJ	5.9 U	8.9 UJ
Nonachlorobiphenyl		56 UJ	39 UJ	88 UJ	310 UJ	5100 UJ	30 U	45 UJ
Octachlorobiphenyl		33 UJ	23 UJ	53 UJ	180 UJ	3000 UJ	18 U	27 UJ
Pentachlorobiphenyl		22 UJ	61 J	66 J	120 UJ	4800 J	12 U	18 UJ
Tetrachlorobiphenyl		22 UJ	16 UJ	35 UJ	120 UJ	3100 J	12 U	18 UJ
Trichlorobiphenyl		11 UJ	7.7 UJ	17 UJ	60 UJ	1300 J	5.9 U	8.9 UJ
Total PCBs		ND	83	83	ND	12200	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-3
Solutia
Sauget Area 1
Broad Scan Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	SED-RA2-S1-0.2FT	SED-RA2-S1-0.2FTEB	SED-RA2-S1-0.2FTFD	SED-RA2-S2-0.2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw
Compound				
Decachlorobiphenyl	35 UJ	0.5 U	35 UJ	36 UJ
Dichlorobiphenyl	6.9 UJ	0.1 U	6.9 UJ	7.1 UJ
Heptachlorobiphenyl	21 UJ	0.3 U	21 UJ	22 UJ
Hexachlorobiphenyl	14 UJ	0.2 U	14 UJ	14 UJ
Monochlorobiphenyl	6.9 UJ	0.1 U	6.9 UJ	7.1 UJ
Nonachlorobiphenyl	35 UJ	0.5 U	35 UJ	36 UJ
Octachlorobiphenyl	21 UJ	0.3 U	21 UJ	22 UJ
Pentachlorobiphenyl	14 UJ	0.2 U	14 UJ	14 UJ
Tetrachlorobiphenyl	14 UJ	0.2 U	14 UJ	14 UJ
Trichlorobiphenyl	6.9 UJ	0.1 U	6.9 UJ	7.1 UJ
Total PCBs	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Dioxin

O'BRIEN & GERE ENGINEERS, INC.

Table 5-7
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8290 PCDD/PCDF Data

Compound	Sample ID	BPL-ESED-S1-0.2FT	BPL-ESED-S1-0.2FTFD	BPL-ESED-S2-0.2FT	BPL-ESED-S3-0.2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
	Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
1,2,3,4,6,7,8,9-OCDD		8.39 J	8.86 J	17.25 J	15.5 J	9.35	12.24	0.0000276
1,2,3,4,6,7,8,9-OCDF		0.236 J	0.234 J	0.658 J	0.756 J	0.0082	0.0074	0.0000077 U
1,2,3,4,6,7,8-HpCDD		0.225 J	0.251 J	0.425 J	0.443 J	0.106	0.0778	0.0000057 U
1,2,3,4,6,7,8-HpCDF		0.052 J	0.0576 J	0.126 J	0.159 J	0.0044	0.0031	0.0000046 U
1,2,3,4,7,8,9-HpCDF		0.0134 JM	0.0053 J	0.0117 J	0.0109 J	0.0002 U	0.0002 U	0.0000066 U
1,2,3,4,7,8-HxCDD		0.0027 JM	0.0034 J	0.0049 J	0.0041 JM	0.0015	0.0011	0.0000044 U
1,2,3,4,7,8-HxCDF		0.0049 J	0.0052 J	0.0092 J	0.0072 J	0.00049	0.00048	0.0000025 U
1,2,3,6,7,8-HxCDD		0.0078 J	0.0081 J	0.0162 J	0.013 J	0.0019	0.0013	0.0000041 U
1,2,3,6,7,8-HxCDF		0.0028 J	0.0031 J	0.0059 J	0.0041 J	0.00006 U	0.00026 M	0.0000023 U
1,2,3,7,8,9-HxCDD		0.0099 J	0.0096 J	0.0173 J	0.013 J	0.0041	0.0026	0.0000044 U
1,2,3,7,8,9-HxCDF		0.006 J	0.00039 JM	0.0036 J	0.00074 J	0.00008 U	0.00008 U	0.000003 U
1,2,3,7,8-PeCDD		0.0022 J	0.002 J	0.0035 J	0.0023 J	0.00058	0.00047	0.0000018 U
1,2,3,7,8-PeCDF		0.0019 JM	0.002 J	0.0027 J	0.0018 JM	0.00006 U	0.00039 JM	0.0000016 U
2,3,4,6,7,8-HxCDF		0.0038 JM	0.0051 J	0.0073 J	0.0064 J	0.00006 U	0.00038	0.0000048
2,3,4,7,8-PeCDF		0.0036 J	0.0043 J	0.0042 J	0.0029 J	0.00031	0.00031	0.0000017 U
2,3,7,8-TCDD		0.0013 J	0.001 JM	0.0122 J	0.0026 J	0.00021	0.00008 U	0.0000027 U
2,3,7,8-TCDF		0.0099 J	0.0104 J	0.0094 J	0.0062 J	0.00057	0.00051	0.0000028 U
1998 Total TEQ w/ EMPC as ND		0.0135021	0.0133079	0.0327328	0.0194186	0.00385332	0.00336349	0.0000044577

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-7
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8290 PCDD/PCDF Data

Sample ID	SED-CSC-S2-0.2FT	SED-CSC-S3-0.2FT	SED-CSD-S1-0.2FT	SED-CSD-S2-0.2FT	SED-CSD-S3-0.2FT	SED-CSE-S1-0.2FT	SED-CSE-S2-0.2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,3,4,6,7,8,9-OCDD	483.88 J	880.64 J	209.03 J	182.84 J	91.25 J	60.65 J	91.45 J
1,2,3,4,6,7,8,9-OCDF	178.41 J	398.07 J	63.97 J	51.28 J	26.62 J	24.02 J	28.71 J
1,2,3,4,6,7,8-HpCDD	55.25 J	101.1 J	21.45 J	20.14 J	10.81 J	6.77 J	9.45 J
1,2,3,4,6,7,8-HpCDF	33.37 J	62.04 J	12.1 J	10.92 J	6.14 J	5.13 J	5.94 J
1,2,3,4,7,8,9-HpCDF	1.81 J	4.27 J	0.538 J	0.414 J	0.305 J	0.673 J	0.276 J
1,2,3,4,7,8-HxCDD	0.143 J	0.314 J	0.0968 J	0.107 J	0.0962 J	0.13 J	0.0574 J
1,2,3,4,7,8-HxCDF	0.915 J	1.36 J	0.297 J	0.245 J	0.166 J	0.364 J	0.127 J
1,2,3,6,7,8-HxCDD	1.64 J	2.79 J	0.587 J	0.529 J	0.396 J	0.704 J	0.282 J
1,2,3,6,7,8-HxCDF	0.328 J	0.698 J	0.178 J	0.146 J	0.118 J	0.222 J	0.116 J
1,2,3,7,8,9-HxCDD	0.587 J	1.03 J	0.318 J	0.34 J	0.363 J	0.415 J	0.176 J
1,2,3,7,8,9-HxCDF	0.0153 J	0.0466 J	0.0076 J	0.009 J	0.0074 J	0.0175 J	0.0082 J
1,2,3,7,8-PeCDD	0.135 J	0.219 J	0.0741 J	0.0785 J	0.0811 J	0.0696 J	0.0244 J
1,2,3,7,8-PeCDF	0.134 JM	0.151 J	0.0575 J	0.0569 J	0.0377 J	0.051 J	0.0268 J
2,3,4,6,7,8-HxCDF	0.479 J	1.09 J	0.233 J	0.182 J	0.153 J	0.274 J	0.13 J
2,3,4,7,8-PeCDF	0.188 J	0.25 J	0.0792 J	0.0624 J	0.0461 J	0.0658 J	0.0283 J
2,3,7,8-TCDD	0.0297 JM	0.0489 JM	0.0129 JM	0.0138 JM	0.0134 J	0.0172 JM	0.0075 J
2,3,7,8-TCDF	0.174 J	0.28 J	0.0983 J	0.0911 J	0.064 J	0.0921 J	0.0457 J
1998 Total TEQ w/ EMPC as ND	1.645859	2.938831	0.672775	0.622507	0.440132	0.469707	0.310296

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-7
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8290 PCDD/PCDF Data

Sample ID	SED-RA2-S1-0.2FT	SED-RA2-S1-0.2FTEB	SED-RA2-S1-0.2FTFD	SED-RA2-S2-0.2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
Units	ug/kg	ug/l	ug/kg	ug/kg
Compound				
1,2,3,4,6,7,8,9-OCDD	9.19 J	0.000131	7.94 J	3.98 J
1,2,3,4,6,7,8,9-OCDF	0.0164	0.0000468	0.0122	0.107 J
1,2,3,4,6,7,8-HpCDD	0.144	0.0000138 M	0.136	0.128 J
1,2,3,4,6,7,8-HpCDF	0.0063	0.0000095	0.0054	0.0283 J
1,2,3,4,7,8,9-HpCDF	0.00057 M	0.0000024 U	0.0007 U	0.0021 JM
1,2,3,4,7,8-HxCDD	0.0023 M	0.0000019 U	0.0021	0.0014 JM
1,2,3,4,7,8-HxCDF	0.0012 M	0.0000012 U	0.00093 M	0.003 J
1,2,3,6,7,8-HxCDD	0.0035	0.0000019 U	0.0031	0.004 J
1,2,3,6,7,8-HxCDF	0.00062 M	0.0000011 U	0.0004 U	0.0013 J
1,2,3,7,8,9-HxCDD	0.0051	0.000002 U	0.005	0.0043 J
1,2,3,7,8,9-HxCDF	0.0004 U	0.0000015 U	0.0005 U	0.0002 UJ
1,2,3,7,8-PeCDD	0.0014	0.0000021 U	0.0015	0.0013 J
1,2,3,7,8-PeCDF	0.0005 M	0.0000012 U	0.0004 U	0.0011 J
2,3,4,6,7,8-HxCDF	0.00072 M	0.0000012 U	0.0004 U	0.0016 J
2,3,4,7,8-PeCDF	0.00067 M	0.0000012 U	0.00062 M	0.0013 J
2,3,7,8-TCDD	0.0004 U	0.0000014 U	0.0006 U	0.0005 JM
2,3,7,8-TCDF	0.00077 J	0.0000013 U	0.00075 J	0.0014 J
1998 Total TEQ w/ EMPC as ND	0.00540549	0.0000028788	0.00538422	0.0058772

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Metals

O'BRIEN & GERE ENGINEERS, INC.

Table 5-6
Solutia
Sauget Area 1
Broad Scan Sediments
Method 6010B/7470A/7471A/9010B Inorganic Data

Sample ID	BPL-ESED-S1-0.2FT	BPL-ESED-S1-0.2FTFD	BPL-ESED-S2-0.2FT	BPL-ESED-S3-0.2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/l
Compound							
Aluminum	13000 J	15000 J	16000 J	11000 J	9800	11000	0.2 U
Antimony	1.9 J	5.1 UJ	5.9 UJ	1.5 J	2.7 UJ	2.5 UJ	0.02 U
Arsenic	16 J	17 J	17 J	13 J	7	6.6	0.01 U
Barium	360 J	410 J	420 J	240 J	140 J	130 J	0.01 U
Beryllium	0.72 J	0.76 J	0.82 J	0.58 J	0.48 J	0.54	0.004 U
Cadmium	1.9 J	2 J	2.7 J	1.6 J	0.67 U	0.62 U	0.005 U
Calcium	16000 J	17000 J	16000 J	11000 J	5300	3300	0.15 J
Chromium	20 J	22 J	26 J	18 J	15 J	16 J	0.01 U
Cobalt	9.3 J	10 J	10 J	7.1 J	6.7	7.4	0.01 U
Copper	43 J	48 J	64 J	36 J	14	14	0.02 U
Cyanide, Total	1.4 UJ	1.4 UJ	1.5 UJ	1.4 UJ	0.74 U	0.68 U	0.01 U
Iron	34000 J	37000 J	38000 J	28000 J	16000	16000	0.05 U
Lead	49 J	54 J	58 J	34 J	16	15	0.005 U
Magnesium	5500 J	5700 J	4800 J	3600 J	2900	2600	0.5 U
Manganese	1200 J	1300 J	1400 J	940 J	430 J	540 J	0.01 U
Mercury	0.091 J	0.11 J	0.16 J	0.11 J	0.025	0.023	0.0002 U
Molybdenum	0.52 J	0.47 J	0.92 J	0.37 J	0.45 J	0.58 J	0.01 U
Nickel	51 J	54 J	54 J	35 J	15	16	0.04 U
Potassium	2000 J	2300 J	2200 J	1500 J	1200 J	1200 J	1 U
Selenium	2.8 UJ	2.8 UJ	2.9 UJ	2.5 UJ	1.3 U	1.2 U	0.01 U
Silver	2.8 UJ	2.8 UJ	0.79 J	2.5 UJ	1.3 U	1.2 U	0.01 U
Sodium	200 UJ	180 UJ	230 UJ	140 UJ	92	80	0.58
Thallium	2.8 UJ	2.8 UJ	2.9 UJ	2.5 UJ	1.3 U	1.2 UJ	0.01 U
Vanadium	35 J	38 J	40 J	28 J	25	29	0.01 U
Zinc	290 J	320 J	370 J	250 J	58	59	0.02 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-6
Solutia
Sauget Area 1
Broad Scan Sediments
Method 6010B/7470A/7471A/9010B Inorganic Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0.2FTEB	SED-CSB-S1-0.2FT	SED-CSB-S1-0.2FTFD	SED-CSB-S2-0.2FT	SED-CSB-S3-0.2FT	SED-CSC-S1-0.2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	mg/kg dw	mg/l	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Aluminum	13000	0.20 U	6900 J	6200 J	8300 J	12000 J	15000 J
Antimony	2.5 UJ	0.020 U	9.2 J	8.6 J	6.3 J	6.8 J	1.8 J
Arsenic	7.8	0.010 U	35 J	31 J	38 J	25 J	28 J
Barium	140 J	0.0030 J	950 J	550 J	3300 J	1700 J	470 J
Beryllium	0.58	0.0040 U	1 UJ	0.96 UJ	1 UJ	1.2 UJ	1.2 UJ
Cadmium	0.63 U	0.0050 U	17 J	13 J	25 J	25 J	20 J
Calcium	4000	0.41 J	180000 J	180000 J	87000 J	100000 J	28000 J
Chromium	18 J	0.010 U	49 J	34 J	76 J	78 J	50 J
Cobalt	7.7	0.010 U	7.2 J	6.7 J	9.9 J	12 J	17 J
Copper	15	0.0062 J	5100 J	4600 J	11000 J	6700 J	1400 J
Cyanide, Total	0.69 U	0.010 U	1.2 UJ	1.1 UJ	1.2 UJ	1.7 UJ	1.7 UJ
Iron	18000	0.042 J	14000 J	12000 J	29000 J	25000 J	27000 J
Lead	16	0.0019 J	630 J	490 J	1000 J	750 J	270 J
Magnesium	2800	0.50 U	20000 J	20000 J	10000 J	11000 J	5500 J
Manganese	670 J	0.010 U	250 J	240 J	210 J	230 J	290 J
Mercury	0.023	0.00020 U	0.96 J	0.56 J	1.5 J	1.4 J	0.66 J
Molybdenum	0.68 J	0.010 U	7.2 J	6.8 J	4.3 J	4.8 J	3.4 J
Nickel	17	0.040 U	88 J	67 J	500 J	380 J	370 J
Potassium	1500 J	1.0 U	1700 J	1600 J	1700 J	2400 J	3000 J
Selenium	1.3 U	0.010 U	4.1 J	1.7 J	5.1 J	3.5 J	2.8 UJ
Silver	1.3 U	0.010 U	6.7 J	6.7 J	15 J	8.9 J	1.2 J
Sodium	71	0.39 J	340 UJ	310 UJ	270 UJ	290 UJ	300 UJ
Thallium	1.3 U	0.010 U	2.5 UJ	2.2 UJ	2.3 UJ	2.1 J	3.1 UJ
Vanadium	33	0.010 U	29 J	26 J	37 J	41 J	48 J
Zinc	63	0.023	2000 J	1600 J	7900 J	4800 J	2900 J

NOTES: *U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.*

O'BRIEN & GERE ENGINEERS, INC.

Table 5-6
Solutia
Sauget Area 1
Broad Scan Sediments
Method 6010B/7470A/7471A/9010B Inorganic Data

Sample ID	SED-CSC-S2-0.2FT	SED-CSC-S3-0.2FT	SED-CSD-S1-0.2FT	SED-CSD-S2-0.2FT	SED-CSD-S3-0.2FT	SED-CSE-S1-0.2FT	SED-CSE-S2-0.2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Aluminum	12000 J	9700 J	13000 J	16000 J	13000 J	15000 J	13000 J
Antimony	1.3 J	2.2 J	8.7 UJ	8.7 UJ	5.9 UJ	2.7 J	2 J
Arsenic	17 J	16 J	16 J	17 J	10 J	16 J	12 J
Barium	680 J	800 J	380 J	400 J	310 J	340 J	290 J
Beryllium	0.93 UJ	1 UJ	1.2 UJ	1.3 UJ	1 UJ	0.84 J	0.75 J
Cadmium	19 J	16 J	15 J	13 J	10 J	14 J	11 J
Calcium	23000 J	47000 J	28000 J	30000 J	26000 J	43000 J	80000 J
Chromium	93 J	47 J	56 J	60 J	67 J	71 J	49 J
Cobalt	12 J	9.7 J	12 J	12 J	8.8 J	10 J	9.2 J
Copper	2200 J	2100 J	740 J	730 J	320 J	570 J	350 J
Cyanide, Total	1.4 UJ	1.9 UJ	2.2 UJ	2.4 UJ	1.5 UJ	1.8 UJ	1.3 UJ
Iron	21000 J	24000 J	22000 J	25000 J	19000 J	24000 J	20000 J
Lead	330 J	480 J	260 J	230 J	170 J	310 J	190 J
Magnesium	3600 J	6400 J	6700 J	7500 J	6600 J	9200 J	13000 J
Manganese	240 J	330 J	250 J	320 J	270 J	310 J	320 J
Mercury	0.64 J	0.58 J	0.5 J	0.42 J	0.35 J	0.51 J	0.3 J
Molybdenum	2.2 J	1.7 UJ	3 UJ	2.6 UJ	1.7 UJ	2.6 J	1.6 J
Nickel	580 J	550 J	260 J	260 J	150 J	190 J	130 J
Potassium	2400 J	2100 J	2900 J	3200 J	2700 J	3100 J	2600 J
Selenium	13 UJ	2.4 UJ	2 UJ	2.5 UJ	2.9 UJ	2.6 UJ	1.5 UJ
Silver	1.8 J	1.6 J	4.3 UJ	4.3 UJ	2.9 UJ	1.1 J	0.67 J
Sodium	320 UJ	340 UJ	240 UJ	250 UJ	190 UJ	250 UJ	300 UJ
Thallium	2.6 UJ	3.5 UJ	4.3 UJ	4.3 UJ	2.9 UJ	1.9 J	2.6 UJ
Vanadium	36 J	34 J	44 J	51 J	37 J	51 J	40 J
Zinc	4500 J	3300 J	2500 J	2700 J	1800 J	2300 J	1800 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-6
Solutia
Sauget Area 1
Broad Scan Sediments
Method 6010B/7470A/7471A/9010B Inorganic Data

Sample ID	SED-CSE-S3-0.2FT	SED-CSF-S1-0.2FT	SED-CSF-S2-0.2FT	SED-CSF-S3-0.2FT	SED-M-S1-0.2FT	SED-RA1-S1-0.2FT	SED-RA1-S2-0.2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Aluminum	11000 J	7800 J	14000 J	17000 J	8900 J	15000 J	12000 J
Antimony	6.1 UJ	R	2.6 J	2.5 J	6.6 J	3.2 UJ	1.3 J
Arsenic	9.3 J	8 J	19 J	15 J	35 J	8	7 J
Barium	190 J	150 J	250 J	270 J	700 J	230 J	210 J
Beryllium	0.9 UJ	0.53 J	0.85 J	0.89 J	1.3 UJ	0.8	0.7 J
Cadmium	7.7 J	7.4 J	47 J	14 J	17 J	0.38 J	0.34 J
Calcium	26000 J	11000 J	13000 J	11000 J	100000 J	18000 J	12000 J
Chromium	31 J	19 J	38 J	30 J	48 J	21 J	17 J
Cobalt	7.4 J	5.5 J	13 J	11 J	15 J	9.8	7.1 J
Copper	150 J	160 J	410 J	240 J	4200 J	20 J	17 J
Cyanide, Total	1.7 UJ	1.2 UJ	2.6 UJ	1.9 UJ	2.5 UJ	0.89 U	1.4 UJ
Iron	17000 J	14000 J	22000 J	26000 J	34000 J	22000 J	19000 J
Lead	140 J	110 J	320 J	110 J	530 J	23 J	22 J
Magnesium	7400 J	4100 J	6800 J	5300 J	7400 J	6500	5000 J
Manganese	170 J	170 J	230 J	510 J	370 J	720 J	770 J
Mercury	0.3 J	0.3 J	1.1 J	0.45 J	1 J	0.042	0.063 J
Molybdenum	3.2 J	0.7 J	3.7 J	0.76 J	17 J	0.37 J	0.49 J
Nickel	51 J	90 J	390 J	180 J	190 J	23	19 J
Potassium	2400 J	1600 J	2900 J	2700 J	2000 J	2300	1900 J
Selenium	3 UJ	2.3 UJ	4.8 UJ	3.7 UJ	3.8 J	1.8 U	2.5 UJ
Silver	3 UJ	2.3 UJ	4.8 UJ	3.7 UJ	7.3 J	1.8 U	2.5 UJ
Sodium	180 UJ	210 UJ	350 UJ	230 UJ	290 UJ	150 U	180 UJ
Thallium	3 UJ	2.3 UJ	4.8 UJ	3.7 UJ	5 UJ	1.8 U	2.5 UJ
Vanadium	37 J	25 J	51 J	41 J	45 J	36	30 J
Zinc	980 J	950 J	3700 J	1600 J	2400 J	95 J	82 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-6
Solutia
Sauget Area 1
Broad Scan Sediments
Method 6010B/7470A/7471A/9010B Inorganic Data

Sample ID	SED-RA2-S1-0.2FT	SED-RA2-S1-0.2FTEB	SED-RA2-S1-0.2FTFD	SED-RA2-S2-0.2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
Units	mg/kg dw	mg/l	mg/kg dw	mg/kg dw
Compound				
Aluminum	11000 J	0.2 U	13000 J	19000 J
Antimony	1 J	0.02 U	3.8 UJ	R
Arsenic	6.5 J	0.01 U	6.9 J	7 J
Barium	160 J	0.013	170 J	220 J
Beryllium	0.6 J	0.004 U	0.64 J	1 J
Cadmium	0.26 J	0.005 U	0.32 J	0.65 J
Calcium	11000 J	24	13000 J	12000 J
Chromium	16 J	0.01 U	18 J	25 J
Cobalt	7.3 J	0.01 U	7.7 J	10 J
Copper	16 J	0.0038 J	16 J	23 J
Cyanide, Total	1 UJ	0.01 U	1 UJ	1.1 UJ
Iron	17000 J	0.05 U	18000 J	24000 J
Lead	16 J	0.005 U	17 J	26 J
Magnesium	3100 J	8	3400 J	5800 J
Manganese	560 J	0.0026 J	580 J	770 J
Mercury	0.046 J	0.0002 U	0.048 J	0.04 J
Molybdenum	0.35 J	0.01 U	0.43 J	0.53 J
Nickel	17 J	0.04 U	18 J	26 J
Potassium	1500 J	2.3	1700 J	2600 J
Selenium	1.9 UJ	0.01 U	1.9 UJ	2 UJ
Silver	1.9 UJ	0.01 U	1.9 UJ	2 UJ
Sodium	140 UJ	13	130 UJ	210 UJ
Thallium	1.9 UJ	0.01 U	1.9 UJ	2 UJ
Vanadium	28 J	0.01 U	31 J	44 J
Zinc	57 J	0.0072 J	61 J	96 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Table 3

Table 2 - 3

Sediment Toxicity Test Data

Hyalella azteca Acute Toxicity Results
Sauget Area I

Results of 10 day Hyalella azteca Acute Toxicity Tests

Survival significantly lower than lab control *P<0.05

ID	Survival (%)	Growth (mg)
Lab Control	**86**	**0.223**

None from Section F or Borrow Pit Lake

Growth Significantly lower than lab control P<0.05

ID	Survival (%)	Growth (mg)
Lab Control	**86**	**0.202**
Borrow Pit 1	89	0.156
Borrow Pit 1 Dup.	94	0.154
Borrow Pit 3	91	0.154

Survival and Growth NOT significantly lower than lab control

ID	Survival (%)	Growth (mg)
Lab Control	**86**	**0.202**
Creek Section F-1	91	0.221
Creek Section F-2	86	0.219
Creek Section F-3	83	0.183
Borrow Pit 2	96	0.172
Lab Control	**98**	**0.268**
PDC-1 (reference)	98	0.254
PDC-2 (reference)	98	0.404
Reference 2-1	98	0.393
Reference 2-2	98	0.335

Hyallela azteca 42 Day Chronic Survival, Growth, And Reproduction Results
Sauget Area I

	ID	Day 28 Mean Survival (%)	Day 28 Mean Dry Weight (mg)	Day 35 Mean Survival (%)	Day 42 Mean Survival (%)	Day 42 Mean Dry Weight (mg)	Day 42 Mean Number of Neonates/Female
Lotic, creek habitat	**PDC-1 (reference)**	**90**	**0.443**	**83**	**79**	**0.346**	**2.6**
	PDC-2 (reference)	**89**	**0.648**	**85**	**80**	**0.498**	**6.2**
	Creek Section F-1	91	0.639	89	84	0.397	4.8
	Creek Section F-2	90	0.554	74	70	0.447	3.8
	Creek Section F-3	89	0.661	85	76	0.406	4.8
	Ref-2-1 (creek portion)	70*		64	65	0.459	2.3
	*Statistically significant reduction in lotic sample response relative to reference samples PDC-1 and PDC-2; P<0.05						
Lentic, pond habitat	**Ref-2-2**	**87**	**0.458**	**85**	**83**	**0.351**	**3.4**
	Borrow Pit 1	93	0.594	88	83	0.380	4.1
	Borrow Pit 1 Dup.	89	0.636	80	75	0.423	4.2
	Borrow Pit 2	82	0.563	74	73	0.390	4.3
	Borrow Pit 3	95	0.470	86	84	0.322	5.3
	No lentic samples exhibited statistically significant reductions in response compared to PDC-1, PDC-2, or Ref-2-2.						
Laboratory Controls	12552	55	0.982	51	46	0.231	0.6
	12615	62	0.296	36	33	0.299	1.8
	12622	55	0.501	38	35	0.377	4.0
	12668	73	0.477	65	59	0.293	2.2

Note: Reference area samples were used for comparison because survival in the laboratory control samples was low.

Acute Sediment Toxicity Testing Results with *Chironomus tentans*
Sauget Area I

***Chironomus tentans* Acute Toxicity Results (Day 10)**

Survival significantly lower than lab control P<0.05			
ID	**Survival (%)**	**Growth (mg)**	**Interpretation**
Lab Control	**94**	**1.761**	
Borrow Pit 1	64	2.643	
Borrow Pit 1 Dup.	40	4.071	
Borrow Pit 2	14	0.956	Acute toxicity
Borrow Pit 3	53	2.996	
Creek Section F-1	31	2.686	Acute toxicity
Creek Section F-2	16	0.053*	Acute toxicity
Creek Section F-3	10	0.969	Acute toxicity
Lab Control	**100**	**2.065**	
PDC-1 (reference)	16	1.052*	Acute toxicity
PDC-2 (reference)	55	2.699	
Reference 2-1	13	0.346*	Acute toxicity
Reference 2-2	11	1.409	Acute toxicity

* Significant difference in growth.

Results of *Chironomus tentans* Chronic Survival, Growth, Emergence, and Reproduction Toxicity Tests
Sauget Area I

	ID	Day 20 Mean Survival (%)	Day 20 Mean Ash Weight (mg)	Emergence Proportion (%)	Mean Eggs Hatched/ Female	Mean Days Survived, Female	Mean Days Survived, Male
Lab Control	**12622**	**46**	**2.959**	**45**	**554**	**3.1**	**4.9**
	Borrow Pit 1	0*		5*	0*	0*	0.7*
	Borrow Pit 1 Dup.	0*		8*	127*	0.3*	0.8*
	Borrow Pit 3	6*		14*	106*	0.8*	1.2*
Lab Control	**12668**	**65**	**2.923**	**69**	**354**	**3.6**	**4.3**
	PDC-2 (reference)	69	3.074	13*	249	1.1*	1.4*

*Significantly different from corresponding laboratory control; $P<0.05$

Note: Samples exhibiting acute toxicity were not tested for chronic toxicity.

Table 4

Table 2 - 4

Surface Water Analytical Data

Volatile Organic Compounds

O'BRIEN & GERE ENGINEERS, INC.

Table 4-1
Solutia
Sauget Area 1
Surface Water
Method 8260B Volatile Organic Compound Data

Sample ID	SW-BPL-S1	SW-BPL-S2	SW-BPL-S3	SW-CSB-S1	SW-CSB-S2	SW-CSB-S3	SW-CSD-S1
Sample Date	10/05/99	10/05/99	10/06/99	10/05/99	10/05/99	10/04/99	10/06/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,1,1-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloropropane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone (MEK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Hexanone	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Methyl-2-pentanone (MIBK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acetone	18 J	13 J	14 J	50 U	14 J	18 J	13 J
Benzene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Bromodichloromethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromoform	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromomethane	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U
Carbon disulfide	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	5.0 U	5.0 U	5.0 U	2.8 J	5.0 U	5.0 U	5.0 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cis/Trans-1,2-Dichloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Ethylbenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene chloride (Dichloromethane)	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U
Styrene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylenes, Total	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Total VOCs	18	13	14	2.8	14	18	13

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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O'BRIEN & GERE ENGINEERS, INC.

Table 4-1
Solutia
Sauget Area 1
Surface Water
Method 8260B Volatile Organic Compound Data

Sample ID	SW-CSD-S1FD	SW-CSD-S2	SW-CSD-S3	SW-CSDEB	SW-CSE-S3	SW-CSF-S1	SW-CSF-S2
Sample Date	10/06/99	10/06/99	10/06/99	10/06/99	10/07/99	10/07/99	10/07/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,1,1-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
1,1-Dichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
1,1-Dichloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
1,2-Dichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
1,2-Dichloropropane	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
2-Butanone (MEK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Hexanone	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Methyl-2-pentanone (MIBK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acetone	10 J	11 J	17 J	50 U	50 U	50 U	50 U
Benzene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.7
Bromodichloromethane	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Bromoform	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Bromomethane	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U
Carbon disulfide	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Carbon tetrachloride	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Chlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cis/Trans-1,2-Dichloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Dibromochloromethane	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Ethylbenzene	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Methylene chloride (Dichloromethane)	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U
Styrene	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Tetrachloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Toluene	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Trichloroethene	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylenes, Total	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Total VOCs	10	11	17	ND	ND	ND	1.7

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 4-1
Solutia
Sauget Area 1
Surface Water
Method 8260B Volatile Organic Compound Data

Sample ID	SW-CSF-S3	SW-M-S1	SW-PDC-DS	SW-PDC-US	SW-PDC-USFD	SW-RA1-S1	SW-RA1-S2
Sample Date	10/07/99	10/05/99	02/04/00	02/04/00	02/04/00	10/08/99	10/08/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,1,1-Trichloroethane	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
1,1,2-Trichloroethane	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
1,1-Dichloroethane	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
1,1-Dichloroethene	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
1,2-Dichloroethane	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
1,2-Dichloropropane	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
2-Butanone (MEK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Hexanone	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Methyl-2-pentanone (MIBK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acetone	50 U	50 U	50 U	50 U	50 U	50 U	26 J
Benzene	1.2 U	1.2 U	1.2 U	1.2 U	0.3 J	1.2 U	1.2 U
Bromodichloromethane	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Bromoform	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Bromomethane	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U
Carbon disulfide	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Carbon tetrachloride	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Chlorobenzene	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cis/Trans-1,2-Dichloroethene	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Dibromochloromethane	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Ethylbenzene	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Methylene chloride (Dichloromethane)	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U
Styrene	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Tetrachloroethene	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Toluene	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Trichloroethene	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylenes, Total	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
cis-1,3-Dichloropropene	1 U	1.0 U	1 U	1 U	1 U	1.0 U	1 U
trans-1,3-Dichloropropene	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Total VOCs	ND	ND	ND	ND	0.3	ND	26

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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O'BRIEN & GERE ENGINEERS, INC.

Table 4-1
Solutia
Sauget Area 1
Surface Water
Method 8260B Volatile Organic Compound Data

Sample ID	SW-RA1-S2FD	SW-RA2-S1	SW-RA2-S2	SW-RA2EB
Sample Date	10/08/99	10/08/99	10/08/99	10/08/99
Units	ug/l	ug/l	ug/l	ug/l
Compound				
1,1,1-Trichloroethane	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5 U	5 U	5 U	5 U
2-Butanone (MEK)	25 U	25 U	25 U	25 U
2-Hexanone	25 U	25 U	25 U	25 U
4-Methyl-2-pentanone (MIBK)	25 U	25 U	25 U	25 U
Acetone	50 U	50 U	50 U	50 U
Benzene	1.2 U	1.2 U	1.2 U	1.2 U
Bromodichloromethane	5 U	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 U
Bromomethane	9.8 U	9.8 U	9.8 U	9.8 U
Carbon disulfide	5 U	5 U	5 U	5 U
Carbon tetrachloride	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U
Chloroethane	10 U	10 U	10 U	10 U
Chloroform	5 U	5 U	5 U	5 U
Chloromethane	10 U	10 U	10 U	10 U
Cis/Trans-1,2-Dichloroethene	5 U	5 U	5 U	5 U
Dibromochloromethane	5 U	5 U	5 U	5 U
Ethylbenzene	5 U	5 U	5 U	5 U
Methylene chloride (Dichloromethane)	4.7 U	4.7 U	4.7 U	4.7 U
Styrene	5 U	5 U	5 U	5 U
Tetrachloroethene	5 U	5 U	5 U	5 U
Toluene	5 U	5 U	5 U	5 U
Trichloroethene	2.7 U	2.7 U	2.7 U	2.7 U
Vinyl chloride	10 U	10 U	10 U	10 U
Xylenes, Total	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	5 U	5 U	5 U	5 U
Total VOCs	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 4-2
Solutia
Sauget Area 1
Surface Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	SW-BPL-S1	SW-BPL-S2	SW-BPL-S3	SW-CSB-S1	SW-CSB-S2	SW-CSB-S3	SW-CSD-S1
Sample Date	10/05/99	10/06/99	10/06/99	10/05/99	10/05/99	10/04/99	10/06/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	14 U	14 U	14 U	14 U	14 U	14 U	14 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol (o-cresol)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	20 U	20 U	20 U	20 U	20 U	20 U	20 U
3-Methylphenol/4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4,6-Dinitro-2-methylphenol	13 U	13 U	13 U	13 U	13 U	13 U	13 U
4-Bromophenylphenyl ether	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Chlorophenylphenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Nitrophenol	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Semivolatile Organic Compounds

O'BRIEN & GERE ENGINEERS, INC.

Table 4-2
Solutia
Sauget Area 1
Surface Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	SW-BPL-S1	SW-BPL-S2	SW-BPL-S3	SW-CSB-S1	SW-CSB-S2	SW-CSB-S3	SW-CSD-S1
Sample Date	10/05/99	10/06/99	10/06/99	10/05/99	10/05/99	10/04/99	10/06/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
Pentachlorophenol	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Total Semivolatiles	ND	ND	ND	ND	ND	ND	ND

NOTES: *U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.*

O'BRIEN & GERE ENGINEERS, INC.

Table 4-2
Solutia
Sauget Area 1
Surface Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	SW-CSD-S1FD	SW-CSD-S2	SW-CSD-S3	SW-CSDEB	SW-CSE-S3	SW-CSF-S1	SW-CSF-S2
Sample Date	10/06/99	10/06/99	10/06/99	10/06/99	10/07/99	10/07/99	10/07/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	14 U	14 U	14 U	14 U	14 U	14 U	14 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol (o-cresol)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	20 U	20 U	20 U	20 U	20 U	20 U	20 U
3-Methylphenol/4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4,6-Dinitro-2-methylphenol	13 U	13 U	13 U	13 U	13 U	13 U	13 U
4-Bromophenylphenyl ether	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Chlorophenylphenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Nitrophenol	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 4-2
Solutia
Sauget Area 1
Surface Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	SW-CSD-S1FD	SW-CSD-S2	SW-CSD-S3	SW-CSDEB	SW-CSE-S3	SW-CSF-S1	SW-CSF-S2
Sample Date	10/06/99	10/06/99	10/06/99	10/06/99	10/07/99	10/07/99	10/07/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	1.2 J	0.7 J	10 U
Fluorene	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
Pentachlorophenol	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
Phenanthrene	10 U	10 U	10 U	10 U	0.67 J	0.7 J	10 U
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	0.87 J	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Total Semivolatiles	ND	ND	ND	ND	2.74	1.4	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 4-2
Solutia
Sauget Area 1
Surface Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	SW-CSF-S3	SW-M-S1	SW-PDC-DS	SW-PDC-US	SW-PDC-USFD	SW-RA1-S1	SW-RA1-S2
Sample Date	10/07/99	10/05/99	02/04/00	02/04/00	02/04/00	10/08/99	10/08/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	14 U	14 U	14 U	14 U	14 U	14 U	14 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol (o-cresol)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	20 U	20 U	20 U	20 U	20 U	20 U	R
3-Methylphenol/4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4,6-Dinitro-2-methylphenol	13 U	13 U	13 U	13 U	13 U	13 U	13 U
4-Bromophenylphenyl ether	1 U	1.0 U	1 UJ	1 U	1 U	1.0 UJ	1 UJ
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Chlorophenylphenyl ether	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
4-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Nitrophenol	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 UJ	10 U	10 U	10 UJ	10 UJ
Benzo(a)anthracene	10 U	10 U	0.62 J	10 U	10 U	10 UJ	10 UJ
Benzo(a)pyrene	10 U	10 U	1.1 J	0.77 J	10 U	10 UJ	10 UJ
Benzo(b)fluoranthene	10 U	10 U	0.95 J	0.66 J	10 U	10 UJ	10 UJ
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Benzo(k)fluoranthene	10 U	10 U	1.7 J	0.76 J	10 U	10 UJ	10 UJ

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 4-2
Solutia
Sauget Area 1
Surface Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	SW-CSF-S3	SW-M-S1	SW-PDC-DS	SW-PDC-US	SW-PDC-USFD	SW-RA1-S1	SW-RA1-S2
Sample Date	10/07/99	10/05/99	02/04/00	02/04/00	02/04/00	10/08/99	10/08/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Carbazole	10 U	10 U	3.4 U	3.4 U	3.4 U	10 U	10 UJ
Chrysene	10 U	10 U	0.74 J	10 U	10 U	10 UJ	10 UJ
Di-n-butylphthalate	10 U	10 U	0.3 J	10 U	0.3 J	10 UJ	10 UJ
Di-n-octylphthalate	10 U	10 U	1.1 J	10 U	10 U	10 UJ	10 U
Dibenzo(a,h)anthracene	10 U	10 U	1.2 J	0.81 J	10 U	10 UJ	10 UJ
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 UJ	10 U	10 U	10 UJ	10 UJ
Fluorene	1 U	1.0 U	1 U	1 U	1 U	1.0 U	1 UJ
Hexachlorobenzene	10 U	10 U	10 UJ	10 U	10 U	10 UJ	10 UJ
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 UJ	10 U	10 U	10 UJ	10 UJ
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	5 U	5.0 U	5 U	5 U	5 U	5.0 UJ	5 UJ
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
Pentachlorophenol	5 U	5.0 U	5 U	5 U	5 U	5.0 U	5 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	1.8 U	1.8 U	0.51 J	1.2 J	0.48 J	1.8 UJ	1.8 UJ
Total Semivolatiles	ND	ND	8.22	4.2	0.78	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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O'BRIEN & GERE ENGINEERS, INC.

Table 4-2
Solutia
Sauget Area 1
Surface Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	SW-RA1-S2FD	SW-RA2-S1	SW-RA2-S2	SW-RA2EB
Sample Date	10/08/99	10/08/99	10/08/99	10/08/99
Units	ug/l	ug/l	ug/l	ug/l
Compound				
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	2.1 U	2.1 U	2.1 U	2.1 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	14 U	14 U	14 U	14 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U
2-Methylphenol (o-cresol)	10 U	10 U	10 U	10 U
2-Nitroaniline	50 U	50 U	50 U	50 U
2-Nitrophenol	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	20 U	20 U	20 U	20 U
3-Methylphenol/4-Methylphenol	10 U	10 U	10 U	10 U
3-Nitroaniline	50 U	50 U	50 U	50 U
4,6-Dinitro-2-methylphenol	13 U	13 U	13 U	13 U
4-Bromophenylphenyl ether	1 U	1 U	1 U	1 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U
4-Chloroaniline	20 U	20 U	20 U	20 U
4-Chlorophenylphenyl ether	10 U	10 U	10 U	10 U
4-Nitroaniline	50 U	50 U	50 U	50 U
4-Nitrophenol	50 U	50 U	50 U	50 U
Acenaphthene	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 4-2
Solutia
Sauget Area 1
Surface Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	SW-RA1-S2FD	SW-RA2-S1	SW-RA2-S2	SW-RA2EB
Sample Date	10/08/99	10/08/99	10/08/99	10/08/99
Units	ug/l	ug/l	ug/l	ug/l
Compound				
Butylbenzylphthalate	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U
Fluorene	1 U	1 U	1 U	1 U
Hexachlorobenzene	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U
Hexachloroethane	1.9 U	1.9 U	1.9 U	1.9 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	5 U	5 U	5 U	5 U
Naphthalene	10 U	10 U	10 U	10 U
Nitrobenzene	3.5 U	3.5 U	3.5 U	3.5 U
Pentachlorophenol	5 U	5 U	5 U	5 U
Phenanthrene	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	1.8 U	1.8 U	1.8 U	1.8 U
Total Semivolatiles	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Pesticides

O'BRIEN & GERE ENGINEERS, INC.

Table 4-4
Solutia
Sauget Area 1
Surface Water
Method 8081A Pesticide Data

Compound	Sample ID	SW-BPL-S1	SW-BPL-S2	SW-BPL-S3	SW-CSB-S1	SW-CSB-S2	SW-CSB-S3	SW-CSD-S1
	Sample Date	10/05/99	10/06/99	10/06/99	10/05/99	10/05/99	10/04/99	10/06/99
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
4,4'-DDD		0.10 U	0.10 U	0.10 U	0.0052 J	0.10 U	0.10 UJ	0.10 U
4,4'-DDE		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U
4,4'-DDT		0.10 U	0.10 U	0.10 U	0.0040 J	0.10 U	0.10 UJ	0.0023 J
Aldrin		0.050 U	0.050 U	0.050 U	0.050 U	0.0037 J	0.050 UJ	0.050 U
Alpha Chlordane		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U
Dieldrin		0.10 U	0.10 U	0.0010 J	0.0035 J	0.10 U	0.10 UJ	0.10 U
Endosulfan I		0.0024 J	0.050 U	0.0015 J	0.050 U	0.050 U	0.050 UJ	0.050 U
Endosulfan II		0.10 U	0.10 U	0.10 U	0.0053 J	0.10 U	0.10 UJ	0.0063 J
Endosulfan sulfate		0.10 U	0.10 U	0.0032 J	0.10 U	0.10 U	0.10 UJ	0.10 U
Endrin		0.10 U	0.10 U	0.00095 J	0.10 U	0.10 U	0.10 UJ	0.10 U
Endrin aldehyde		0.0032 J	0.10 U	0.0016 J	0.0025 J	0.10 U	0.10 UJ	0.10 U
Endrin ketone		0.10 U	0.10 U	0.0027 J	0.10 U	0.10 U	0.10 UJ	0.10 U
Gamma Chlordane		0.050 U	0.050 U	0.050 U	0.0027 J	0.0054 J	0.050 UJ	0.0050 J
Heptachlor		0.0026 J	0.0022 J	0.0029 J	0.050 U	0.0016 J	0.0048 J	0.013 J
Heptachlor epoxide		0.00096 J	0.00090 J	0.050 U	0.0016 J	0.0077 J	0.050 UJ	0.0080 J
Methoxychlor		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U
Toxaphene		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U
alpha-BHC		0.039 U	0.0010 J	0.00047 J	0.022 J	0.011 J	0.039 UJ	0.030 J
beta-BHC		0.0096 J	0.012 J	0.020 J	0.020 J	0.019 J	0.014 UJ	0.040 J
delta-BHC		0.00013 J	0.0022 J	0.012 U	0.015 J	0.0066 J	0.005 J	0.022 J
gamma-BHC (Lindane)		0.019 U	0.0038 J	0.0024 J	0.040 J	0.0038 J	0.019 UJ	0.086 J
Total Pesticides		0.01889	0.0221	0.03672	0.1218	0.0588	0.0098	0.2126

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 4-4
Solutia
Sauget Area 1
Surface Water
Method 8081A Pesticide Data

Sample ID	SW-CSD-S1FD	SW-CSD-S2	SW-CSD-S3	SW-CSDEB	SW-CSE-S3	SW-CSF-S1	SW-CSF-S2
Sample Date	10/06/99	10/06/99	10/06/99	10/06/99	10/07/99	10/07/99	10/07/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	0.10 U	0.0040 J	0.0071 J	0.10 U	0.1 U	0.1 U	0.1 U
Aldrin	0.0023 J	0.050 U	0.0020 J	0.0019 J	0.05 U	0.05 U	0.05 U
Alpha Chlordane	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U	0.05 U	0.05 U
Dieldrin	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.1 U	0.1 U
Endosulfan I	0.050 U	0.050 U	0.00051 J	0.050 U	0.05 U	0.05 U	0.05 U
Endosulfan II	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.1 U	0.1 U
Endosulfan sulfate	0.0056 J	0.0035 J	0.017 J	0.10 U	0.1 U	0.1 U	0.1 U
Endrin	0.0021 J	0.0054 J	0.10 U	0.10 U	0.1 U	0.1 U	0.1 U
Endrin aldehyde	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.1 U	0.1 U
Endrin ketone	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.1 U	0.1 U
Gamma Chlordane	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U	0.05 U	0.05 U
Heptachlor	0.0029 J	0.012 J	0.0064 J	0.050 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide	0.014 J	0.014 J	0.017 J	0.050 U	0.05 U	0.05 U	0.05 U
Methoxychlor	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U
Toxaphene	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5 U	5 U
alpha-BHC	0.0028 J	0.0043 J	0.0061 J	0.039 U	0.0035 J	0.039 U	0.039 U
beta-BHC	0.015 J	0.010 J	0.045 J	0.014 U	0.012 J	0.014 U	0.014 U
delta-BHC	0.0031 J	0.0037 J	0.0038 J	0.014 J	0.028	0.012 U	0.012 U
gamma-BHC (Lindane)	0.0049 J	0.010 J	0.015 J	0.019 U	0.0028 J	0.019 U	0.019 U
Total Pesticides	0.0527	0.0669	0.11991	0.0159	0.0463	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 4-4
Solutia
Sauget Area 1
Surface Water
Method 8081A Pesticide Data

Sample ID	SW-CSF-S3	SW-M-S1	SW-PDC-DS	SW-PDC-US	SW-PDC-USFD	SW-RA1-S1	SW-RA1-S2
Sample Date	10/07/99	10/05/99	02/04/00	02/04/00	02/04/00	10/08/99	10/08/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
4,4'-DDD	0.1 UJ	0.10 U	0.1 UJ	0.1 U	0.1 U	0.10 U	0.1 U
4,4'-DDE	0.1 UJ	0.0034 J	0.1 UJ	0.1 U	0.1 U	0.0015 J	0.1 UJ
4,4'-DDT	0.1 UJ	0.10 U	0.1 UJ	0.1 U	0.1 U	0.10 U	0.1 U
Aldrin	0.05 UJ	0.0014 J	0.05 UJ	0.05 U	0.05 U	0.050 U	0.05 U
Alpha Chlordane	0.05 UJ	0.050 U	0.05 UJ	0.05 U	0.05 U	0.050 U	0.05 U
Dieldrin	0.1 UJ	0.10 U	0.1 UJ	0.1 U	0.1 U	0.0021 J	0.1 U
Endosulfan I	0.05 UJ	0.050 U	0.05 UJ	0.05 U	0.05 U	0.0017 J	0.002 J
Endosulfan II	0.1 UJ	0.10 U	0.1 UJ	0.1 U	0.1 U	0.000096 J	0.1 U
Endosulfan sulfate	0.1 UJ	0.10 U	0.1 UJ	0.1 U	0.1 U	0.0070 J	0.004 J
Endrin	0.1 UJ	0.10 U	0.1 UJ	0.1 U	0.1 U	0.00048 J	0.0038 J
Endrin aldehyde	0.1 UJ	0.0025 J	0.1 UJ	0.1 U	0.1 U	0.10 U	0.0023 J
Endrin ketone	0.1 UJ	0.10 U	0.1 UJ	0.1 U	0.1 U	0.10 U	0.1 UJ
Gamma Chlordane	0.05 UJ	0.050 U	0.05 UJ	0.05 U	0.05 U	0.00082 J	0.05 U
Heptachlor	0.05 UJ	0.0035 J	0.05 UJ	0.05 U	0.05 U	0.0035 J	0.05 UJ
Heptachlor epoxide	0.05 UJ	0.0080 J	0.05 UJ	0.05 U	0.05 U	0.0058 J	0.0048 J
Methoxychlor	0.5 UJ	0.50 U	0.5 UJ	0.5 U	0.5 U	0.50 U	0.5 UJ
Toxaphene	5 UJ	5.0 U	5 UJ	5 U	5 U	5.0 U	5 U
alpha-BHC	0.039 UJ	0.00091 J	0.039 UJ	0.039 U	0.039 U	0.039 U	0.0012 J
beta-BHC	0.014 UJ	0.0027 J	0.014 UJ	0.014 U	0.014 U	0.0048 J	0.0094 J
delta-BHC	0.012 UJ	0.0035 J	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U
gamma-BHC (Lindane)	0.019 UJ	0.0036 J	0.019 UJ	0.019 U	0.019 U	0.0010 J	0.019 UJ
Total Pesticides	ND	0.02951	ND	ND	ND	0.028796	0.0275

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 4-4
Solutia
Sauget Area 1
Surface Water
Method 8081A Pesticide Data

Compound	Sample ID	SW-RA1-S2FD	SW-RA2-S1	SW-RA2-S2	SW-RA2EB
	Sample Date	10/08/99	10/08/99	10/08/99	10/08/99
	Units	ug/l	ug/l	ug/l	ug/l
4,4'-DDD		0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE		0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT		0.1 U	0.1 U	0.0057 J	0.1 U
Aldrin		0.05 U	0.004 J	0.0024 J	0.05 U
Alpha Chlordane		0.05 U	0.013 J	0.0019 J	0.05 U
Dieldrin		0.1 U	0.0036 J	0.1 U	0.1 U
Endosulfan I		0.05 U	0.011 J	0.0017 J	0.05 U
Endosulfan II		0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan sulfate		0.0042 J	0.0028 J	0.1 U	0.1 U
Endrin		0.007 J	0.1 U	0.1 U	0.1 U
Endrin aldehyde		0.1 U	0.1 U	0.1 U	0.1 U
Endrin ketone		0.1 U	0.011 J	0.0047 J	0.1 U
Gamma Chlordane		0.05 U	0.0031 J	0.05 U	0.05 U
Heptachlor		0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide		0.0046 J	0.0082 J	0.005 J	0.05 U
Methoxychlor		0.5 U	0.5 U	0.5 U	0.5 U
Toxaphene		5 U	5 U	5 U	5 U
alpha-BHC		0.0019 J	0.039 U	0.039 U	0.039 U
beta-BHC		0.014 U	0.015 J	0.015 J	0.014 U
delta-BHC		0.012 U	0.012 U	0.007 J	0.0069 J
gamma-BHC (Lindane)		0.0041 J	0.0066 J	0.0066 J	0.019 U
Total Pesticides		0.0218	0.0783	0.05	0.0069

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Herbicides

O'BRIEN & GERE ENGINEERS, INC.

Table 4-5
Solutia
Sauget Area 1
Surface Water
Method 8151A Herbicide Data

Sample ID	SW-BPL-S1	SW-BPL-S2	SW-BPL-S3	SW-CSB-S1	SW-CSB-S2	SW-CSB-S3	SW-CSD-S1
Sample Date	10/05/99	10/06/99	10/06/99	10/05/99	10/05/99	10/04/99	10/06/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
2,4,5-T	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2,4,5-TP (Silvex)	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2,4-D	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2,4-DB	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dalapon	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Dicamba	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Dichloroprop	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Dinoseb	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
MCPA	120 U	120 U	120 U	120 U	120 U	120 UJ	120 U
MCPP	120 UJ	120 U	120 U	120 UJ	120 U	120 U	120 U
Pentachlorophenol	1.0 U	1.0 U	1.0 U	1.0	1.0 U	1.0 U	1.0 U
Total Herbicides	ND	ND	ND	1	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 4-5
Solutia
Sauget Area 1
Surface Water
Method 8151A Herbicide Data

Sample ID	SW-CSD-S1FD	SW-CSD-S2	SW-CSD-S3	SW-CSDEB	SW-CSE-S3	SW-CSF-S1	SW-CSF-S2
Sample Date	10/06/99	10/06/99	10/06/99	10/06/99	10/07/99	10/07/99	10/07/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
2,4,5-T	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U
2,4,5-TP (Silvex)	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U
2,4-D	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U
2,4-DB	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U
Dalapon	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Dicamba	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Dichloroprop	6.0 U	6.0 U	6.0 U	6.0 U	6 U	6 U	6 U
Dinoseb	6.0 U	120 U	6.0 U	6.0 U	6 U	6 U	6 U
MCPA	120 U	120 U	120 U	120 U	120 U	120 U	120 UJ
MCPP	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Pentachlorophenol	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Herbicides	ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 4-5
Solutia
Sauget Area 1
Surface Water
Method 8151A Herbicide Data

Sample ID	SW-CSF-S3	SW-M-S1	SW-PDC-DS	SW-PDC-US	SW-PDC-USFD	SW-RA1-S1	SW-RA1-S2
Sample Date	10/07/99	10/05/99	02/04/00	02/04/00	02/04/00	10/08/99	10/08/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
2,4,5-T	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.5 U
2,4,5-TP (Silvex)	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.5 U
2,4-D	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.5 U
2,4-DB	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.5 U
Dalapon	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Dicamba	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Dichloroprop	6 U	6.0 U	6 U	6 U	6 U	6.0 U	6 U
Dinoseb	6 U	6.0 U	6 U	6 U	6 U	6.0 U	6 U
MCPA	120 U	120 U	120 U	120 U	120 U	120 U	120 U
MCPP	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Pentachlorophenol	1.0 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U
Total Herbicides	ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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O'BRIEN & GERE ENGINEERS, INC.

Table 4-5
Solutia
Sauget Area 1
Surface Water
Method 8151A Herbicide Data

	Sample ID	SW-RA1-S2FD	SW-RA2-S1	SW-RA2-S2	SW-RA2EB
	Sample Date	10/08/99	10/08/99	10/08/99	10/08/99
	Units	ug/l	ug/l	ug/l	ug/l
Compound					
2,4,5-T		0.5 U	0.5 U	0.5 U	0.5 U
2,4,5-TP (Silvex)		0.5 U	0.5 U	0.5 U	0.5 U
2,4-D		0.5 U	0.5 U	0.5 U	0.5 U
2,4-DB		0.5 U	0.5 U	0.5 U	0.5 U
Dalapon		120 U	120 U	120 U	120 U
Dicamba		1.2 U	1.2 U	1.2 U	1.2 U
Dichloroprop		6 U	6 U	6 U	6 U
Dinoseb		6 U	6 U	6 U	6 U
MCPA		120 U	120 U	120 U	120 U
MCPP		120 U	120 U	120 U	120 U
Pentachlorophenol		1.0 U	1.0 U	1.0 U	1.0 U
Total Herbicides		ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

PCBs

O'BRIEN & GERE ENGINEERS, INC.

Table 4-3
Solutia
Sauget Area 1
Surface Water
Method 680 Polychlorinated Biphenyl Data

	Sample ID	SW-BPL-S1	SW-BPL-S2	SW-BPL-S3	SW-CSB-S1	SW-CSB-S2	SW-CSB-S3	SW-CSD-S1
	Sample Date	10/05/99	10/06/99	10/06/99	10/05/99	10/05/99	10/04/99	10/06/99
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound								
Decachlorobiphenyl		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
Dichlorobiphenyl		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.50 U
Heptachlorobiphenyl		0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	1.5 U
Hexachlorobiphenyl		0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U
Monochlorobiphenyl		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.50 U
Nonachlorobiphenyl		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
Octachlorobiphenyl		0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	1.5 U
Pentachlorobiphenyl		0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U
Tetrachlorobiphenyl		0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U
Trichlorobiphenyl		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.50 U
Total PCBs		ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 4-3
Solutia
Sauget Area 1
Surface Water
Method 680 Polychlorinated Biphenyl Data

Sample ID	SW-CSD-S1FD	SW-CSD-S2	SW-CSD-S3	SW-CSDEB	SW-CSE-S3	SW-CSF-S1	SW-CSF-S2
Sample Date	10/06/99	10/06/99	10/06/99	10/06/99	10/07/99	10/07/99	10/07/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Decachlorobiphenyl	2.5 U	2.5 U	0.50 U	0.50 U	0.5 U	0.5 UJ	0.5 U
Dichlorobiphenyl	0.50 U	0.50 U	0.10 U	0.10 U	0.1 U	0.1 UJ	0.1 U
Heptachlorobiphenyl	1.5 U	1.5 U	0.30 U	0.30 U	0.3 U	0.3 UJ	0.3 U
Hexachlorobiphenyl	1.0 U	1.0 U	0.20 U	0.20 U	0.2 U	0.2 UJ	0.2 U
Monochlorobiphenyl	0.50 U	0.50 U	0.10 U	0.10 U	0.1 U	0.1 UJ	0.1 U
Nonachlorobiphenyl	2.5 U	2.5 U	0.50 U	0.50 U	0.5 U	0.5 UJ	0.5 U
Octachlorobiphenyl	1.5 U	1.5 U	0.30 U	0.30 U	0.3 U	0.3 UJ	0.3 U
Pentachlorobiphenyl	1.0 U	1.0 U	0.055 J	0.20 U	0.2 U	0.2 UJ	0.2 U
Tetrachlorobiphenyl	1.0 U	1.0 U	0.20 U	0.20 U	0.2 U	0.2 UJ	0.2 U
Trichlorobiphenyl	0.50 U	0.50 U	0.10 U	0.10 U	0.1 U	0.1 UJ	0.1 U
Total PCBs	ND	ND	0.055	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 4-3
Solutia
Sauget Area 1
Surface Water
Method 680 Polychlorinated Biphenyl Data

Sample ID	SW-CSF-S3	SW-M-S1	SW-PDC-DS	SW-PDC-US	SW-PDC-USFD	SW-RA1-S1	SW-RA1-S2
Sample Date	10/07/99	10/05/99	02/04/00	02/04/00	02/04/00	10/08/99	10/08/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Decachlorobiphenyl	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.5 U
Dichlorobiphenyl	0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.10 U	0.1 U
Heptachlorobiphenyl	0.3 U	0.30 U	0.3 U	0.3 U	0.3 U	0.30 U	0.3 U
Hexachlorobiphenyl	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U
Monochlorobiphenyl	0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.10 U	0.1 U
Nonachlorobiphenyl	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.5 U
Octachlorobiphenyl	0.3 U	0.30 U	0.3 U	0.3 U	0.3 U	0.30 U	0.3 U
Pentachlorobiphenyl	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U
Tetrachlorobiphenyl	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U
Trichlorobiphenyl	0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.10 U	0.1 U
Total PCBs	ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 4-3
Solutia
Sauget Area 1
Surface Water
Method 680 Polychlorinated Biphenyl Data

	Sample ID	SW-RA1-S2FD	SW-RA2-S1	SW-RA2-S2	SW-RA2EB
	Sample Date	10/08/99	10/08/99	10/08/99	10/08/99
	Units	ug/l	ug/l	ug/l	ug/l
Compound					
Decachlorobiphenyl		0.5 U	0.5 U	0.5 U	0.5 U
Dichlorobiphenyl		0.1 U	0.1 U	0.1 U	0.1 U
Heptachlorobiphenyl		0.3 U	0.3 U	0.3 U	0.3 U
Hexachlorobiphenyl		0.2 U	0.2 U	0.2 U	0.2 U
Monochlorobiphenyl		0.1 U	0.1 U	0.1 U	0.1 U
Nonachlorobiphenyl		0.5 U	0.5 U	0.5 U	0.5 U
Octachlorobiphenyl		0.3 U	0.3 U	0.3 U	0.3 U
Pentachlorobiphenyl		0.2 U	0.2 U	0.2 U	0.2 U
Tetrachlorobiphenyl		0.2 U	0.2 U	0.2 U	0.2 U
Trichlorobiphenyl		0.1 U	0.1 U	0.1 U	0.1 U
Total PCBs		ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Dioxin

O'BRIEN & GERE ENGINEERS, INC.

Table 4-7
Solutia
Sauget Area 1
Surface Water
Method 8290 PCDD/PCDF Data

Sample ID	SW-BPL-S1	SW-BPL-S2	SW-BPL-S3	SW-CSB-S1	SW-CSB-S2	SW-CSB-S3	SW-CSD-S1
Sample Date	10/05/99	10/05/99	10/06/99	10/05/99	10/05/99	10/04/99	10/06/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,3,4,6,7,8,9-OCDD	0.00143	0.000792	0.000751	0.00193	0.00422	0.00558	0.00411
1,2,3,4,6,7,8,9-OCDF	0.0000604 M	0.000071	0.0000503	0.000209	0.00107	0.00174	0.00132
1,2,3,4,6,7,8-HpCDD	0.0000569	0.0000442	0.000045 M	0.000213	0.000473	0.000637	0.000429
1,2,3,4,6,7,8-HpCDF	0.0000144	0.0000217	0.0000179	0.0000748	0.000245	0.0004	0.00033
1,2,3,4,7,8,9-HpCDF	0.0000128 U	0.0000087 U	0.0000075 U	0.0000124 U	0.0000117 U	0.0000248	0.0000109
1,2,3,4,7,8-HxCDD	0.0000088 U	0.0000058 U	0.0000055 U	0.0000091 U	0.0000095 U	0.0000032 U	0.0000073 U
1,2,3,4,7,8-HxCDF	0.0000083 U	0.0000055 U	0.0000049 U	0.0000071 U	0.0000078 U	0.0000146	0.0000053 U
1,2,3,6,7,8-HxCDD	0.0000082 U	0.0000055 U	0.0000051 U	0.0000085 U	0.0000178	0.0000241	0.0000117
1,2,3,6,7,8-HxCDF	0.0000077 U	0.0000051 U	0.0000046 U	0.0000066 U	0.0000072 U	0.0000064 M	0.0000049 U
1,2,3,7,8,9-HxCDD	0.0000085 U	0.0000057 U	0.0000053 U	0.0000088 U	0.0000092 U	0.0000185	0.0000071 U
1,2,3,7,8,9-HxCDF	0.0000092 U	0.0000061 U	0.0000054 U	0.0000079 U	0.0000086 U	0.0000032 U	0.0000059 U
1,2,3,7,8-PeCDD	0.0000087 U	0.0000055 U	0.0000053 U	0.0000085 U	0.0000095 U	0.0000033 U	0.000007 U
1,2,3,7,8-PeCDF	0.000006 U	0.0000041 U	0.0000036 U	0.0000062 U	0.0000072 U	0.0000025 U	0.0000049 U
2,3,4,6,7,8-HxCDF	0.0000082 U	0.0000054 U	0.0000048 U	0.000007 U	0.0000077 U	0.0000133 M	0.0000052 U
2,3,4,7,8-PeCDF	0.0000063 U	0.0000043 U	0.0000038 U	0.0000065 U	0.0000076 U	0.0000026 U	0.0000051 U
2,3,7,8-TCDD	0.000009 U	0.0000056 U	0.0000053 U	0.0000077 U	0.0000091 U	0.0000034 U	0.0000066 U
2,3,7,8-TCDF	0.0000088 U	0.0000049 U	0.0000047 U	0.0000076 U	0.0000087 U	0.0000115 J	0.000006 U
1998 Total TEQ w/ EMPC as ND	0.000010383	0.0000069163	0.0000062266	0.0000123139	0.0000193125	0.0000218875	0.0000163945

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 4-7
Solutia
Sauget Area 1
Surface Water
Method 8290 PCDD/PCDF Data

Sample ID	SW-CSD-S1FD	SW-CSD-S2	SW-CSD-S3	SW-CSDEB	SW-CSE-S3	SW-CSF-S1	SW-CSF-S2
Sample Date	10/06/99	10/06/99	10/06/99	10/06/99	10/07/99	10/07/99	10/07/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,3,4,6,7,8,9-OCDD	0.00392	0.00308	0.00383	0.0000062 U	0.0000604 M	0.000166 M	0.000617
1,2,3,4,6,7,8,9-OCDF	0.00118	0.00104	0.0012	0.0000041 U	0.0000164	0.0000817	0.00026
1,2,3,4,6,7,8-HpCDD	0.000406	0.00034	0.000444	0.0000021 U	0.0000119	0.0000183 M	0.0000692
1,2,3,4,6,7,8-HpCDF	0.000318	0.0000233	0.000337	0.0000012 U	0.0000042 U	0.0000134	0.0000451
1,2,3,4,7,8,9-HpCDF	0.000017	0.0000254	0.0000109 U	0.0000017 U	0.0000055 U	0.000548	0.0000041 U
1,2,3,4,7,8-HxCDD	0.0000067 U	0.0000118	0.0000079 U	0.0000014 U	0.0000044 U	0.0000047 U	0.0000036 U
1,2,3,4,7,8-HxCDF	0.0000077	0.0000127 M	0.0000067 U	0.0000009 U	0.0000039 U	0.000024	0.0000026 U
1,2,3,6,7,8-HxCDD	0.0000152	0.0000184	0.0000167	0.0000014 U	0.0000041 U	0.0000044 U	0.0000034 U
1,2,3,6,7,8-HxCDF	0.0000064	0.0000153	0.0000062 U	0.0000009 U	0.0000037 U	0.0000089	0.0000024 U
1,2,3,7,8,9-HxCDD	0.0000065 U	0.0000136	0.0000076 U	0.0000015 U	0.0000281 M	0.0000046 U	0.0000035 U
1,2,3,7,8,9-HxCDF	0.0000064 U	0.0000067 U	0.0000074 U	0.0000012 U	0.0000044 U	0.0000047 U	0.0000029 U
1,2,3,7,8-PeCDD	0.0000064 U	0.0000061 U	0.0000075 U	0.0000016 U	0.0000081 U	0.0000067 U	0.0000046 U
1,2,3,7,8-PeCDF	0.0000043 U	0.0000138	0.0000051 U	0.000001 U	0.0000046 U	0.0000043 U	0.0000026 U
2,3,4,6,7,8-HxCDF	0.0000098 M	0.0000138	0.0000066 U	0.000001 U	0.0000039 U	0.0000042 U	0.0000026 U
2,3,4,7,8-PeCDF	0.0000045 U	0.0000101	0.0000054 U	0.000001 U	0.0000049 U	0.0000045 U	0.0000028 U
2,3,7,8-TCDD	0.0000059 U	0.0000059 U	0.0000069 U	0.0000012 U	0.0000066 U	0.0000058 U	0.0000036 U
2,3,7,8-TCDF	0.0000053	0.0000056 U	0.0000058 U	0.000001 U	0.0000061 U	0.0000046 U	0.0000027 U
1998 Total TEQ w/ EMPC as ND	0.0000172825	0.000021629	0.000017675	0.0000015655	0.0000084921	0.0000149545	0.0000055012

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 4-7
Solutia
Sauget Area 1
Surface Water
Method 8290 PCDD/PCDF Data

Compound	Sample ID	SW-CSF-S3	SW-M-S1	SW-PDC-DS	SW-PDC-US	SW-PDC-USFD	SW-RA1-S1	SW-RA1-S2
	Sample Date	10/07/99	10/05/99	02/04/00	02/04/00	02/04/00	10/08/99	10/08/99
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
1,2,3,4,6,7,8,9-OCDD		0.000573	0.00413	0.00136	0.00117	0.000934 J	0.00288 J	0.00613 J
1,2,3,4,6,7,8,9-OCDF		0.00023	0.00101	0.0000129	0.0000098	0.0000133 JM	0.000123 J	0.000191 J
1,2,3,4,6,7,8-HpCDD		0.0000629	0.000429	0.0000278	0.0000218	0.0000128 J	0.0000959 J	0.000194 J
1,2,3,4,6,7,8-HpCDF		0.0000505	0.000208	0.0000027 U	0.0000043	0.0000028 UJ	0.0000237 J	0.0000441 J
1,2,3,4,7,8,9-HpCDF		0.0000048 U	0.0000105 U	0.0000035 U	0.0000017 U	0.000004 UJ	0.0000035 UJ	0.0000054 JM
1,2,3,4,7,8-HxCDD		0.0000044 U	0.000007 U	0.000003 U	0.0000038	0.0000028 UJ	0.0000028 UJ	0.0000027 UJ
1,2,3,4,7,8-HxCDF		0.0000033 U	0.0000072 U	0.0000022 U	0.0000028	0.0000023 UJ	0.0000031 JM	0.0000053 JM
1,2,3,6,7,8-HxCDD		0.0000041 U	0.0000066 U	0.0000028 U	0.0000036	0.0000026 UJ	0.0000036 JM	0.0000077 J
1,2,3,6,7,8-HxCDF		0.0000031 U	0.0000067 U	0.000002 U	0.0000025	0.0000021 UJ	0.000002 UJ	0.0000018 UJ
1,2,3,7,8,9-HxCDD		0.0000043 U	0.0000068 U	0.0000029 U	0.0000037	0.0000028 UJ	0.000003 UJ	0.0000076 J
1,2,3,7,8,9-HxCDF		0.0000037 U	0.0000079 U	0.0000024 U	0.000003	0.0000027 UJ	0.0000026 UJ	0.0000024 UJ
1,2,3,7,8-PeCDD		0.0000075 U	0.0000078 U	0.000002 U	0.0000028 M	0.0000021 UJ	0.0000036 UJ	0.0000033 UJ
1,2,3,7,8-PeCDF		0.0000039 U	0.0000057 U	0.0000014 U	0.0000031	0.0000016 UJ	0.0000019 UJ	0.0000019 UJ
2,3,4,6,7,8-HxCDF		0.0000033 U	0.000007 U	0.0000021 U	0.0000022 M	0.0000023 UJ	0.0000034 JM	0.0000051 JM
2,3,4,7,8-PeCDF		0.0000041 U	0.000006 U	0.0000015 U	0.0000025	0.0000017 UJ	0.000002 UJ	0.0000019 UJ
2,3,7,8-TCDD		0.0000062 U	0.0000075 U	0.000002 U	0.0000013 U	0.0000023 UJ	0.0000022 UJ	0.0000024 UJ
2,3,7,8-TCDF		0.0000045 U	0.0000071 U	0.0000017 U	0.0000013 U	0.000002 UJ	0.0000043 JM	0.0000076 J
1998 Total TEQ w/ EMPC as ND		0.0000076458	0.000015294	0.0000028113	0.0000053075	0.0000027511	0.0000051013	0.0000083676

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Date Printed: 08/30/00 14:35:07
DBF File: D:\25501\TEMPDATA.DBF
FXP File: D:\25501\TABLEPR.FXP

File Number 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 4-7
Solutia
Sauget Area 1
Surface Water
Method 8290 PCDD/PCDF Data

Sample ID	SW-RA1-S2FD	SW-RA2-S1	SW-RA2-S2	SW-RA2EB
Sample Date	10/08/99	10/08/99	10/08/99	10/08/99
Units	ug/l	ug/l	ug/l	ug/l
Compound				
1,2,3,4,6,7,8,9-OCDD	0.00538 J	0.0074 J	0.00299 J	0.0000688
1,2,3,4,6,7,8,9-OCDF	0.0002 J	0.0000382 JM	0.000138 J	0.0000085
1,2,3,4,6,7,8-HpCDD	0.000172 J	0.000156 J	0.000138 J	0.0000042 M
1,2,3,4,6,7,8-HpCDF	0.0000449 J	0.0000147 J	0.000038 J	0.0000012 U
1,2,3,4,7,8,9-HpCDF	0.0000184 J	0.00001 JM	0.0000101 JM	0.0000017 U
1,2,3,4,7,8-HxCDD	0.0000088 J	0.0000067 JM	0.000008 J	0.0000014 U
1,2,3,4,7,8-HxCDF	0.0000129 JM	0.0000057 JM	0.0000077 JM	0.0000009 U
1,2,3,6,7,8-HxCDD	0.0000112 JM	0.000009 J	0.0000098 J	0.0000014 U
1,2,3,6,7,8-HxCDF	0.0000089 JM	0.0000053 J	0.0000072 J	0.0000009 U
1,2,3,7,8,9-HxCDD	0.0000142 J	0.0000139 J	0.0000138 J	0.0000015 U
1,2,3,7,8,9-HxCDF	0.0000126 J	0.0000103 J	0.0000127 J	0.0000012 U
1,2,3,7,8-PeCDD	0.0000066 UJ	0.0000083 J	0.0000087 J	0.0000016 U
1,2,3,7,8-PeCDF	0.0000154 JM	0.0000071 J	0.0000068 J	0.000001 U
2,3,4,6,7,8-HxCDF	0.0000128 JM	0.0000072 JM	0.0000075 JM	0.000001 U
2,3,4,7,8-PeCDF	0.0000111 JM	0.0000059 J	0.000006 JM	0.000001 U
2,3,7,8-TCDD	0.0000064 JM	0.0000039 JM	0.0000024 UJ	0.0000012 U
2,3,7,8-TCDF	0.0000091 J	0.0000054 J	0.0000069 J	0.000001 U
1998 Total TEQ w/ EMPC as ND	0.000016131	0.0000194739	0.0000192633	0.0000015833

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Metals

O'BRIEN & GERE ENGINEERS, INC.

Table 4-6
Solutia
Sauget Area 1
Surface Water
Method 6010B/7470A/9010B Inorganic Data

Compound	Sample ID	SW-BPL-S1	SW-BPL-S2	SW-BPL-S3	SW-CSB-S1	SW-CSB-S2	SW-CSB-S3	SW-CSD-S1
	Sample Date	10/05/99	10/06/99	10/06/99	10/05/99	10/05/99	10/04/99	10/06/99
	Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Aluminum		3.4	0.71	0.65	0.041 J	0.035 J	0.066 J	0.36
Antimony		0.020 U	0.020 U	0.020 U	0.0070 J	0.020 U	0.020 U	0.020 U
Arsenic		0.015	0.0079 J	0.012	0.010 U	0.0064 J	0.0052 J	0.010 U
Barium		0.32	0.12	0.045	0.17	0.30	0.23	0.18
Beryllium		0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U
Cadmium		0.0050 U	0.0050 U	0.0050 U	0.00091 J	0.0050 U	0.0050 U	0.0050 U
Calcium		89 J	55 J	47 J	180 J	140 J	51 J	51 J
Chromium		0.0041 J	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Cobalt		0.0015 J	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Copper		0.0074 J	0.0036 J	0.0048 J	0.13	0.059	0.046	0.016 J
Cyanide, Total		0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron		8.7 J	1.6 J	1.3 J	0.076 U	0.13 U	0.43 J	1.1 J
Lead		0.020	0.0020 J	0.0029 J	0.0030 J	0.0042 J	0.0066 J	0.0083
Magnesium		30	31	26	23	17	6.0	6.7
Manganese		1.7	0.13	0.17	0.026	0.0068 J	0.034	0.056
Mercury		0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Molybdenum		0.0035 J	0.010 U	0.0040 J	0.032	0.024	0.012	0.0042 J
Nickel		0.015 J	0.012 J	0.0077 J	0.0096 J	0.013 J	0.015 J	0.018 J
Potassium		7.6	7.0	5.1	7.3	7.7	4.8	6.4
Selenium		0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Silver		0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Sodium		24 J	21 J	22 J	54 J	37 J	28 J	8.8 J
Thallium		0.010 U	0.010 U	0.010 U	0.010 UJ	0.010 U	0.010 UJ	0.010 U
Vanadium		0.014	0.0051 J	0.011	0.010 U	0.010 U	0.010 U	0.0040 J
Zinc		0.048	0.027	0.017 J	0.13	0.080	0.045	0.053

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 4-6
Solutia
Sauget Area 1
Surface Water
Method 6010B/7470A/9010B Inorganic Data

Sample ID	SW-CSD-S1FD	SW-CSD-S2	SW-CSD-S3	SW-CSDEB	SW-CSE-S3	SW-CSF-S1	SW-CSF-S2
Sample Date	10/06/99	10/06/99	10/06/99	10/06/99	10/07/99	10/07/99	10/07/99
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Compound							
Aluminum	0.32	0.33	1.4	0.20 U	0.2 U	0.039 J	0.15 J
Antimony	0.020 U	0.020 U	0.020 U	0.020 U	0.02 U	0.02 U	0.02 U
Arsenic	0.0050 J	0.010 U	0.010 U	0.010 U	0.01 U	0.01 U	0.0032 J
Barium	0.17	0.16	0.17	0.010 U	0.066	0.13	0.13
Beryllium	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.004 U	0.004 U	0.004 U
Cadmium	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.005 U	0.005 U	0.005 U
Calcium	48 J	48 J	50 J	0.29 J	44 J	53 J	52 J
Chromium	0.010 U	0.010 U	0.0057 J	0.010 U	0.01 U	0.01 U	0.01 U
Cobalt	0.010 U	0.010 U	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U
Copper	0.015 J	0.015 J	0.026	0.020 U	0.0092 J	0.0016 J	0.002 J
Cyanide, Total	0.010 U	0.010 U	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U
Iron	1.1 J	0.96 J	1.8 J	0.039 J	1.2	0.5	0.55
Lead	0.0098	0.0066	0.016	0.0050 U	0.005 U	0.005 U	0.0022 J
Magnesium	6.4	6.0	6.6	0.50 U	15	33	33
Manganese	0.053	0.046	0.082	0.010 U	0.14 J	0.082 J	0.1 J
Mercury	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	0.0053 J	0.0033 J	0.0052 J	0.010 U	0.01 U	0.01 U	0.01 U
Nickel	0.018 J	0.017 J	0.022 J	0.040 U	0.04 U	0.0069 J	0.013 J
Potassium	6.2	5.8	5.0	1.0 U	4.8	6.5	6.4
Selenium	0.010 U	0.0046 J	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U
Silver	0.010 U	0.010 U	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U
Sodium	8.4 J	8.1 J	11 J	0.58	23 J	21 J	21 J
Thallium	0.010 U	0.010 U	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U
Vanadium	0.0043 J	0.0043 J	0.0070 J	0.010 U	0.01 U	0.01 U	0.01 U
Zinc	0.050	0.050	0.15	0.020 U	0.073	0.0073 J	0.035

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 4-6
Solutia
Sauget Area 1
Surface Water
Method 6010B/7470A/9010B Inorganic Data

Sample ID	SW-CSF-S3	SW-M-S1	SW-PDC-DS	SW-PDC-US	SW-PDC-USFD	SW-RA1-S1	SW-RA1-S2
Sample Date	10/07/99	10/05/99	02/04/00	02/04/00	02/04/00	10/08/99	10/08/99
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Compound							
Aluminum	0.55	0.078 J	2.6 J	1.7 J	1.6 J	9.4	20
Antimony	0.02 U	0.020 U	0.02 U	0.02 U	0.02 U	0.020 U	0.02 U
Arsenic	0.0049 J	0.010 U	0.0051 J	0.01 U	0.01 U	0.0093 J	0.017
Barium	0.12	0.21	0.18 J	0.17 J	0.17 J	0.33	0.38
Beryllium	0.004 U	0.0040 U	0.004 U	0.004 U	0.004 U	0.00083 J	0.00069 J
Cadmium	0.005 U	0.0050 U	0.005 U	0.005 U	0.005 U	0.0050 U	0.005 U
Calcium	53 J	48 J	100 J	98 J	100 J	72 J	56 J
Chromium	0.01 U	0.010 U	0.0032 UJ	0.0018 UJ	0.0021 UJ	0.012	0.023
Cobalt	0.01 U	0.010 U	0.0019 J	0.01 U	0.0016 J	0.0047 J	0.0078 J
Copper	0.012 J	0.046	0.004 UJ	0.0032 UJ	0.004 UJ	0.0097 J	0.019 J
Cyanide, Total	0.01 U	0.010 U	0.01 U	0.01 U	0.01 U	0.010 U	0.01 U
Iron	1	1.9 J	4 J	2.6 J	2.7 J	11	26
Lead	0.0037 J	0.0070	0.0019 J	0.005 U	0.005 U	0.021	0.03
Magnesium	30	4.8	40	40	40	35	23
Manganese	0.14 J	0.17	0.63 J	0.57 J	0.58 J	1.5	1.9 J
Mercury	0.0002 U	0.00020 U	0.0002 U	0.0002 U	0.0002 U	0.00020 U	0.0002 U
Molybdenum	0.0028 J	0.010	0.0037 J	0.0033 J	0.0032 J	0.0052 J	0.0068 J
Nickel	0.021 J	0.012 J	0.005 J	0.04 U	0.04 U	0.013 J	0.025 J
Potassium	6.9	4.2	7.5	7.4	7.6	7.5	11
Selenium	0.01 U	0.010 U	0.01 U	0.01 U	0.01 U	0.010 U	0.01 U
Silver	0.01 U	0.010 U	0.01 U	0.01 U	0.01 U	0.010 U	0.01 U
Sodium	22 J	27 J	79 J	170 J	170 J	16 J	16 J
Thallium	0.01 U	0.010 U	0.01 U	0.0055 UJ	0.01 U	0.010 U	0.01 U
Vanadium	0.003 J	0.010 U	0.0075 UJ	0.0055 UJ	0.0053 UJ	0.031	0.053
Zinc	0.075	0.030	0.022	0.018 J	0.025	0.042	0.093

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 4-6
Solutia
Sauget Area 1
Surface Water
Method 6010B/7470A/9010B Inorganic Data

Compound	Sample ID	SW-RA1-S2FD	SW-RA2-S1	SW-RA2-S2	SW-RA2EB
	Sample Date	10/08/99	10/08/99	10/08/99	10/08/99
	Units	mg/l	mg/l	mg/l	mg/l
Aluminum		19	10	14	0.2 U
Antimony		0.02 U	0.02 U	0.02 U	0.02 U
Arsenic		0.017	0.017	0.015	0.01 U
Barium		0.37	0.32	0.41	0.01 U
Beryllium		0.00064 J	0.004 U	0.004 U	0.004 U
Cadmium		0.005 U	0.005 U	0.005 U	0.005 U
Calcium		57 J	50 J	56 J	0.19 J
Chromium		0.022	0.011	0.016	0.01 U
Cobalt		0.0074 J	0.005 J	0.0055 J	0.01 U
Copper		0.018 J	0.0099 J	0.011 J	0.02 U
Cyanide, Total		0.01 U	0.01 U	0.01 U	0.01 U
Iron		25	14	15	0.05 U
Lead		0.03	0.02	0.032	0.005 U
Magnesium		23	24	25	0.5 U
Manganese		1.9 J	1.6 J	2.9 J	0.01 U
Mercury		0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum		0.0063 J	0.0032 J	0.0065 J	0.01 U
Nickel		0.024 J	0.014 J	0.018 J	0.04 U
Potassium		11	8.5	7	1 U
Selenium		0.01 U	0.01 U	0.01 U	0.01 U
Silver		0.01 U	0.01 U	0.01 U	0.01 U
Sodium		16 J	21 J	23 J	0.42 J
Thallium		0.01 U	0.01 U	0.01 U	0.01 U
Vanadium		0.052	0.039	0.047	0.01 U
Zinc		0.086	0.13	0.042	0.02 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Table 5

Table 2 - 5

Groundwater Analytical Data

Domestic Well Samples

DW - MCDO - 1
DW - MCDO - 1 FD
DW - SETT - 1
DW - WRIG - 1

Site M Samples

SGW - S1 - 15 FT
SGW - S1 - 20 FT
SGW - S1 - 40 FT

TS - S1 - 0 HR
TS - S1 - 12 HR
TS - S1 -12 HR FD
TS - S1 - 24 HR

Creek Segment B Samples

SGW - S2 - 15 FT
SGW - S2 - 20 FT
SGW - S2 - 40 FT

TS - S2 - 0 HR
TS - S2 - 12 HR
TS - S2 - 24 HR

Volatile Organic Compounds

O'BRIEN & GERE ENGINEERS, INC.

Table 1-1
Solutia
Sauget Area 1
Ground Water
Method 8260B Volatile Organic Compound Data

Sample ID	BR-H	BR-I	DW-MCDO-1	DW-MCDO-1FD	DW-SCHM-1	DW-SETT-1	DW-WRIG-1
Sample Date	05/01/00	04/25/00	10/21/99	10/21/99	10/22/99	10/21/99	10/21/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,1,1-Trichloroethane	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
2-Butanone (MEK)	25 U	120 U	25 U	25 U	25 U	25 U	25 U
2-Hexanone	25 U	120 U	25 U	25 U	25 U	25 U	25 U
4-Methyl-2-pentanone (MIBK)	25 U	120 U	25 U	25 U	25 U	25 U	25 U
Acetone	100	250 U	50 U	50 U	50 U	50 U	50 U
Benzene	9.4	63	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Bromodichloromethane	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
Bromoform	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	9.8 U	49 U	9.8 UJ	9.8 UJ	9.8 U	9.8 UJ	9.8 UJ
Carbon disulfide	5.0 U	25 U	5 U	12	5 U	1.5 J	5 U
Carbon tetrachloride	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	110	240	5 U	5 U	5 U	5 U	5 U
Chloroethane	10 U	50 U	10 U	10 U	10 U	10 U	10 U
Chloroform	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
Chloromethane	10 U	50 U	10 U	10 U	10 U	10 U	10 U
Cis/Trans-1,2-Dichloroethene	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	0.98 J	390	5 U	5 U	5 U	5 U	5 U
Methylene chloride (Dichloromethane)	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U
Styrene	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5.0 U	20 J	5 U	5 U	5 U	5 U	5 U
Toluene	3.9 J	44	0.59 J	0.68 J	5 U	5 U	5 U
Trichloroethene	2.7 U	3.7 J	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Vinyl chloride	10 U	50 U	10 U	10 U	10 U	10 U	10 U
Xylenes, Total	5.0 U	36	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	1.0 U	5.0 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	5.0 U	25 U	5 U	5 U	5 U	5 U	5 U
Total VOCs	224.28	796.7	0.59	12.68	ND	1.5	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-1
Solutia
Sauget Area 1
Ground Water
Method 8260B Volatile Organic Compound Data

Sample ID	EE-01	EE-02-GP	EE-02-GPFD	EE-03	EE-05	EE-05EB	EE-12-GP
Sample Date	10/12/99	11/04/99	11/04/99	10/12/99	10/13/99	10/13/99	11/05/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,1,1-Trichloroethane	100 U	250 U	500 U	5 U	50 U	5 U	25 U
1,1,2,2-Tetrachloroethane	12 J	250 U	500 U	5 U	50 U	5 U	25 U
1,1,2-Trichloroethane	100 U	250 U	500 U	5 U	50 U	5 U	25 U
1,1-Dichloroethane	100 U	250 U	500 U	5 U	50 U	5 U	25 U
1,1-Dichloroethene	100 U	250 U	500 U	5 U	50 U	5 U	25 U
1,2-Dichloroethane	100 U	250 U	500 U	5 U	50 U	5 U	25 U
1,2-Dichloropropane	100 U	250 U	500 U	5 U	50 U	5 U	25 U
2-Butanone (MEK)	500 U	1200 U	2500 U	25 U	250 U	25 U	120 U
2-Hexanone	500 U	1200 U	2500 U	25 U	250 U	25 U	120 U
4-Methyl-2-pentanone (MIBK)	500 U	1200 U	2500 U	25 U	250 U	25 U	120 U
Acetone	1000 U	2500 U	490 J	50 U	500 U	50 U	250 U
Benzene	1500	2200	2300	1.2 U	110	1.2 U	680
Bromodichloromethane	100 U	250 U	500 U	5 U	50 U	5 U	25 U
Bromoform	100 U	250 U	500 U	5 U	50 U	5 U	25 U
Bromomethane	200 U	490 U	980 U	9.8 U	98 U	9.8 U	49 U
Carbon disulfide	100 U	250 U	500 U	5 U	50 U	5 U	25 U
Carbon tetrachloride	100 U	250 U	500 U	5 U	50 U	5 U	25 U
Chlorobenzene	1200	4100	4600	14	620	5 U	1400 D
Chloroethane	200 U	500 U	1000 U	10 U	100 U	10 U	50 U
Chloroform	100 U	410	440 J	5 U	50 U	5 U	25 U
Chloromethane	200 U	500 U	1000 U	10 U	100 U	10 U	50 U
Cis/Trans-1,2-Dichloroethene	100 U	250 U	500 U	5 U	42 J	5 U	25 U
Dibromochloromethane	100 U	250 U	500 U	5 U	50 U	5 U	25 U
Ethylbenzene	1800	250 U	500 U	5 U	50 U	5 U	4.6 J
Methylene chloride (Dichloromethane)	94 U	240 U	470 U	4.7 U	47 U	4.7 U	24 U
Styrene	100 U	250 U	500 U	5 U	50 U	5 U	25 U
Tetrachloroethene	100 U	250 U	500 U	5 U	50 U	5 U	25 U
Toluene	94 J	1500	1600	5 U	970	5 U	5 J
Trichloroethene	54 U	40 J	59 J	2.7 U	18 J	2.7 U	14 U
Vinyl chloride	200 U	500 U	1000 U	10 U	100 U	10 U	50 U
Xylenes, Total	200	250 U	500 U	5 U	50 U	5 U	14 J
cis-1,3-Dichloropropene	20 U	50 U	100 U	1 U	10 U	1 U	5 U
trans-1,3-Dichloropropene	100 U	250 U	500 U	5 U	50 U	5 U	25 U
Total VOCs	4806	8250	9489	14	1760	ND	2103.6

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-1
Solutia
Sauget Area 1
Ground Water
Method 8260B Volatile Organic Compound Data

Sample ID	EEG-112	SGW-S1-15FT	SGW-S1-20FT	SGW-S1-40FT	SGW-S1-40FTFD	SGW-S2-15FT	SGW-S2-20FT
Sample Date	10/08/99	10/14/99	10/14/99	10/14/99	10/14/99	10/15/99	10/15/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,1,1-Trichloroethane	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2,2-Tetrachloroethane	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethane	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethane	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloropropane	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone (MEK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Hexanone	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Methyl-2-pentanone (MIBK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acetone	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzene	1.9	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Bromodichloromethane	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromoform	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromomethane	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U
Carbon disulfide	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	2.8 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cis/Trans-1,2-Dichloroethene	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Ethylbenzene	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene chloride (Dichloromethane)	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U
Styrene	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylenes, Total	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,3-Dichloropropene	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Total VOCs	4.7	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-1
Solutia
Sauget Area 1
Ground Water
Method 8260B Volatile Organic Compound Data

Sample ID	SGW-S2-40FT	TS-S1-0HR	TS-S1-12HR	TS-S1-12HRFD	TS-S1-24HR	TS-S2-0HR	TS-S2-12HR
Sample Date	10/15/99	03/29/00	03/29/00	03/29/00	03/30/00	03/29/00	03/29/00
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,1,1-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloropropane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone (MEK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Hexanone	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Methyl-2-pentanone (MIBK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acetone	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Bromodichloromethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromoform	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromomethane	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U
Carbon disulfide	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cis/Trans-1,2-Dichloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Ethylbenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene chloride (Dichloromethane)	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U
Styrene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	0.64 J
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylenes, Total	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Total VOCs	ND	ND	ND	ND	ND	ND	0.64

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-1
Solutia
Sauget Area 1
Ground Water
Method 8260B Volatile Organic Compound Data

Sample ID	TS-S2-24HR	UGGW-EE-04	UGGW-EE-04-100FT	UGGW-EE-04-100FTFD	UGGW-EE-04-60FT	UGGW-EE-04FD	UGGW-EE-20
Sample Date	03/30/00	10/13/99	01/27/00	01/27/00	10/13/99	10/13/99	10/18/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,1,1-Trichloroethane	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
1,1-Dichloroethane	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
1,1-Dichloroethene	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
1,2-Dichloroethane	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
1,2-Dichloropropane	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
2-Butanone (MEK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Hexanone	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Methyl-2-pentanone (MIBK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acetone	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzene	1.2 U	1.2 U	6.4	6.7	1.2 U	1.2 U	1.2 U
Bromodichloromethane	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Bromoform	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Bromomethane	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 UJ
Carbon disulfide	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Carbon tetrachloride	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Chlorobenzene	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cis/Trans-1,2-Dichloroethene	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Dibromochloromethane	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Ethylbenzene	5.0 U	5 U	1.6 J	1.6 J	5 U	5 U	5 U
Methylene chloride (Dichloromethane)	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U
Styrene	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Tetrachloroethene	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Toluene	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Trichloroethene	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylenes, Total	5.0 U	5 U	11	11	5 U	5 U	5 U
cis-1,3-Dichloropropene	1.0 U	1 U	1.0 U	1.0 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Total VOCs	ND	ND	19	19.3	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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DBF File: D:\25501\TEMPDATA.DBF
FXP File: D:\25501\TABLEPR.FXP

File Number 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 1-1
Solutia
Sauget Area 1
Ground Water
Method 8260B Volatile Organic Compound Data

Sample ID	UGGW-EE-20-100FT	UGGW-EE-20-60FT	UGGW-EEG-108	UGGW-EEG-108-100FT	UGGW-EEG-108-60FT	UGGW-EEG-108-60FTEB	UGGW-EEG-108FD
Sample Date	01/25/00	01/24/00	10/11/99	01/31/00	01/28/00	01/28/00	10/11/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,1,1-Trichloroethane	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
1,1,2-Trichloroethane	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
1,1-Dichloroethane	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
1,1-Dichloroethene	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
1,2-Dichloroethane	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
1,2-Dichloropropane	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
2-Butanone (MEK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Hexanone	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Methyl-2-pentanone (MIBK)	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acetone	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzene	1.2 U	1.2 U	1.2 U	0.99 J	0.47 J	1.2 U	1.2 U
Bromodichloromethane	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
Bromoform	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
Bromomethane	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U
Carbon disulfide	5.0 U	5.0 U	13	5 U	5.0 U	5.0 U	5 U
Carbon tetrachloride	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
Chlorobenzene	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
Chloroethane	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Chloroform	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cis/Trans-1,2-Dichloroethene	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
Dibromochloromethane	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
Ethylbenzene	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
Methylene chloride (Dichloromethane)	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U
Styrene	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
Tetrachloroethene	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
Toluene	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
Trichloroethene	2.7 U	2.7 U	2.7 U	2.7 U	0.57 J	2.7 U	2.7 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylenes, Total	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
cis-1,3-Dichloropropene	1.0 U	1.0 U	1 U	1 U	1.0 U	1.0 U	1 U
trans-1,3-Dichloropropene	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5 U
Total VOCs	ND	ND	13	0.99	1.04	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Semivolatile Organic Compounds

O'BRIEN & GERE ENGINEERS, INC.

Table 1-2
Solutia
Sauget Area 1
Ground Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	BR-H	BR-I	DW-MCDO-1	DW-MCDO-1FD	DW-SCHM-1	DW-SETT-1	DW-WRIG-1
Sample Date	05/01/00	04/25/00	10/21/99	10/21/99	10/22/99	10/21/99	10/21/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Butylbenzylphthalate	10 U	160 J	10 U	10 U	10 U	10 U	10 U
Carbazole	3.4 U	240 J	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	740 J	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	300 J	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	180 J	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	10 U	210 J	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	1000 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	1000 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	1000 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	170 J	0.44 J	0.33 J	10 U	10 U	0.36 J
Fluorene	0.61 J	360	1 U	1 U	1 U	1 U	1 U
Hexachlorobenzene	0.35 J	90000 D	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	1000 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	1000 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	1.9 U	190 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Indeno(1,2,3-cd)pyrene	10 U	240 J	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	1000 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	1000 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	5.0 U	760	5 U	5 U	5 U	5 U	5 U
Naphthalene	7.4 J	5800	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	3.5 U	140 J	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
Pentachlorophenol	5.0 U	500 U	5 U	5 U	5 U	5 U	5 U
Phenanthrene	10 U	790 J	0.38 J	10 U	10 U	10 U	10 U
Phenol	10 U	180 J	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	540 J	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	1000 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	1000 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	1.8 U	420	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Total Semivolatiles	660.76	1271950	0.82	0.33	ND	ND	0.36

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-2
Solutia
Sauget Area 1
Ground Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	EE-01	EE-02-GP	EE-02-GPFD	EE-03	EE-05	EE-05EB	EE-12-GP
Sample Date	10/12/99	11/04/99	11/04/99	10/12/99	10/13/99	10/13/99	11/05/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,4-Trichlorobenzene	19	290	340	10 U	1.6 J	10 U	0.55 J
1,2-Dichlorobenzene	720 D	200	240	2.2 J	5.7 J	10 U	3.9 J
1,3-Dichlorobenzene	10 U	4.7 J	6.2 J	10 U	1.9 J	10 U	13
1,4-Dichlorobenzene	2200 D	550 D	720 D	21	16	10 U	96
2,2'-Oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	62	180	200	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	270	420 D	510 D	2.1 U	2.1 U	2.1 U	2.1 U
2,4-Dichlorophenol	10 U	310	430 D	0.75 J	3.1 J	10 U	10 U
2,4-Dinitrophenol	14 U	14 U	14 U	14 U	14 U	14 U	14 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	12	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	73	20	25	10 U	38	10 U	10
2-Methylnaphthalene	8 J	1.8 J	10 U	10 U	10 U	10 U	10 U
2-Methylphenol (o-cresol)	30	25	31	10 U	26	10 U	0.39 J
2-Nitroaniline	50 U	14 J	13 J	50 U	50 U	50 U	50 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	20 U	20 U	20 U	20 U	20 U	20 U	20 U
3-Methylphenol/4-Methylphenol	62	200	230	10 U	130	10 U	4.8 J
3-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4,6-Dinitro-2-methylphenol	13 U	13 U	13 U	13 U	13 U	13 U	13 U
4-Bromophenylphenyl ether	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	1800 D	690 D	860 D	20 U	1600 JD	20 U	1400 D
4-Chlorophenylphenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	50 U	50 U	50 U	50 U	8.4 J	50 U	50 U
4-Nitrophenol	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Acenaphthene	2.2 J	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-2
Solutia
Sauget Area 1
Ground Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	EEG-104	EEG-105-GP	EEG-106	EEG-107	EEG-109	EEG-110	EEG-111-GP
Sample Date	10/08/99	11/02/99	10/07/99	10/07/99	10/11/99	10/11/99	11/03/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Butylbenzylphthalate	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Fluorene	1 U	1 U	1 U	40 U	1 U	1 U	1 U
Hexachlorobenzene	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Hexachloroethane	1.9 U	1.9 U	1.9 U	76 U	1.9 U	1.9 U	1.9 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	400 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	400 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	5 U	5 U	5 U	200 U	5 U	5 U	5 U
Naphthalene	10 U	10 U	10 U	2100	28	10 U	10 U
Nitrobenzene	3.5 U	3.5 U	3.5 U	140 U	3.5 U	3.5 U	3.5 U
Pentachlorophenol	5 U	5 U	5 U	2000	5 U	5 U	5 U
Phenanthrene	10 U	10 U	10 U	400 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	14000 D	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	400 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	400 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	10 U	10 U	400 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	1.8 U	1.8 U	1.8 U	72 U	1.8 U	1.8 U	1.8 U
Total Semivolatiles	ND	ND	395.37	49290	135.5	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-2
Solutia
Sauget Area 1
Ground Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	EEG-112	SGW-S1-15FT	SGW-S1-20FT	SGW-S1-40FT	SGW-S1-40FTFD	SGW-S2-15FT	SGW-S2-20FT
Sample Date	10/08/99	10/14/99	10/14/99	10/14/99	10/14/99	10/15/99	10/15/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	14 U	14 U	14 U	14 U	14 U	14 U	14 UJ
2 4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol (o-cresol)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	20 U	20 U	20 U	20 U	20 U	20 U	20 U
3-Methylphenol/4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4,6-Dinitro-2-methylphenol	13 U	13 U	13 U	13 U	13 U	13 U	13 U
4-Bromophenylphenyl ether	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	1.1 J	20 U	20 U	20 U	20 U	20 U	20 U
4-Chlorophenylphenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Nitrophenol	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-2
Solutia
Sauget Area 1
Ground Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	EEG-112	SGW-S1-15FT	SGW-S1-20FT	SGW-S1-40FT	SGW-S1-40FTFD	SGW-S2-15FT	SGW-S2-20FT
Sample Date	10/08/99	10/14/99	10/14/99	10/14/99	10/14/99	10/15/99	10/15/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
Pentachlorophenol	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Total Semivolatiles	1.1	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-2
Solutia
Sauget Area 1
Ground Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	SGW-S2-40FT	TS-S1-0HR	TS-S1-12HR	TS-S1-12HRFD	TS-S1-24HR	TS-S2-0HR	TS-S2-12HR
Sample Date	10/15/99	03/29/00	03/29/00	03/29/00	03/30/00	03/29/00	03/29/00
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	0.39 J	0.35 J	0.32 J	10 U	10 U
2,2'-Oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	14 U	14 U	14 U	14 U	14 U	14 U	14 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol (o-cresol)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	20 U	20 U	20 U	20 U	20 U	20 U	20 U
3-Methylphenol/4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4,6-Dinitro-2-methylphenol	13 U	13 U	13 U	13 U	13 U	13 U	13 U
4-Bromophenylphenyl ether	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Chlorophenylphenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Nitrophenol	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	0.87 J	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	0.52 J	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	0.49 J	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	0.44 J	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	1.1 J	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-2
Solutia
Sauget Area 1
Ground Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	SGW-S2-40FT	TS-S1-0HR	TS-S1-12HR	TS-S1-12HRFD	TS-S1-24HR	TS-S2-0HR	TS-S2-12HR
Sample Date	10/15/99	03/29/00	03/29/00	03/29/00	03/30/00	03/29/00	03/29/00
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
Chrysene	10 U	10 U	10 U	10 U	0.70 J	10 U	10 U
Di-n-butylphthalate	10 U	10 U	0.37 J	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	1.0 U	1.0 U	1.0 U	1.0 U	1.6	1.0 U	1.0 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	0.66 J	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
Pentachlorophenol	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Total Semivolatiles	ND	ND	0.76	0.35	6.7	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-2
Solutia
Sauget Area 1
Ground Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	TS-S2-24HR	UGGW-EE-04	UGGW-EE-04-100FT	UGGW-EE-04-100FTFD	UGGW-EE-04-60FT	UGGW-EE-04FD	UGGW-EE-20
Sample Date	03/30/00	10/13/99	01/27/00	01/27/00	10/13/99	10/13/99	10/18/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	14 U	14 U	14 U	14 U	14 U	14 U	R
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol (o-cresol)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	20 U	20 U	20 U	20 U	20 U	20 U	20 U
3-Methylphenol/4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4,6-Dinitro-2-methylphenol	13 U	13 U	13 U	13 U	13 U	13 U	13 U
4-Bromophenylphenyl ether	1.0 U	1 U	1.0 U	1.0 U	1 U	1 U	1 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Chlorophenylphenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Nitrophenol	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	0.65 J	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	0.37 J	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	0.72 J	10 UJ	0.82 J	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-2
Solutia
Sauget Area 1
Ground Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	TS-S2-24HR	UGGW-EE-04	UGGW-EE-04-100FT	UGGW-EE-04-100FTFD	UGGW-EE-04-60FT	UGGW-EE-04FD	UGGW-EE-20
Sample Date	03/30/00	10/13/99	01/27/00	01/27/00	10/13/99	10/13/99	10/18/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	3.4 U	10 U	3.4 U	3.4 U	10 U	10 U	10 U
Chrysene	0.45 J	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	0.36 J
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	0.35 J
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	1.3	1 U	1.0 U	1.0 U	1 U	1 U	0.24 J
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	0.25 J
Naphthalene	10 U	10 U	100	98	10 U	10 U	10 U
Nitrobenzene	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
Pentachlorophenol	5.0 U	5 U	5.0 U	5.0 U	5 U	5 U	5 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	0.70 J	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Total Semivolatiles	4.19	ND	100.82	98	ND	ND	1.2

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-2
Solutia
Sauget Area 1
Ground Water
Method 8270C Semivolatile Organic Compound Data

Sample ID	UGGW-EE-20-100FT	UGGW-EE-20-60FT	UGGW-EEG-108	UGGW-EEG-108-100FT	UGGW-EEG-108-60FT	UGGW-EEG-108-60FTEB	UGGW-EEG-108FD
Sample Date	01/25/00	01/24/00	10/11/99	01/31/00	01/28/00	01/28/00	10/11/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	14 U	14 U	14 U	14 U	14 U	14 U	14 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol (o-cresol)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	20 U	20 U	20 U	R	20 U	20 U	20 U
3-Methylphenol/4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4,6-Dinitro-2-methylphenol	13 U	13 U	13 U	13 U	13 U	13 U	13 U
4-Bromophenylphenyl ether	1.0 U	1.0 U	1 U	1 U	1.0 U	1.0 U	1 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Chlorophenylphenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Nitrophenol	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Acenaphthene	8.0 J	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	0.97 J	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Pesticides

O'BRIEN & GERE ENGINEERS, INC.

Table 1-5
Solutia
Sauget Area 1
Ground Water
Method 8151A Herbicide Data

Sample ID	BR-H	BR-I	DW-MCDO-1	DW-MCDO-1FD	DW-SCHM-1	DW-SETT-1	DW-WRIG-1
Sample Date	05/01/00	04/25/00	10/21/99	10/21/99	10/22/99	10/21/99	10/21/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
2,4,5-T	0.50 U	16	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
2,4,5-TP (Silvex)	0.50 U	2.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U
2,4-D	0.74 J	18	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
2,4-DB	0.50 U	2.5 U	0.5 UJ	0.5 UJ	R	0.5 UJ	0.5 UJ
Dalapon	120 U	600 U	120 U	120 U	120 U	120 UJ	120 U
Dicamba	1.2 U	6.0 U	1.2 U	1.2 U	1.2 U	1.2 UJ	1.2 U
Dichloroprop	6.0 U	30 U	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ
Dinoseb	6.0 U	30 U	6 U	6 U	6 U	6 UJ	6 U
MCPA	120 U	600 U	120 UJ	120 UJ	120 U	120 UJ	120 UJ
MCPP	120 U	18000 JD	120 U	120 U	120 U	120 UJ	120 U
Pentachlorophenol	0.12 J	900 D	1 U	1 U	1 U	1 UJ	1 U
Total Herbicides	0.86	18934	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-5
Solutia
Sauget Area 1
Ground Water
Method 8151A Herbicide Data

Compound	Sample ID	EE-01	EE-02-GP	EE-02-GPFD	EE-03	EE-05	EE-05EB	EE-12-GP
	Sample Date	10/12/99	11/04/99	11/04/99	10/12/99	10/13/99	10/13/99	11/05/99
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
2,4,5-T		250 U	36 J	34 J	0.5 U	50 U	0.5 U	0.5 U
2,4,5-TP (Silvex)		250 U	120 U	120 U	0.5 U	390	0.5 U	0.45 J
2,4-D		250 U	190	170	0.5 U	50 U	0.5 U	0.5 U
2,4-DB		250 U	120 UJ	120 UJ	0.5 U	50 U	0.5 U	0.5 UJ
Dalapon		60000 U	30000 U	30000 U	120 U	12000 U	120 U	120 U
Dicamba		600 U	300 U	300 U	1.2 U	120 U	1.2 U	1.2 U
Dichloroprop		3000 U	1500 U	1500 U	6 U	600 U	6 U	6 U
Dinoseb		3000 U	1500 U	1500 U	6 U	600 U	6 U	6 U
MCPA		60000 U	30000 U	30000 U	120 U	12000 U	120 U	120 U
MCPP		60000 U	30000 U	30000 U	120 U	12000 U	120 U	120 U
Pentachlorophenol		2400	500	450	1 U	100 U	1 U	0.067 J
Total Herbicides		2400	726	654	ND	390	ND	0.517

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 1-5
Solutia
Sauget Area 1
Ground Water
Method 8151A Herbicide Data

Sample ID	TS-S2-24HR	UGGW-EE-04	UGGW-EE-04-100FT	UGGW-EE-04-100FTFD	UGGW-EE-04-60FT	UGGW-EE-04FD	UGGW-EE-20
Sample Date	03/30/00	10/13/99	01/27/00	01/27/00	10/13/99	10/13/99	10/18/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
2,4,5-T	0.50 U	0.5 U	0.50 UJ	0.50 UJ	0.5 U	0.5 U	0.21 J
2,4,5-TP (Silvex)	0.50 U	0.5 U	0.50 U	0.50 U	0.5 U	0.5 U	0.16 J
2,4-D	0.50 U	0.5 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U
2,4-DB	0.50 U	0.5 U	0.50 UJ	0.50 UJ	0.5 U	0.5 U	0.5 UJ
Dalapon	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Dicamba	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Dichloroprop	6.0 U	6 U	6.0 U	6.0 U	6 U	6 U	6 UJ
Dinoseb	6.0 U	6 U	6.0 UJ	6.0 UJ	6 U	6 U	6 U
MCPA	120 U	120 U	120 U	120 U	120 U	120 U	120 UJ
MCPP	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Pentachlorophenol	1.0 U	1 U	1.0 U	1.0 U	1 U	1 U	1 U
Total Herbicides	ND	ND	ND	ND	ND	ND	0.37

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 1-5
Solutia
Sauget Area 1
Ground Water
Method 8151A Herbicide Data

	Sample ID	UGGW-EE-20-100FT	UGGW-EE-20-60FT	UGGW-EEG-108	UGGW-EEG-108-100FT	UGGW-EEG-108-60FT	UGGW-EEG-108-60FTEB	UGGW-EEG-108FD
	Sample Date	01/25/00	01/24/00	10/11/99	01/31/00	01/28/00	01/28/00	10/11/99
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound								
2,4,5-T		0.50 U	0.50 U	0.5 U	0.5 U	0.50 UJ	0.50 U	0.5 U
2,4,5-TP (Silvex)		0.50 U	0.50 U	0.5 U	0.5 U	0.50 U	0.50 U	0.5 U
2,4-D		0.50 U	0.50 U	0.5 U	0.5 U	0.50 U	0.50 U	0.5 U
2,4-DB		0.50 U	0.50 U	0.5 U	0.5 U	0.50 UJ	0.50 U	0.5 U
Dalapon		120 U	120 U	120 U	120 U	120 U	120 U	120 U
Dicamba		1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Dichloroprop		6.0 U	6.0 U	6 U	6 U	6.0 U	6.0 U	6 U
Dinoseb		6.0 U	6.0 U	6 U	6 U	6.0 UJ	6.0 U	6 U
MCPA		120 U	120 U	120 U	120 UJ	120 UJ	120 U	120 U
MCPP		120 U	120 U	120 U	120 U	120 U	120 U	120 U
Pentachlorophenol		1.0 U	1.0 U	1 U	1 U	1.0 U	1.0 U	1 U
Total Herbicides		ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-5
Solutia
Sauget Area 1
Ground Water
Method 8151A Herbicide Data

	Sample ID	EEG-112	SGW-S1-15FT	SGW-S1-20FT	SGW-S1-40FT	SGW-S1-40FTFD	SGW-S2-15FT	SGW-S2-20FT
	Sample Date	10/08/99	10/14/99	10/14/99	10/14/99	10/14/99	10/15/99	10/15/99
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound								
2,4,5-T		0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2,4,5-TP (Silvex)		0.5 U	0.50 U	0.50 U	0.11 J	0.062 J	0.50 U	0.50 U
2,4-D		0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2,4-DB		0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.66 J	0.50 U
Dalapon		120 U	120 U	120 U	120 U	120 U	120 U	120 U
Dicamba		1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Dichloroprop		6 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Dinoseb		6 U	6.0 UJ	6.0 UJ	6.0 UJ	6.0 UJ	6.0 UJ	6.0 UJ
MCPA		120 U	120 UJ	120 UJ	120 UJ	120 UJ	120 UJ	120 UJ
MCPP		120 U	120 U	120 U	120 U	120 U	120 U	120 U
Pentachlorophenol		1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Total Herbicides		ND	ND	ND	0.11	0.062	0.66	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-5
Solutia
Sauget Area 1
Ground Water
Method 8151A Herbicide Data

Sample ID	SGW-S2-40FT	TS-S1-0HR	TS-S1-12HR	TS-S1-12HRFD	TS-S1-24HR	TS-S2-0HR	TS-S2-12HR
Sample Date	10/15/99	03/29/00	03/29/00	03/29/00	03/30/00	03/29/00	03/29/00
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
2,4,5-T	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2,4,5-TP (Silvex)	0.50 U	0.50 U	0.50 U	0.50 U	0.098 J	0.50 U	0.50 U
2,4-D	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2,4-DB	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dalapon	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Dicamba	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Dichloroprop	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Dinoseb	6.0 UJ	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
MCPA	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U
MCPP	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Pentachlorophenol	1.0 UJ	1.0 U	1.0 U	1.0 U	0.077 J	1.0 U	1.0 U
Total Herbicides	ND	ND	ND	ND	0.175	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Herbicides

PCBs

O'BRIEN & GERE ENGINEERS, INC.

Table 1-3
Solutia
Sauget Area 1
Ground Water
Method 680 Polychlorinated Biphenyl Data

Sample ID	BR-H	BR-I	DW-MCDO-1	DW-MCDO-1FD	DW-SCHM-1	DW-SETT-1	DW-WRIG-1
Sample Date	05/01/00	04/25/00	10/21/99	10/21/99	10/22/99	10/21/99	10/21/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Decachlorobiphenyl	0.50 UJ	1000 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorobiphenyl	0.10 UJ	170 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Heptachlorobiphenyl	0.30 UJ	1900 J	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Hexachlorobiphenyl	0.20 UJ	2800 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Monochlorobiphenyl	0.11 J	200 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nonachlorobiphenyl	0.50 UJ	250 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Octachlorobiphenyl	0.30 UJ	730 J	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Pentachlorobiphenyl	0.20 UJ	4800 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachlorobiphenyl	0.20 UJ	3900 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichlorobiphenyl	0.10 UJ	1200 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Total PCBs	0.11	15750	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-3
Solutia
Sauget Area 1
Ground Water
Method 680 Polychlorinated Biphenyl Data

Sample ID	EE-01	EE-02-GP	EE-02-GPFD	EE-03	EE-05	EE-05EB	EE-12-GP
Sample Date	10/12/99	11/04/99	11/04/99	10/12/99	10/13/99	10/13/99	11/05/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Decachlorobiphenyl	10 U	5 U	5 U	0.5 U	1 U	0.5 U	5 U
Dichlorobiphenyl	2 U	1 U	1 U	0.1 U	0.2 U	0.1 U	1 U
Heptachlorobiphenyl	6 U	3 U	3 U	0.3 U	0.6 U	0.3 U	3 U
Hexachlorobiphenyl	4 U	2 U	2 U	0.2 U	0.4 U	0.2 U	2 U
Monochlorobiphenyl	2 U	1 U	1 U	0.1 U	0.2 U	0.1 U	1 U
Nonachlorobiphenyl	10 U	5 U	5 U	0.5 U	1 U	0.5 U	5 U
Octachlorobiphenyl	6 U	3 U	3 U	0.3 U	0.6 U	0.3 U	3 U
Pentachlorobiphenyl	4 U	2 U	2 U	0.2 U	0.4 U	0.2 U	2 U
Tetrachlorobiphenyl	4 U	2 U	2 U	0.2 U	0.4 U	0.2 U	2 U
Trichlorobiphenyl	2 U	1 U	1 U	0.1 U	0.2 U	0.1 U	1 U
Total PCBs	ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-3
Solutia
Sauget Area 1
Ground Water
Method 680 Polychlorinated Biphenyl Data

Sample ID	EEG-112	SGW-S1-15FT	SGW-S1-20FT	SGW-S1-40FT	SGW-S1-40FTFD	SGW-S2-15FT	SGW-S2-20FT
Sample Date	10/08/99	10/14/99	10/14/99	10/14/99	10/14/99	10/15/99	10/15/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Decachlorobiphenyl	0.5 U	0.50 UJ	0.50 U	0.50 UJ	0.50 U	0.50 UJ	0.50 UJ
Dichlorobiphenyl	0.1 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ
Heptachlorobiphenyl	0.3 U	0.30 UJ	0.30 U	0.30 UJ	0.30 U	0.30 UJ	0.30 UJ
Hexachlorobiphenyl	0.2 U	0.20 UJ	0.20 U	0.20 UJ	0.20 U	0.20 UJ	0.20 UJ
Monochlorobiphenyl	0.1 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ
Nonachlorobiphenyl	0.5 U	0.50 UJ	0.50 U	0.50 UJ	0.50 U	0.50 UJ	0.50 UJ
Octachlorobiphenyl	0.3 U	0.30 UJ	0.30 U	0.30 UJ	0.30 U	0.30 UJ	0.30 UJ
Pentachlorobiphenyl	0.2 U	0.20 UJ	0.20 U	0.056 J	0.20 U	0.20 UJ	0.20 UJ
Tetrachlorobiphenyl	0.2 U	0.20 UJ	0.20 U	0.20 UJ	0.20 U	0.20 UJ	0.20 UJ
Trichlorobiphenyl	0.1 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 UJ
Total PCBs	ND	ND	ND	0.056	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-3
Solutia
Sauget Area 1
Ground Water
Method 680 Polychlorinated Biphenyl Data

Compound	Sample ID	SGW-S2-40FT	TS-S1-0HR	TS-S1-12HR	TS-S1-12HRFD	TS-S1-24HR	TS-S2-0HR	TS-S2-12HR
	Sample Date	10/15/99	03/29/00	03/29/00	03/29/00	03/30/00	03/29/00	03/29/00
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Decachlorobiphenyl		0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorobiphenyl		0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Heptachlorobiphenyl		0.30 UJ	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
Hexachlorobiphenyl		0.20 UJ	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Monochlorobiphenyl		0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nonachlorobiphenyl		0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Octachlorobiphenyl		0.30 UJ	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
Pentachlorobiphenyl		0.20 UJ	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Tetrachlorobiphenyl		0.20 UJ	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Trichlorobiphenyl		0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Total PCBs		ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-3
Solutia
Sauget Area 1
Ground Water
Method 680 Polychlorinated Biphenyl Data

	Sample ID	TS-S2-24HR	UGGW-EE-04	UGGW-EE-04-100FT	UGGW-EE-04-100FTFD	UGGW-EE-04-60FT	UGGW-EE-04FD	UGGW-EE-20
	Sample Date	03/30/00	10/13/99	01/27/00	01/27/00	10/13/99	10/13/99	10/18/99
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound								
Decachlorobiphenyl		0.50 U	0.5 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U
Dichlorobiphenyl		0.10 U	0.1 U	0.10 U	0.10 U	0.1 U	0.1 U	0.1 U
Heptachlorobiphenyl		0.30 U	0.3 U	0.30 U	0.30 U	0.3 U	0.3 U	0.3 U
Hexachlorobiphenyl		0.20 U	0.2 U	0.20 U	0.20 U	0.2 U	0.2 U	0.2 U
Monochlorobiphenyl		0.10 U	0.1 U	0.10 U	0.10 U	0.1 U	0.1 U	0.1 U
Nonachlorobiphenyl		0.50 U	0.5 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U
Octachlorobiphenyl		0.30 U	0.3 U	0.30 U	0.30 U	0.3 U	0.3 U	0.3 U
Pentachlorobiphenyl		0.20 U	0.2 U	0.20 U	0.20 U	0.2 U	0.2 U	0.2 U
Tetrachlorobiphenyl		0.20 U	0.2 U	0.20 U	0.20 U	0.2 U	0.2 U	0.2 U
Trichlorobiphenyl		0.10 U	0.1 U	0.10 U	0.10 U	0.1 U	0.1 U	0.1 U
Total PCBs		ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-3
Solutia
Sauget Area 1
Ground Water
Method 680 Polychlorinated Biphenyl Data

Sample ID	UGGW-EE-20-100FT	UGGW-EE-20-60FT	UGGW-EEG-108	UGGW-EEG-108-100FT	UGGW-EEG-108-60FT	UGGW-EEG-108-60FTEB	UGGW-EEG-108FD
Sample Date	01/25/00	01/24/00	10/11/99	01/31/00	01/28/00	01/28/00	10/11/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
Decachlorobiphenyl	0.50 U	0.50 U	0.5 U	0.5 U	0.50 U	0.50 U	0.5 U
Dichlorobiphenyl	0.10 U	0.10 U	0.1 U	0.1 U	0.10 U	0.10 U	0.1 U
Heptachlorobiphenyl	0.30 U	0.30 U	0.3 U	0.3 U	0.30 U	0.30 U	0.3 U
Hexachlorobiphenyl	0.20 U	0.20 U	0.2 U	0.2 U	0.20 U	0.20 U	0.2 U
Monochlorobiphenyl	0.10 U	0.10 U	0.1 U	0.1 U	0.10 U	0.10 U	0.1 U
Nonachlorobiphenyl	0.50 U	0.50 U	0.5 U	0.5 U	0.50 U	0.50 U	0.5 U
Octachlorobiphenyl	0.30 U	0.30 U	0.3 U	0.3 U	0.30 U	0.30 U	0.3 U
Pentachlorobiphenyl	0.20 U	0.20 U	0.2 U	0.2 U	0.20 U	0.20 U	0.2 U
Tetrachlorobiphenyl	0.20 U	0.20 U	0.2 U	0.2 U	0.20 U	0.20 U	0.2 U
Trichlorobiphenyl	0.10 U	0.10 U	0.1 U	0.1 U	0.10 U	0.10 U	0.1 U
Total PCBs	ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Dioxin

O'BRIEN & GERE ENGINEERS, INC.

Table 1-7
Solutia
Sauget Area 1
Ground Water
Method 8290 PCDD/PCDF Data

Sample ID	BR-I	DW-MCDO-1	DW-MCDO-1FD	DW-SCHM-1	DW-SETT-1	DW-WRIG-1	EE-01
Sample Date	04/25/00	10/21/99	10/21/99	10/22/99	10/21/99	10/21/99	10/12/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,3,4,6,7,8,9-OCDD	0.56075	0.0000063 M	0.0000167	0.0000131 M	0.0000081 U	0.0000073 M	0.00271
1,2,3,4,6,7,8,9-OCDF	0.21592	0.0000057 U	0.0000026 U	0.000005	0.0000057 U	0.0000034 U	0.00161
1,2,3,4,6,7,8-HpCDD	0.03732	0.0000036 U	0.0000018 M	0.0000012 U	0.0000034 U	0.0000023 U	0.00026
1,2,3,4,6,7,8-HpCDF	0.05061	0.0000018 U	0.000001 U	0.0000007 U	0.000002 U	0.0000012 U	0.000259
1,2,3,4,7,8,9-HpCDF	0.00961	0.0000027 U	0.0000015 U	0.000001 U	0.000003 U	0.0000018 U	0.000104
1,2,3,4,7,8-HxCDD	0.00196 U	0.000002 U	0.0000012 U	0.0000008 U	0.0000019 U	0.0000014 U	0.0000108 U
1,2,3,4,7,8-HxCDF	0.01713	0.0000014 U	0.0000024	0.0000015 M	0.0000015 U	0.0000014	0.000112
1,2,3,6,7,8-HxCDD	0.00172 U	0.0000019 U	0.0000012 U	0.0000008 U	0.0000018 U	0.0000013 U	0.0000205
1,2,3,6,7,8-HxCDF	0.00473	0.0000012 U	0.0000018 M	0.0000006 U	0.0000014 U	0.00000077 M	0.0000346
1,2,3,7,8,9-HxCDD	0.0018 U	0.0000021 U	0.0000025	0.0000009 U	0.000002 U	0.0000014 U	0.0000191 JM
1,2,3,7,8,9-HxCDF	0.00185 U	0.0000016 U	0.000002 M	0.0000008 U	0.0000019 U	0.0000017	0.0000206
1,2,3,7,8-PeCDD	0.0012 U	0.0000024 UJ	0.000003 JM	0.0000016 U	0.0000023 UJ	0.0000019 UJ	0.0000137 U
1,2,3,7,8-PeCDF	0.0035	0.0000015 U	0.0000009 U	0.000001 U	0.0000015 U	0.0000012 U	0.0000075 U
2,3,4,6,7,8-HxCDF	0.00442	0.0000014 U	0.0000017	0.0000006 U	0.0000016 U	0.0000009 U	0.0000258
2,3,4,7,8-PeCDF	0.00317	0.0000016 U	0.000001 U	0.0000009 U	0.0000016 U	0.0000013 U	0.000017 M
2,3,7,8-TCDD	0.000853 U	0.0000014 U	0.0000016 M	0.0000012 U	0.0000014 U	0.0000012 U	0.0000077 U
2,3,7,8-TCDF	0.000781 U	0.0000012 U	0.0000031	0.0000017 M	0.0000011 U	0.0000009 U	0.0000102
1998 Total TEQ w/ EMPC as ND	0.006873117	0.0000030186	0.0000038758	0.0000020507	0.0000029902	0.0000025756	0.0000456645

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-7
Solutia
Sauget Area 1
Ground Water
Method 8290 PCDD/PCDF Data

Sample ID	EE-02-GP	EE-02-GPEB	EE-03	EE-05	EE-05EB	EE-12-GP	EE-13-GP
Sample Date	11/04/99	11/04/99	10/12/99	10/13/99	10/13/99	11/05/99	11/04/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,3,4,6,7,8,9-OCDD	0.0000416	0.0000278	0.00421	0.18156 J	0.0000694	0.53785 J	0.02728
1,2,3,4,6,7,8,9-OCDF	0.0000024 U	0.0000089 U	0.000365	0.02243	0.0000048 M	0.30903 J	0.00198 J
1,2,3,4,6,7,8-HpCDD	0.0000022 U	0.0000076 U	0.0000954	0.00857	0.0000043 M	0.09338 J	0.00261
1,2,3,4,6,7,8-HpCDF	0.0000013 U	0.0000049 U	0.0000561	0.00341	0.0000007 U	0.06045 J	0.000332
1,2,3,4,7,8,9-HpCDF	0.000002 U	0.000007 U	0.0000015 U	0.000105	0.0000009 U	0.00401	0.0000406
1,2,3,4,7,8-HxCDD	0.0000015 U	0.0000049 U	0.0000016 U	0.000004 M	0.0000009 U	0.00023	0.0000039 U
1,2,3,4,7,8-HxCDF	0.0000025	0.0000037 U	0.0000086 M	0.0000246	0.0000006 U	0.00687	0.0000514
1,2,3,6,7,8-HxCDD	0.0000012 U	0.000004 U	0.0000014 U	0.000162	0.0000009 U	0.00205	0.0000345
1,2,3,6,7,8-HxCDF	0.0000008 U	0.0000032 U	0.0000018 M	0.0000172	0.0000005 U	0.000912	0.0000115
1,2,3,7,8,9-HxCDD	0.0000015 U	0.0000048 U	0.0000015 U	0.0000208 J	0.0000009 U	0.000821	0.0000038 U
1,2,3,7,8,9-HxCDF	0.0000011 U	0.0000056	0.0000012 U	0.0000014 U	0.0000007 U	0.0000547	0.0000034 U
1,2,3,7,8-PeCDD	0.0000014 U	0.0000045 U	0.0000017 U	0.0000068	0.0000012 U	0.000124	0.0000034 U
1,2,3,7,8-PeCDF	0.0000011 U	0.0000035 U	0.0000011 U	0.0000103 M	0.0000007 U	0.000156 JM	0.0000026 U
2,3,4,6,7,8-HxCDF	0.0000009 U	0.0000035 U	0.000001 U	0.0000314	0.0000006 U	0.000536	0.0000043 M
2,3,4,7,8-PeCDF	0.0000012 U	0.0000036 U	0.0000011 U	0.000005 M	0.0000007 U	0.000205	0.0000027 U
2,3,7,8-TCDD	0.0000012 U	0.0000042 U	0.0000011 U	0.0000039 M	0.0000007 U	0.0000032 U	0.0000032 U
2,3,7,8-TCDF	0.0000011 U	0.0000038 U	0.0000048	0.0000054 M	0.0000006 U	0.0000718	0.0000028 U
1998 Total TEQ w/ EMPC as ND	0.0000023143	0.0000073932	0.0000050175	0.0001776465	0.0000014641	0.003049638	0.000047442

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-7
Solutia
Sauget Area 1
Ground Water
Method 8290 PCDD/PCDF Data

Sample ID	SGW-S1-15FT	SGW-S1-20FT	SGW-S1-40FT	SGW-S1-40FTFD	SGW-S2-15FT	SGW-S2-20FT	SGW-S2-40FT
Sample Date	10/14/99	10/14/99	10/14/99	10/14/99	10/15/99	10/15/99	10/15/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,3,4,6,7,8,9-OCDD	0.000017 JM	0.0000168 JM	0.0398 J	0.000125 J	0.0000151 U	0.0000261	0.000114
1,2,3,4,6,7,8,9-OCDF	0.0000045 UJ	0.0000061 UJ	0.01277 J	0.0000363 J	0.0000128 U	0.00002 U	0.0000248 M
1,2,3,4,6,7,8-HpCDD	0.0000017 M	0.0000037 U	0.00432	0.0000162	0.0000098 U	0.000014 U	0.000013 U
1,2,3,4,6,7,8-HpCDF	0.0000014 U	0.0000021 U	0.00174	0.0000016 U	0.000007 U	0.0000091 U	0.0000088 U
1,2,3,4,7,8,9-HpCDF	0.0000021 U	0.0000032 U	0.0000877	0.0000024 U	0.000009 U	0.0000118 U	0.0000114 U
1,2,3,4,7,8-HxCDD	0.0000019 U	0.0000024 U	0.0000118 U	0.0000024 U	0.0000081 U	0.0000113 U	0.0000107 U
1,2,3,4,7,8-HxCDF	0.0000012 M	0.0000017 M	0.0000644	0.0000022 M	0.0000055 U	0.000007 U	0.0000072 U
1,2,3,6,7,8-HxCDD	0.0000016 U	0.0000021 U	0.000181	0.0000023 M	0.0000076 U	0.0000105 U	0.00001 U
1,2,3,6,7,8-HxCDF	0.0000009 U	0.0000013 U	0.0000184 M	0.0000019	0.0000051 U	0.0000066 U	0.0000067 U
1,2,3,7,8,9-HxCDD	0.0000019 U	0.0000025 U	0.0000407	0.0000025 U	0.0000079 U	0.0000109 U	0.0000104 U
1,2,3,7,8,9-HxCDF	0.0000012 U	0.0000025 M	0.0000088 U	0.0000018 U	0.0000061 U	0.0000078 U	0.000008 U
1,2,3,7,8-PeCDD	0.0000024 U	0.0000032 U	0.0000059 M	0.0000034 U	0.0000077 U	0.0000097 U	0.0000104 U
1,2,3,7,8-PeCDF	0.0000013 U	0.0000017 U	0.000022	0.0000021 M	0.000005 U	0.000006 U	0.0000065 U
2,3,4,6,7,8-HxCDF	0.000001 U	0.0000014 U	0.0000413	0.0000018 M	0.0000054 U	0.0000069 U	0.0000071 U
2,3,4,7,8-PeCDF	0.0000013 U	0.0000017 U	0.0000077 U	0.0000018 U	0.0000053 U	0.0000063 U	0.0000068 U
2,3,7,8-TCDD	0.0000014 U	0.000002 U	0.0000075 U	0.0000021 U	0.0000059 U	0.000007 U	0.0000075 U
2,3,7,8-TCDF	0.0000011 U	0.0000016 U	0.0000283	0.0000017 U	0.0000047 U	0.0000057 U	0.0000058 U
1998 Total TEQ w/ EMPC as ND	0.0000028246	0.0000038886	0.000113979	0.0000043756	0.0000109004	0.0000135881	0.0000142861

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-7
Solutia
Sauget Area 1
Ground Water
Method 8290 PCDD/PCDF Data

Sample ID	TS-S1-0HR	TS-S1-12HR	TS-S1-12HRFD	TS-S1-24HR	TS-S2-0HR	TS-S2-12HR	TS-S2-24HR
Sample Date	03/29/00	03/29/00	03/29/00	03/30/00	03/29/00	03/29/00	03/30/00
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
1,2,3,4,6,7,8,9-OCDD	0.000057 M	0.0000333 M	0.0000219 M	0.0000094 M	0.0000651 JM	0.0000061 M	0.0000061 U
1,2,3,4,6,7,8,9-OCDF	0.0000135 JM	0.0000099 JM	0.0000141 JM	0.0000042 U	0.0000361 JM	0.0000037 U	0.0000051 U
1,2,3,4,6,7,8-HpCDD	0.0000027 U	0.0000041 U	0.0000053	0.0000035 U	0.0000047 U	0.0000032 U	0.0000044 U
1,2,3,4,6,7,8-HpCDF	0.0000016 U	0.0000027 U	0.0000023 U	0.0000021 U	0.0000029 U	0.0000021 U	0.0000027 U
1,2,3,4,7,8,9-HpCDF	0.0000021 U	0.0000035 U	0.000003 U	0.0000028 U	0.0000038 U	0.0000027 U	0.0000035 U
1,2,3,4,7,8-HxCDD	0.0000019 U	0.0000027 U	0.0000022 U	0.0000024 U	0.0000031 U	0.0000021 U	0.0000029 U
1,2,3,4,7,8-HxCDF	0.0000027 M	0.0000021 U	0.0000017 U	0.0000029 M	0.0000024 U	0.0000017 U	0.0000023 U
1,2,3,6,7,8-HxCDD	0.0000018 U	0.0000025 U	0.0000021 U	0.0000023 U	0.0000029 U	0.000002 U	0.0000027 U
1,2,3,6,7,8-HxCDF	0.0000013 U	0.0000019 U	0.0000016 U	0.0000017 U	0.0000022 U	0.0000016 U	0.0000021 U
1,2,3,7,8,9-HxCDD	0.0000018 U	0.0000026 U	0.0000022 U	0.0000024 U	0.000003 U	0.0000021 U	0.0000028 U
1,2,3,7,8,9-HxCDF	0.0000016 U	0.0000023 U	0.0000019 U	0.000002 U	0.0000026 U	0.0000019 U	0.0000025 U
1,2,3,7,8-PeCDD	0.0000017 U	0.0000024 U	0.0000056	0.0000025 U	0.0000027 U	0.0000019 U	0.0000027 U
1,2,3,7,8-PeCDF	0.0000034 M	0.0000018 U	0.0000015 U	0.0000017 U	0.000002 U	0.0000015 U	0.000002 U
2,3,4,6,7,8-HxCDF	0.0000014 U	0.000002 U	0.0000017 U	0.0000018 U	0.0000023 U	0.0000017 U	0.0000022 U
2,3,4,7,8-PeCDF	0.0000013 U	0.0000019 U	0.0000015 U	0.0000018 U	0.0000021 U	0.0000015 U	0.0000021 U
2,3,7,8-TCDD	0.0000015 U	0.000002 U	0.0000095	0.000002 U	0.0000024 U	0.0000017 U	0.0000023 U
2,3,7,8-TCDF	0.0000014 U	0.0000018 U	0.0000016 U	0.0000018 U	0.000002 U	0.0000015 U	0.000002 U
1998 Total TEQ w/ EMPC as ND	0.0000027406	0.0000036687	0.0000163438	0.0000036502	0.0000042121	0.000002983	0.0000041036

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Metals

O'BRIEN & GERE ENGINEERS, INC.

Table 1-6
Solutia
Sauget Area 1
Ground Water
Method 6010B/7470A/9010B Inorganic Data

Sample ID	BR-H	BR-I	DW-MCDO-1	DW-MCDO-1FD	DW-SCHM-1	DW-SETT-1	DW-WRIG-1
Sample Date	05/01/00	04/25/00	10/21/99	10/21/99	10/22/99	10/21/99	10/21/99
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Compound							
Aluminum	0.040 J	0.091 J	0.06 UJ	0.064 UJ	0.2 U	0.061 UJ	0.06 UJ
Antimony	0.020 U	0.020 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Arsenic	0.0059 J	0.010 U	0.027	0.031	0.0064 J	0.01 U	0.01 U
Barium	0.054	0.093	0.26	0.27	0.22	0.18	0.13
Beryllium	0.0040 U	0.0040 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Cadmium	0.0050 U	0.0050 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 J
Calcium	470 J	32 J	100 J	100 J	170	180 J	150 J
Chromium	0.010 UJ	0.014 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Cobalt	0.0057 J	0.010 U	0.01 U	0.01 U	0.01 U	0.003 J	0.0041 J
Copper	0.020 U	0.011 J	0.01 J	0.027	0.0028 J	0.0026 J	0.0011 J
Cyanide, Total	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Iron	23 J	0.24 J	9.2	11	17 J	2.4	1.9
Lead	0.0020 J	0.0052	0.077 J	0.18 J	0.005 U	0.0027 J	0.015 J
Magnesium	84	46	22	22	39	41	38
Manganese	2.9 J	0.0027 J	0.57	0.58	1.2	0.86	1.1
Mercury	0.00020 U	0.00020 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	0.0043 J	0.0052 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Nickel	9.6	0.039 J	0.04 U	0.04 U	0.04 U	0.0062 J	0.053
Potassium	14	17 J	4	4.1	6.8	5.7	5.7
Selenium	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Silver	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Sodium	40 J	93 J	9.5	9.6	22	24	29
Thallium	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vanadium	0.010 U	0.0036 J	0.01 U	0.0025 J	0.01 U	0.01 U	0.01 U
Zinc	0.025 J	0.0092 J	2.3 J	5.8 J	0.12	0.075 J	0.95 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Date Printed: 08/30/00 15:21:44
DBF File: D:\25501\TEMPDATA.DBF
FXP File: D:\25501\TABLEPR.FXP

File Number 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 1-6
Solutia
Sauget Area 1
Ground Water
Method 6010B/7470A/9010B Inorganic Data

Sample ID	EE-01	EE-02-GP	EE-02-GPFD	EE-03	EE-05	EE-05EB	EE-12-GP
Sample Date	10/12/99	11/04/99	11/04/99	10/12/99	10/13/99	10/13/99	11/05/99
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Compound							
Aluminum	0.3 J	0.18 UJ	0.17 UJ	0.082 UJ	0.2 U	0.2 U	4.9 J
Antimony	0.02 U	0.11	0.1	0.02 U	0.02 U	0.02 U	0.02 U
Arsenic	0.037	1.2	1.3	0.028	0.045	0.01 U	0.0097 J
Barium	0.57 J	0.071 J	0.056 J	0.13 J	0.4	0.01 U	0.92 J
Beryllium	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Cadmium	0.0022 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.00096 J
Calcium	330	710	730	260	270 J	0.32 J	480
Chromium	0.0042 J	0.003 J	0.003 J	0.01 UJ	0.01 UJ	0.01 U	0.0073 J
Cobalt	0.13	0.037	0.042	0.01 U	0.007 J	0.01 U	0.0028 J
Copper	0.018 J	0.0072 J	0.0054 J	0.02 U	0.001 UJ	0.02 U	0.01 J
Cyanide, Total	0.01 U	0.018	0.018	0.01 U	0.01 U	0.01 U	0.01 U
Iron	77 J	23 J	25 J	36 J	46 J	0.05 U	62 J
Lead	0.005 U	0.0085 U	0.0071 U	0.005 U	0.005 U	0.005 U	0.0092 U
Magnesium	60	39	40	79	52	0.5 U	110
Manganese	1.6 J	8.7 J	8.9 J	1.4 J	1.1	0.01 U	6.8 J
Mercury	0.0002 U	0.000087 J	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.00013 J
Molybdenum	0.01 U	0.0057 J	0.0052 J	0.01 U	0.45	0.01 U	0.01 U
Nickel	0.67	0.4	0.46	0.0054 J	0.0059 J	0.04 U	0.0095 J
Potassium	27	26	26	12	3.5	1 U	26
Selenium	0.01 U	0.0077 J	0.0066 J	0.01 U	0.01 U	0.01 U	0.01 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Sodium	51	32	33	98	59	0.54	240
Thallium	0.006 UJ	0.01 U	0.0051 J	0.01 U	0.01 U	0.01 U	0.01 U
Vanadium	0.012 U	0.0036 J	0.0034 J	0.01 U	0.0037 J	0.01 U	0.022
Zinc	0.48	0.057 J	0.064 J	0.02 U	0.02 U	0.02 U	0.12 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-6
Solutia
Sauget Area 1
Ground Water
Method 6010B/7470A/9010B Inorganic Data

Sample ID	EEG-112	SGW-S1-15FT	SGW-S1-20FT	SGW-S1-40FT	SGW-S1-40FTFD	SGW-S2-15FT	SGW-S2-20FT
Sample Date	10/08/99	10/14/99	10/14/99	10/14/99	10/14/99	10/15/99	10/15/99
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Compound							
Aluminum	0.2 U	4.0 J	0.70 J	17 J	7.3 J	3.2 J	4.6 J
Antimony	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	0.055 J	0.013 J	0.044 J	0.023 J	0.012 J	0.010 UJ	0.0047 J
Barium	0.34 J	0.54 J	0.25 J	0.55 J	0.35 J	0.43 J	0.38 J
Beryllium	0.004 U	0.0040 U	0.0040 U	0.0011 J	0.0040 U	0.0040 U	0.0040 U
Cadmium	0.005 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Calcium	100	130 J	80 J	130 J	100 J	140 J	170 J
Chromium	0.01 UJ	0.018 J	0.0044 J	0.082 J	0.030 J	0.0092 J	0.011 J
Cobalt	0.01 U	0.012 J	0.0042 J	0.020 J	0.0091 J	0.0072 J	0.010 J
Copper	0.02 U	0.011 J	0.0021 J	0.056 J	0.030 J	0.0047 J	0.0059 J
Cyanide, Total	0.01 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	27	12 J	7.6 J	42 J	18 J	6.7 J	8.4 J
Lead	0.005 U	0.015 J	0.0034 J	0.036 J	0.015 J	0.0047 J	0.0045 J
Magnesium	23	14 J	8.8 J	28 J	22 J	27 J	27 J
Manganese	1.1 J	1.7 J	0.85 J	1.4 J	1.0 J	0.35 J	1.2 J
Mercury	0.0002 U	0.00020 U	0.00020 U	0.00020 U	0.00038	0.00020 U	0.00020 U
Molybdenum	0.0031 J	0.0029 J	0.0092 J	0.013	0.0064 J	0.010 U	0.0067 J
Nickel	0.04 U	0.027 J	0.010 J	0.059	0.027 J	0.016 J	0.022 J
Potassium	6.3	16 J	6.4 J	9.1	6.2 J	5.6 J	4.8 J
Selenium	0.01 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Silver	0.01 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Sodium	58	13	15	19	19	18	19
Thallium	0.01 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Vanadium	0.01 U	0.014 J	0.0038 J	0.057 J	0.023 J	0.011 J	0.014 J
Zinc	0.02 U	0.051 J	0.012 J	0.17 J	0.061 J	0.026 J	0.030 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-6
Solutia
Sauget Area 1
Ground Water
Method 6010B/7470A/9010B Inorganic Data

Sample ID	SGW-S2-40FT	TS-S1-0HR	TS-S1-12HR	TS-S1-12HRFD	TS-S1-24HR	TS-S2-0HR	TS-S2-12HR
Sample Date	10/15/99	03/29/00	03/29/00	03/29/00	03/30/00	03/29/00	03/29/00
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Compound							
Aluminum	2.0 J	4.3 J	0.20 U	0.028 UJ	0.20 U	1.5 J	0.051 UJ
Antimony	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	0.010 UJ	0.011	0.012	0.0095 J	0.013	0.0085 J	0.0071 J
Barium	0.23 J	0.43 J	0.27 J	0.28 J	0.27 J	0.29 J	0.23 J
Beryllium	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U
Cadmium	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Calcium	160 J	180	150	150	150	150	150
Chromium	0.0072 J	0.0097 J	0.010 U	0.010 U	0.010 U	0.0033 J	0.010 U
Cobalt	0.0095 J	0.014	0.0025 J	0.0023 J	0.0022 J	0.0023 J	0.010 U
Copper	0.0041 J	0.0068 UJ	0.020 U	0.020 U	0.020 U	0.0024 UJ	0.020 U
Cyanide, Total	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	5.2 J	14	5.6	5.5	5.4	8.7	6.9
Lead	0.0053 J	0.014	0.0050 U	0.0050 U	0.0050 U	0.0022 J	0.0050 U
Magnesium	36 J	39	29	29	29	30	29
Manganese	1.6 J	1.7 J	1.4 J	1.4 J	1.4 J	1.5 J	1.5 J
Mercury	0.00020 U	0.000091 J	0.000079 J	0.000086 J	0.000088 J	0.000094 J	0.00020 UJ
Molybdenum	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Nickel	0.017 J	0.034 J	0.0048 J	0.040 U	0.040 U	0.0048 J	0.040 U
Potassium	7.8 J	6.2	4.8	4.9	4.7	7.2	6.6
Selenium	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Silver	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Sodium	26	17	17	17	17	24	24
Thallium	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Vanadium	0.0069 J	0.012	0.010 U	0.010 U	0.010 U	0.0038 J	0.010 U
Zinc	0.017 J	0.049	0.020 U	0.020 U	0.013 J	0.016 J	0.020 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-6
Solutia
Sauget Area 1
Ground Water
Method 6010B/7470A/9010B Inorganic Data

Sample ID	TS-S2-24HR	UGGW-EE-04	UGGW-EE-04-100FT	UGGW-EE-04-100FTFD	UGGW-EE-04-60FT	UGGW-EE-04FD	UGGW-EE-20
Sample Date	03/30/00	10/13/99	01/27/00	01/27/00	10/13/99	10/13/99	10/18/99
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Compound							
Aluminum	0.20 U	0.2 U	0.38 J	0.84 J	24	0.2 U	0.1 UJ
Antimony	0.020 U	0.02 U	0.020 U	0.020 U	0.02 U	0.02 U	0.02 U
Arsenic	0.0072 J	0.01 U	0.010 U	0.010 U	0.014	0.01 U	0.01 U
Barium	0.22 J	0.27	0.65 J	0.70 J	0.97	0.27	0.11
Beryllium	0.0040 U	0.004 U	0.0040 U	0.0040 U	0.00097 J	0.004 U	0.004 U
Cadmium	0.0050 U	0.005 U	0.0050 U	0.0050 U	0.005 U	0.005 U	0.005 U
Calcium	140	330 J	120 J	120 J	180 J	330 J	100
Chromium	0.010 U	0.14 J	0.0051 J	0.0084 J	0.18 J	0.11 J	0.01 UJ
Cobalt	0.010 U	0.0072 J	0.010 U	0.010 U	0.018	0.0071 J	0.01 U
Copper	0.020 U	0.003 UJ	0.0023 J	0.0012 J	0.036 J	0.0029 UJ	0.02 U
Cyanide, Total	0.010 U	0.01 U	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U
Iron	6.8	1 J	8.4 J	9.9 J	57 J	0.8 J	0.073 J
Lead	0.0050 U	0.005 U	0.0050 U	0.0050 U	0.021	0.005 U	0.005 U
Magnesium	28	62	40	39	51	62	23
Manganese	1.4 J	1.2	0.32	0.35	1.2	1.2	0.074
Mercury	0.00010 J	0.0002 U	0.00020 UJ	0.00020 UJ	0.0002 U	0.0002 U	0.0002 U
Molybdenum	0.010 U	0.01 U	0.0035 J	0.0062 J	0.028	0.01 U	0.01 U
Nickel	0.040 U	0.17	0.040 U	0.0057 J	0.062	0.18	0.007 J
Potassium	6.3	170	4.3	4.5	12	170	2.5
Selenium	0.010 U	0.01 U	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U
Silver	0.010 U	0.01 U	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U
Sodium	23	100	26 J	25 J	27	100	8.5
Thallium	0.010 U	0.01 U	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U
Vanadium	0.010 U	0.01 U	0.010 U	0.0027 J	0.054	0.01 U	0.01 U
Zinc	0.020 U	0.02 U	0.042 J	0.083 J	0.077	0.02 U	0.02 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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FXP File: D:\25501\TABLEPR.FXP

File Number 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 1-6
Solutia
Sauget Area 1
Ground Water
Method 6010B/7470A/9010B Inorganic Data

Sample ID	UGGW-EE-20-100FT	UGGW-EE-20-60FT	UGGW-EEG-108	UGGW-EEG-108-100FT	UGGW-EEG-108-60FT	UGGW-EEG-108-60FTEB	UGGW-EEG-108FD
Sample Date	01/25/00	01/24/00	10/11/99	01/31/00	01/28/00	01/28/00	10/11/99
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Compound							
Aluminum	17 J	0.46 J	0.041 UJ	5.4 J	2.4 J	0.20 U	0.044 UJ
Antimony	0.020 U	0.020 U	0.02 U	0.02 U	0.020 U	0.020 U	0.02 U
Arsenic	0.016	0.010 U	0.0084 J	0.0038 J	0.010 U	0.010 U	0.0067 J
Barium	0.77 J	0.37 J	0.55 J	0.86	0.34 J	0.010 U	0.54 J
Beryllium	0.00096 J	0.0040 U	0.004 U	0.004 U	0.0040 U	0.0040 U	0.004 U
Cadmium	0.0050 U	0.0050 U	0.005 U	0.005 U	0.0050 U	0.0050 U	0.005 U
Calcium	190 J	130 J	210	140 J	140 J	0.18 J	210
Chromium	0.17	0.0029 J	0.04 J	0.028	0.0055 J	0.010 U	0.014 J
Cobalt	0.015	0.010 U	0.01 U	0.0047 J	0.010 U	0.010 U	0.01 U
Copper	0.052	0.0014 J	0.02 U	0.0095 J	0.0023 J	0.020 U	0.02 U
Cyanide, Total	0.010 U	0.010 U	0.01 U	0.01 U	0.010 U	0.010 U	0.01 U
Iron	80 J	12 J	32 J	20 J	20 J	0.021 J	32 J
Lead	0.022	0.0050 U	0.005 U	0.0061	0.0050 U	0.0050 U	0.005 U
Magnesium	53	32	54	41	35	0.50 U	53
Manganese	1.6	1.2	1.3 J	0.58	0.62	0.010 U	1.4 J
Mercury	0.00020 UJ	0.00020 UJ	0.0002 U	0.0002 U	0.00020 UJ	0.00020 UJ	0.0002 U
Molybdenum	0.049	0.0028 J	0.01 U	0.0067 J	0.010 U	0.010 U	0.01 U
Nickel	0.056	0.040 U	0.0051 J	0.013 J	0.010 J	0.040 U	0.04 U
Potassium	12	6.0	12	6.4	6.6	1.0 U	12
Selenium	0.010 U	0.010 U	0.01 U	0.01 U	0.010 U	0.010 U	0.01 U
Silver	0.010 U	0.010 U	0.01 U	0.01 U	0.010 U	0.010 U	0.01 U
Sodium	30 J	20 J	85	18 J	25 J	0.55	89
Thallium	0.010 U	0.010 U	0.01 U	0.01 U	0.010 U	0.010 U	0.01 U
Vanadium	0.050	0.0026 J	0.01 U	0.016	0.0076 J	0.010 U	0.01 U
Zinc	1.0 J	0.037 J	0.02 U	0.065 J	0.016 J	0.020 U	0.02 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-4
Solutia
Sauget Area 1
Ground Water
Method 8081A Pesticide Data

Sample ID	BR-H	BR-I	DW-MCDO-1	DW-MCDO-1FD	DW-SCHM-1	DW-SETT-1	DW-WRIG-1
Sample Date	05/01/00	04/25/00	10/21/99	10/21/99	10/22/99	10/21/99	10/21/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
4,4'-DDD	0.10 U	180	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	0.10 U	50 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	0.10 U	50 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aldrin	0.050 U	25 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Alpha Chlordane	0.050 U	25 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	0.10 U	50 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan I	0.050 U	25 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan II	0.10 U	50 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan sulfate	0.10 U	50 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U
Endrin	0.10 U	50 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ
Endrin aldehyde	0.10 U	50 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin ketone	0.10 U	50 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Gamma Chlordane	0.050 U	25 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	0.050 U	25 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide	0.050 U	25 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methoxychlor	0.50 U	250 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toxaphene	5.0 U	2500 U	5 U	5 U	5 U	5 U	5 U
alpha-BHC	0.039 U	3300 D	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U
beta-BHC	0.14 J	7.0 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
delta-BHC	0.012 U	41	0.0028 J	0.0029 J	0.012 U	0.012 U	0.004 J
gamma-BHC (Lindane)	0.019 U	9.5 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
Total Pesticides	0.14	3521	0.0028	0.0029	ND	ND	0.004

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-4
Solutia
Sauget Area 1
Ground Water
Method 8081A Pesticide Data

Sample ID	EE-01	EE-02-GP	EE-02-GPFD	EE-03	EE-05	EE-05EB	EE-12-GP
Sample Date	10/12/99	11/04/99	11/04/99	10/12/99	10/13/99	10/13/99	11/05/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
4,4'-DDD	10 U	5 U	5 U	0.1 U	0.024 J	0.1 U	2 U
4,4'-DDE	10 U	5 U	5 U	0.1 U	0.0014 J	0.1 U	2.2
4,4'-DDT	10 U	5 U	5 U	0.1 U	0.1 UJ	0.1 U	2 U
Aldrin	5 U	2.5 U	2.5 U	0.05 U	0.05 UJ	0.05 U	1 U
Alpha Chlordane	5 U	1.6 J	3.2 J	0.05 U	0.05 UJ	0.05 U	1 U
Dieldrin	10 U	5 U	5 U	0.1 U	0.02 J	0.1 U	2 U
Endosulfan I	5 U	2.5 U	2.5 U	0.05 U	0.05 UJ	0.05 U	1 U
Endosulfan II	10 U	5 U	5 U	0.1 U	0.1 UJ	0.1 U	2 J
Endosulfan sulfate	10 U	5 U	5 U	0.1 U	0.1 UJ	0.1 U	2 U
Endrin	10 U	0.49 J	0.23 J	0.1 U	0.024 J	0.1 U	2 U
Endrin aldehyde	10 U	5 U	5 U	0.1 U	0.092 J	0.1 U	2 U
Endrin ketone	10 U	5 U	5 U	0.1 U	0.1 UJ	0.1 U	1.8 J
Gamma Chlordane	5 U	2.5 U	2.5 U	0.05 U	0.008 J	0.05 U	3.5
Heptachlor	5 U	12 UD	12 UD	0.05 U	0.026 J	0.05 U	2.5 J
Heptachlor epoxide	5 U	4.2 J	4.6 J	0.05 U	0.024 J	0.05 U	5.6 J
Methoxychlor	50 U	25 U	0.36 J	0.5 U	0.069 J	0.5 U	2.8 J
Toxaphene	500 U	250 U	250 U	5 U	5 UJ	5 U	100 U
alpha-BHC	3.9 U	0.54 JD	0.45 JD	0.039 U	0.024 J	0.039 U	2.4
beta-BHC	1.4 U	3.5 UD	3.5 UD	0.014 U	0.014 UJ	0.014 U	0.28 U
delta-BHC	1.2 U	3 UD	3 UD	0.012 U	0.36 J	0.01 J	0.24 U
gamma-BHC (Lindane)	1.9 U	4.8 UD	4.8 UD	0.019 U	0.019 UJ	0.0013 J	0.38 U
Total Pesticides	ND	6.83	8.84	ND	0.6724	0.0113	22.8

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-4
Solutia
Sauget Area 1
Ground Water
Method 8081A Pesticide Data

Sample ID	EEG-112	SGW-S1-15FT	SGW-S1-20FT	SGW-S1-40FT	SGW-S1-40FTFD	SGW-S2-15FT	SGW-S2-20FT
Sample Date	10/08/99	10/14/99	10/14/99	10/14/99	10/14/99	10/15/99	10/15/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
4,4'-DDD	0.1 U	0.10 U	0.0040 J	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.0020 J	0.10 U
4,4'-DDT	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Aldrin	0.05 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Alpha Chlordane	0.05 U	0.050 U	0.050 U	0.050 U	0.0014 J	0.050 U	0.050 U
Dieldrin	0.1 U	0.10 U	0.0032 J	0.0013 J	0.10 U	0.10 U	0.10 U
Endosulfan I	0.05 U	0.050 U	0.050 U	0.050 U	0.0011 J	0.050 U	0.050 U
Endosulfan II	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan sulfate	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin aldehyde	0.1 U	0.10 U	0.10 U	0.0032 J	0.10 U	0.10 U	0.10 U
Endrin ketone	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Gamma Chlordane	0.05 U	0.050 U	0.050 U	0.0022 J	0.050 U	0.0012 J	0.050 U
Heptachlor	0.05 U	0.050 U	0.050 U	0.0019 J	0.050 U	0.050 U	0.050 U
Heptachlor epoxide	0.05 U	0.050 U	0.0014 J	0.0010 J	0.050 U	0.050 U	0.050 U
Methoxychlor	0.5 U	0.50 U	0.0054 J	0.50 U	0.50 U	0.50 U	0.50 U
Toxaphene	5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
alpha-BHC	0.039 U	0.039 U	0.0021 J	0.0027 J	0.0037 J	0.039 U	0.039 U
beta-BHC	0.014 U	0.014 U	0.014 U	0.014 U	0.0064 JN	0.0020 J	0.014 U
delta-BHC	0.012 U	0.0012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
gamma-BHC (Lindane)	0.019 U	0.0041 JN	0.0034 JN	0.032	0.0095 J	0.0017 J	0.019 U
Total Pesticides	ND	0.0041	0.0195	0.0443	0.0221	0.0069	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-4
Solutia
Sauget Area 1
Ground Water
Method 8081A Pesticide Data

Sample ID	SGW-S2-40FT	TS-S1-0HR	TS-S1-12HR	TS-S1-12HRFD	TS-S1-24HR	TS-S2-0HR	TS-S2-12HR
Sample Date	10/15/99	03/29/00	03/29/00	03/29/00	03/30/00	03/29/00	03/29/00
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Aldrin	0.50 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Alpha Chlordane	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Dieldrin	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan I	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Endosulfan II	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan sulfate	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin aldehyde	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin ketone	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Gamma Chlordane	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Heptachlor	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Heptachlor epoxide	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Methoxychlor	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toxaphene	0.50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
alpha-BHC	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U
beta-BHC	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U
delta-BHC	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
gamma-BHC (Lindane)	0.0059 J	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
Total Pesticides	*0.0059*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 1-4
Solutia
Sauget Area 1
Ground Water
Method 8081A Pesticide Data

Compound	Sample ID	TS-S2-24HR	UGGW-EE-04	UGGW-EE-04-100FT	UGGW-EE-04-100FTFD	UGGW-EE-04-60FT	UGGW-EE-04FD	UGGW-EE-20
	Sample Date	03/30/00	10/13/99	01/27/00	01/27/00	10/13/99	10/13/99	10/18/99
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
4,4'-DDD		0.10 U	0.1 U	0.10 UJ	0.10 UJ	0.1 U	0.1 U	0.1 U
4,4'-DDE		0.10 U	0.1 U	0.10 UJ	0.10 UJ	0.1 U	0.1 U	0.1 U
4,4'-DDT		0.10 U	0.1 U	0.10 UJ	0.10 UJ	0.1 U	0.1 U	0.1 U
Aldrin		0.050 U	0.05 U	0.050 UJ	0.050 UJ	0.05 U	0.05 U	0.05 U
Alpha Chlordane		0.050 U	0.05 U	0.050 UJ	0.050 UJ	0.05 U	0.05 U	0.05 U
Dieldrin		0.10 U	0.1 U	0.10 UJ	0.10 UJ	0.1 U	0.1 U	0.1 U
Endosulfan I		0.050 U	0.05 U	0.050 UJ	0.050 UJ	0.05 U	0.05 U	0.05 U
Endosulfan II		0.10 U	0.1 U	0.10 UJ	0.10 UJ	0.1 U	0.1 U	0.1 U
Endosulfan sulfate		0.10 U	0.1 U	0.10 UJ	0.10 UJ	0.1 U	0.1 U	0.1 U
Endrin		0.10 U	0.1 U	0.10 UJ	0.10 UJ	0.1 U	0.1 U	0.1 UJ
Endrin aldehyde		0.10 U	0.1 U	0.10 UJ	0.10 UJ	0.1 U	0.1 U	0.1 U
Endrin ketone		0.10 U	0.1 U	0.10 UJ	0.10 UJ	0.1 U	0.1 U	0.1 U
Gamma Chlordane		0.050 U	0.05 U	0.050 UJ	0.050 UJ	0.05 U	0.05 U	0.05 U
Heptachlor		0.050 U	0.05 U	0.050 UJ	0.050 UJ	0.05 U	0.00099 J	0.05 U
Heptachlor epoxide		0.050 U	0.05 U	0.050 UJ	0.050 UJ	0.05 U	0.05 U	0.05 U
Methoxychlor		0.50 U	0.5 U	0.50 UJ	0.50 UJ	0.5 U	0.5 U	0.5 U
Toxaphene		5.0 U	5 U	5.0 UJ	5.0 UJ	5 U	5 U	5 U
alpha-BHC		0.039 U	0.039 U	0.039 UJ	0.039 UJ	0.039 U	0.039 U	0.039 U
beta-BHC		0.014 U	0.014 U	0.014 UJ	0.014 UJ	0.014 U	0.014 U	0.014 U
delta-BHC		0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.0015 J	0.012 U	0.012 U
gamma-BHC (Lindane)		0.019 U	0.00062 J	0.019 UJ	0.019 UJ	0.019 U	0.019 U	0.019 U
Total Pesticides		ND	0.00062	ND	ND	0.0015	0.00099	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 1-4
Solutia
Sauget Area 1
Ground Water
Method 8081A Pesticide Data

Sample ID	UGGW-EE-20-100FT	UGGW-EE-20-60FT	UGGW-EEG-108	UGGW-EEG-108-100FT	UGGW-EEG-108-60FT	UGGW-EEG-108-60FTEB	UGGW-EEG-108FD
Sample Date	01/25/00	01/24/00	10/11/99	01/31/00	01/28/00	01/28/00	10/11/99
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compound							
4,4'-DDD	0.10 U	0.10 U	0.1 U	0.1 UJ	0.10 U	0.10 U	0.1 U
4,4'-DDE	0.10 U	0.10 U	0.1 U	0.1 UJ	0.10 U	0.10 U	0.1 U
4,4'-DDT	0.10 U	0.10 U	0.1 U	0.1 UJ	0.10 U	0.10 U	0.1 U
Aldrin	0.050 U	0.050 UJ	0.05 U	0.05 UJ	0.050 U	0.050 U	0.05 U
Alpha Chlordane	0.050 U	0.050 UJ	0.05 U	0.05 UJ	0.050 U	0.050 U	0.05 U
Dieldrin	0.10 U	0.10 U	0.1 U	0.1 UJ	0.10 U	0.10 U	0.1 U
Endosulfan I	0.050 U	0.050 U	0.05 U	0.05 UJ	0.050 U	0.050 U	0.05 U
Endosulfan II	0.10 U	0.10 U	0.1 U	0.1 UJ	0.10 U	0.10 U	0.1 U
Endosulfan sulfate	0.10 U	0.10 U	0.001 J	0.1 UJ	0.10 U	0.10 U	0.1 U
Endrin	0.10 U	0.10 U	0.1 U	0.1 UJ	0.10 U	0.10 U	0.1 U
Endrin aldehyde	0.10 U	0.10 U	0.1 U	0.1 UJ	0.10 U	0.10 U	0.1 U
Endrin ketone	0.10 U	0.10 U	0.0021 J	0.1 UJ	0.10 U	0.10 U	0.1 U
Gamma Chlordane	0.050 U	0.050 UJ	0.05 U	0.05 UJ	0.050 U	0.050 U	0.05 U
Heptachlor	0.050 U	0.050 UJ	0.001 J	0.05 UJ	0.050 U	0.050 U	0.05 U
Heptachlor epoxide	0.050 U	0.050 U	0.0016 J	0.05 UJ	0.050 U	0.050 U	0.05 U
Methoxychlor	0.50 U	0.50 U	0.5 U	0.5 UJ	0.50 U	0.50 U	0.5 U
Toxaphene	5.0 U	5.0 U	5 U	5 UJ	5.0 U	5.0 U	5 U
alpha-BHC	0.039 U	0.039 UJ	0.039 U	0.039 UJ	0.039 U	0.039 U	0.039 U
beta-BHC	0.014 U	0.014 U	0.014 U	0.014 UJ	0.014 U	0.014 U	0.014 U
delta-BHC	0.012 U	0.012 U	0.0025 J	0.012 UJ	0.012 UJ	0.012 UJ	0.011 J
gamma-BHC (Lindane)	0.019 U	0.019 UJ	0.019 U	0.019 UJ	0.019 U	0.019 U	0.019 U
Total Pesticides	ND	ND	0.0082	ND	ND	ND	0.011

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Table 6

Table 2 - 6

Creek Bottom Soil Analytical Data

Volatile Organic Compounds

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T0-C1	CBS-CSB-T1-C1	CBS-CSB-T1-E1	CBS-CSB-T1-W1	CBS-CSB-T2-C1	CBS-CSB-T2-E1	CBS-CSB-T2-W1
Sample date	11/1/01	10/31/01	10/31/01	10/31/01	10/31/01	10/31/01	10/31/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
1,1,2,2-Tetrachloroethane	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
1,1,2-Trichloroethane	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
1,1-Dichloroethane	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
1,1-Dichloroethene	0.3 U	0.0076 U	0.0069 U	0.0069 U	0.0081 U	0.0066 U	0.0042 U
1,2-Dichloroethane	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
1,2-Dichloroethene (total)	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
1,2-Dichloropropane	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
2-Butanone (MEK)	1.7 U	0.029 J	0.038 U	0.0052 J	0.042 J	0.008 J	0.0085 J
2-Hexanone	1.7 U	0.041 U	0.038 U	0.038 U	0.044 U	0.036 U	0.023 U
4-Methyl-2-pentanone (MIBK)	1.7 U	0.041 U	0.038 U	0.038 U	0.044 U	0.036 U	0.023 U
Acetone	1.3 UJ	0.29	0.075 U	0.1 U	0.24	0.072 U	0.053 U
Benzene	0.18 J	0.0072 J	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0024 J
Bromodichloromethane	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
Bromoform	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
Bromomethane	0.68 U	0.016 U	0.015 U	0.015 U	0.018 U	0.014 U	0.0091 U
Carbon disulfide	0.34 U	0.0082 U	0.0075 U	0.014	0.025	0.0072 U	0.0033 J
Carbon tetrachloride	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
Chlorobenzene	9.7	0.58	0.0035 J	0.0061 J	0.08	0.0038 J	0.054
Chloroethane	0.68 U	0.016 U	0.015 U	0.015 U	0.018 U	0.014 U	0.0091 U
Chloroform	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
Chloromethane	0.68 U	0.016 U	0.015 U	0.015 U	0.018 U	0.014 U	0.0091 U
cis-1,3-Dichloropropene	0.27 U	0.0066 U	0.006 U	0.006 U	0.007 U	0.0058 U	0.0036 U
Dibromochloromethane	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
Ethylbenzene	2	0.01	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
Methylene chloride	0.16 UJ	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
Styrene	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
Tetrachloroethene	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
Toluene	0.3 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
trans-1,3-Dichloropropene	0.27 U	0.0066 U	0.006 U	0.006 U	0.007 U	0.0058 U	0.0036 U
Trichloroethene	0.34 U	0.0082 U	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U
Vinyl chloride	0.68 U	0.016 U	0.015 U	0.015 U	0.018 U	0.014 U	0.0091 U
Xylenes (total)	7	0.08	0.0075 U	0.0075 U	0.0088 U	0.0072 U	0.0046 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T3-C1	CBS-CSB-T3-E1	CBS-CSB-T3-W1	CBS-CSB-T4-C1	CBS-CSB-T4-E1	CBS-CSB-T4-W1	CBS-CSB-T5-C1
Sample date	10/31/01	10/31/01	10/31/01	11/1/01	11/1/01	11/1/01	11/1/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.023	0.0066 U	0.0095 U	0.0098 U	0.0038 J	0.0075 U	0.0074 U
1,1,2,2-Tetrachloroethane	0.011 U	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
1,1,2-Trichloroethane	0.011 U	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
1,1-Dichloroethane	0.011 U	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
1,1-Dichloroethene	0.01 U	0.0061 U	0.0088 U	0.009 U	0.0054 U	0.0075 U	0.0068 U
1,2-Dichloroethane	0.011 U	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
1,2-Dichloroethene (total)	0.012	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
1,2-Dichloropropane	0.011 U	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
2-Butanone (MEK)	0.61	0.015 J	0.0088 J	0.072	0.0062 J	0.057	0.086
2-Hexanone	0.057 U	0.077	0.048 U	0.049 U	0.029 U	0.037 U	0.037 U
4-Methyl-2-pentanone (MIBK)	0.11	0.015 J	0.048 U	0.019 J	0.029 U	0.035 J	0.037 U
Acetone	0.47	0.066 U	0.12 U	0.34	0.086	0.2	0.36
Benzene	0.004 J	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0033 J	0.0074 U
Bromodichloromethane	0.011 U	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
Bromoform	0.011 U	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
Bromomethane	0.023 U	0.013 U	0.019 U	0.02 U	0.012 U	0.015 U	0.015 U
Carbon disulfide	0.02	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.073	0.042
Carbon tetrachloride	0.011 U	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
Chlorobenzene	4.5	0.36	0.0041 J	0.15	0.015	0.5	0.11
Chloroethane	0.023 U	0.013 U	0.019 U	0.02 U	0.012 U	0.015 U	0.015 U
Chloroform	0.011 U	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
Chloromethane	0.023 U	0.013 U	0.019 U	0.02 U	0.012 U	0.015 U	0.015 U
cis-1,3-Dichloropropene	0.0091 U	0.0053 U	0.0076 U	0.0078 U	0.0047 U	0.0075 U	0.0059 U
Dibromochloromethane	0.011 U	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
Ethylbenzene	3.2	0.15	0.0095 U	0.0047 J	0.0059 U	0.043	0.0074 U
Methylene chloride	0.011 U	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
Styrene	0.011 U	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.0075 U	0.0074 U
Tetrachloroethene	0.07	0.0099	0.0083 J	0.0098 U	0.0059 U	0.0075 U	0.0074 U
Toluene	0.29	0.014	0.0051 J	0.0098 U	0.0059 U	0.016	0.0034 J
trans-1,3-Dichloropropene	0.0091 U	0.0053 U	0.0076 U	0.0078 U	0.0047 U	0.0075 U	0.0059 U
Trichloroethene	0.0088 J	0.0066 U	0.0095 U	0.0098 U	0.0059 U	0.034	0.0074 U
Vinyl chloride	0.023 U	0.013 U	0.019 U	0.02 U	0.012 U	0.015 U	0.015 U
Xylenes (total)	29	1	0.0095 U	0.019	0.0035 J	0.14	0.0074 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T5-E1	CBS-CSB-T5-W1	CBS-CSB-T6-C1	CBS-CSB-T6-C1-D	CBS-CSB-T6-E1	CBS-CSB-T6-W1	CBS-CSB-T7-C1
Sample date	11/1/01	11/1/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
1,1,2,2-Tetrachloroethane	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
1,1,2-Trichloroethane	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
1,1-Dichloroethane	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
1,1-Dichloroethene	0.0069 U	0.0063 U	0.006 U	0.006 U	0.0052 U	0.0064 U	0.0072 U
1,2-Dichloroethane	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
1,2-Dichloroethene (total)	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
1,2-Dichloropropane	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
2-Butanone (MEK)	0.0062 J	0.013 J	0.033 U	0.033 U	0.028 U	0.053	0.02 J
2-Hexanone	0.037 U	0.034 U	0.033 U	0.033 U	0.028 U	0.035 U	0.039 U
4-Methyl-2-pentanone (MIBK)	0.0093 J	0.034 U	0.033 U	0.033 U	0.028 U	0.035 U	0.039 U
Acetone	0.09	0.15	0.024 J	0.033 J	0.019 J	0.25	0.087
Benzene	0.0075 U	0.0068 U	0.016	0.0066 U	0.0057 U	0.007 U	0.0078 U
Bromodichloromethane	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
Bromoform	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
Bromomethane	0.015 U	0.014 U	0.013 U	0.013 U	0.011 U	0.014 U	0.016 U
Carbon disulfide	0.0075 U	0.0088	0.0066 U	0.0066 U	0.0057 U	0.077	0.0068 J
Carbon tetrachloride	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
Chlorobenzene	0.0046 J	1.5	0.019	0.0033 J	0.0057 U	0.17	0.14
Chloroethane	0.015 U	0.014 U	0.013 U	0.013 U	0.011 U	0.014 U	0.016 U
Chloroform	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
Chloromethane	0.015 U	0.014 U	0.013 U	0.013 U	0.011 U	0.014 U	0.016 U
cis-1,3-Dichloropropene	0.006 U	0.0055 U	0.0052 U	0.0052 U	0.0046 U	0.0056 U	0.0063 U
Dibromochloromethane	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
Ethylbenzene	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
Methylene chloride	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0022 J
Styrene	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
Tetrachloroethene	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
Toluene	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
trans-1,3-Dichloropropene	0.006 U	0.0055 U	0.0052 U	0.0052 U	0.0046 U	0.0056 U	0.0063 U
Trichloroethene	0.0075 U	0.0068 U	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U
Vinyl chloride	0.015 U	0.014 U	0.013 U	0.013 U	0.011 U	0.014 U	0.016 U
Xylenes (total)	0.0075 U	0.0031 J	0.0066 U	0.0066 U	0.0057 U	0.007 U	0.0078 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T7-E1	CBS-CSB-T7-W1	CBS-CSB-T8-C1	CBS-CSB-T8-E1	CBS-CSB-T8-W1	CBS-CSB-T9-C1	CBS-CSB-T9-E1
Sample date	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
1,1,2,2-Tetrachloroethane	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
1,1,2-Trichloroethane	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
1,1-Dichloroethane	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
1,1-Dichloroethene	0.0064 U	0.007 UJ	0.0069 U	0.0071 U	0.0061 U	0.0065 U	0.0072 U
1,2-Dichloroethane	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
1,2-Dichloroethene (total)	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
1,2-Dichloropropane	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
2-Butanone (MEK)	0.035 U	0.038 UJ	0.012 J	0.0077 J	0.033 U	0.023 J	0.039 U
2-Hexanone	0.035 U	0.038 UJ	0.038 U	0.039 U	0.033 U	0.035 U	0.039 U
4-Methyl-2-pentanone (MIBK)	0.035 U	0.038 UJ	0.038 U	0.039 U	0.033 U	0.035 U	0.039 U
Acetone	0.033 J	0.076 UJ	0.06 J	0.046 J	0.025 J	0.12	0.03 J
Benzene	0.0043 J	0.0076 UJ	0.0036 J	0.019	0.0066 U	0.0048 J	0.0095
Bromodichloromethane	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
Bromoform	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
Bromomethane	0.014 U	0.015 UJ	0.015 U	0.016 U	0.013 U	0.014 U	0.016 U
Carbon disulfide	0.0069 U	0.0076 UJ	0.019	0.0078 U	0.0066 U	0.01	0.0078 U
Carbon tetrachloride	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
Chlorobenzene	0.012	0.0076 UJ	0.022	0.022	0.0066 U	0.4	0.011
Chloroethane	0.014 U	0.015 UJ	0.015 U	0.016 U	0.013 U	0.014 U	0.016 U
Chloroform	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
Chloromethane	0.014 U	0.015 UJ	0.015 U	0.016 U	0.013 U	0.014 U	0.016 U
cis-1,3-Dichloropropene	0.0056 U	0.0061 UJ	0.006 U	0.0062 U	0.0053 U	0.0056 U	0.0063 U
Dibromochloromethane	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
Ethylbenzene	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
Methylene chloride	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
Styrene	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
Tetrachloroethene	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
Toluene	0.0069 U	0.0076 UJ	0.0078	0.0078 U	0.0066 U	0.0079	0.0078 U
trans-1,3-Dichloropropene	0.0056 U	0.0061 UJ	0.006 U	0.0062 U	0.0053 U	0.0056 U	0.0063 U
Trichloroethene	0.0069 U	0.0076 UJ	0.0075 U	0.0078 U	0.0066 U	0.007 U	0.0078 U
Vinyl chloride	0.014 U	0.015 UJ	0.015 U	0.016 U	0.013 U	0.014 U	0.016 U
Xylenes (total)	0.0069 U	0.0076 UJ	0.0047 J	0.0078 U	0.0066 U	0.009	0.0078 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T9-W1	CBS-CSB-T10-C1	CBS-CSB-T10-E1	CBS-CSB-T10-W1	CBS-CSB-T11-C1	CBS-CSB-T11-C1-D	CBS-CSB-T11-E1
Sample date	11/8/01	11/8/01	11/8/01	11/8/01	11/19/01	11/19/01	11/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
1,1,2,2-Tetrachloroethane	0.0074 U	0.0061 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
1,1,2-Trichloroethane	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
1,1-Dichloroethane	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
1,1-Dichloroethene	0.0068 U	0.007 U	0.0086 U	0.0071 U	0.0066 U	0.0062 U	0.0065 U
1,2-Dichloroethane	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
1,2-Dichloroethene (total)	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
1,2-Dichloropropane	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
2-Butanone (MEK)	0.037 U	0.019 J	0.047 U	0.038 U	0.017 J	0.026 J	0.035 U
2-Hexanone	0.037 U	0.038 U	0.047 U	0.038 U	0.036 U	0.034 U	0.035 U
4-Methyl-2-pentanone (MIBK)	0.037 U	0.038 U	0.047 U	0.038 U	0.036 U	0.034 U	0.035 U
Acetone	0.031 J	0.083	0.011 J	0.029 J	0.093	0.14	0.077
Benzene	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0036 J	0.004 J	0.0056 J
Bromodichloromethane	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
Bromoform	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
Bromomethane	0.015 U	0.015 U	0.019 U	0.015 U	0.014 U	0.013 U	0.014 U
Carbon disulfide	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.016	0.027	0.0071 U
Carbon tetrachloride	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
Chlorobenzene	0.0074 U	0.53	0.0094 U	0.0077 U	0.015	0.019	0.011
Chloroethane	0.015 U	0.015 U	0.019 U	0.015 U	0.014 U	0.013 U	0.014 U
Chloroform	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
Chloromethane	0.015 U	0.015 U	0.019 U	0.015 U	0.014 U	0.013 U	0.014 U
cis-1,3-Dichloropropene	0.0059 U	0.0061 U	0.0075 U	0.0061 U	0.0057 U	0.0054 U	0.0057 U
Dibromochloromethane	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
Ethylbenzene	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
Methylene chloride	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
Styrene	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
Tetrachloroethene	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
Toluene	0.0074 U	0.003 J	0.0094 U	0.0077 U	0.0071 J	0.007	0.0071 U
trans-1,3-Dichloropropene	0.0059 U	0.0061 U	0.0075 U	0.0061 U	0.0057 U	0.0054 U	0.0057 U
Trichloroethene	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0072 U	0.0067 U	0.0071 U
Vinyl chloride	0.015 U	0.015 U	0.019 U	0.015 U	0.014 U	0.013 U	0.014 U
Xylenes (total)	0.0074 U	0.0076 U	0.0094 U	0.0077 U	0.0076	0.01	0.0071 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T11-W1	CBS-CSB-T12-C1	CBS-CSB-T12-E1	CBS-CSB-T12-W1	CBS-CSB-T13-C1	CBS-CSB-T13-E1	CBS-CSB-T13-W1
Sample date	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
1,1,2,2-Tetrachloroethane	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
1,1,2-Trichloroethane	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
1,1-Dichloroethane	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
1,1-Dichloroethene	0.0058 U	0.0082 U	0.0064 U	0.0067 U	0.0065 U	0.0064 U	0.0071 U
1,2-Dichloroethane	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
1,2-Dichloroethene (total)	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
1,2-Dichloropropane	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
2-Butanone (MEK)	0.032 U	0.073	0.035 U	0.036 U	0.035 U	0.035 U	0.038 U
2-Hexanone	0.032 U	0.044 U	0.035 U	0.036 U	0.035 U	0.035 U	0.038 U
4-Methyl-2-pentanone (MIBK)	0.032 U	0.044 U	0.035 U	0.036 U	0.035 U	0.035 U	0.038 U
Acetone	0.057 J	0.4	0.07 U	0.072 J	0.091	0.07 U	0.23
Benzene	0.0063 U	0.0089 U	0.0035 J	0.0073 U	0.0035 J	0.0041 J	0.0077 U
Bromodichloromethane	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
Bromoform	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
Bromomethane	0.013 U	0.018 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U
Carbon disulfide	0.0063 U	0.045	0.007 U	0.0073 U	0.0042 J	0.007 U	0.0077 U
Carbon tetrachloride	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
Chlorobenzene	0.0063 U	0.053	0.0044 J	0.0073 U	0.074	0.0089	0.0077 U
Chloroethane	0.013 U	0.018 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U
Chloroform	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
Chloromethane	0.013 U	0.018 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U
cis-1,3-Dichloropropene	0.0051 U	0.0071 U	0.0056 U	0.0058 U	0.0057 U	0.0056 U	0.0061 U
Dibromochloromethane	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
Ethylbenzene	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
Methylene chloride	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
Styrene	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
Tetrachloroethene	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
Toluene	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0038 J	0.007 U	0.0077 U
trans-1,3-Dichloropropene	0.0051 U	0.0071 U	0.0056 U	0.0058 U	0.0057 U	0.0056 U	0.0061 U
Trichloroethene	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U
Vinyl chloride	0.013 U	0.018 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U
Xylenes (total)	0.0063 U	0.0089 U	0.007 U	0.0073 U	0.0071 U	0.007 U	0.0077 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T14-1	CBS-CSB-T15-1	CBS-CSB-T16-1	CBS-CSB-T17-C1	CBS-CSB-T17-E1	CBS-CSB-T17-E1D	CBS-CSB-T17-WI
Sample date	12/20/01	12/20/01	12/20/01	11/9/01	11/9/01	11/9/01	11/9/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.007 U	0.0048 U	0.0063 J	0.01 U	0.0077 U	0.0069 U	0.0072 U
1,1,2,2-Tetrachloroethane	0.007 U	0.0048 U	0.0072 U	0.01 U	0.0077 U	0.0069 UJ	0.0072 U
1,1,2-Trichloroethane	0.007 U	0.0048 U	0.0072 U	0.01 U	0.0077 U	0.0069 U	0.0072 U
1,1-Dichloroethane	0.007 U	0.0048 U	0.0072 U	0.01 U	0.0077 U	0.0069 U	0.0072 U
1,1-Dichloroethene	0.0064 U	0.0044 U	0.0067 U	0.0093 U	0.0071 U	0.0064 U	0.0066 U
1,2-Dichloroethane	0.007 U	0.0048 U	0.0072 U	0.01 U	0.0077 U	0.0069 U	0.0072 U
1,2-Dichloroethene (total)	0.007 U	0.0048 U	0.0072 U	0.01 U	0.0077 U	0.0069 U	0.0072 U
1,2-Dichloropropane	0.007 U	0.0048 U	0.0072 U	0.01 U	0.0077 U	0.0069 U	0.0072 U
2-Butanone (MEK)	0.009 J	0.024 U	0.0052 J	0.059	0.0088 J	0.022 J	0.014 J
2-Hexanone	0.035 U	0.024 U	0.036 U	0.05 U	0.038 U	0.035 UJ	0.036 U
4-Methyl-2-pentanone (MIBK)	0.035 U	0.024 U	0.036 U	0.05 U	0.038 U	0.035 U	0.036 U
Acetone	0.067 J	0.014 J	0.072 U	0.34 J	0.12 J	0.21 J	0.11 J
Benzene	0.007 U	0.0048 U	0.0072 U	0.01 U	0.0044 J	0.0051 J	0.0038 J
Bromodichloromethane	0.007 U	0.0048 U	0.0072 U	0.01 U	0.0077 U	0.0069 U	0.0072 U
Bromoform	0.007 U	0.0048 U	0.0072 U	0.01 U	0.0077 U	0.0069 UJ	0.0072 U
Bromomethane	0.014 U	0.0097 U	0.014 U	0.02 U	0.015 U	0.014 U	0.014 U
Carbon disulfide	0.007 U	0.0048 U	0.0061 J	0.03	0.0077 U	0.0051 J	0.0047 J
Carbon tetrachloride	0.007 U	0.0048 U	0.0072 U	0.01 U	0.0077 U	0.0069 U	0.0072 U
Chlorobenzene	0.0082	0.0048 U	0.031	0.11	0.037	0.11 J	0.013
Chloroethane	0.014 U	0.0097 U	0.014 U	0.02 U	0.015 U	0.014 U	0.014 U
Chloroform	0.007 U	0.0048 U	0.0031 J	0.01 U	0.0077 U	0.0069 U	0.0072 U
Chloromethane	0.014 U	0.0097 U	0.014 U	0.02 U	0.015 U	0.014 U	0.014 U
cis-1,3-Dichloropropene	0.0056 U	0.0039 U	0.0058 U	0.0081 U	0.0062 U	0.0056 U	0.0057 U
Dibromochloromethane	0.007 U	0.0048 U	0.0072 U	0.01 U	0.0077 U	0.0069 UJ	0.0072 U
Ethylbenzene	0.007 U	0.0048 U	0.011	0.01 U	0.0077 U	0.0069 UJ	0.0072 U
Methylene chloride	0.0023 J	0.0018 J	0.0029 J	0.01 U	0.0077 U	0.0069 U	0.0072 U
Styrene	0.007 U	0.0048 U	0.0028 J	0.01 U	0.0077 U	0.0069 UJ	0.0072 U
Tetrachloroethene	0.007 U	0.0048 U	0.0072 U	0.01 U	0.0077 U	0.0069 UJ	0.0072 U
Toluene	0.014 J	0.002 J	0.058	0.01 U	0.0032 J	0.0046 J	0.0063 J
trans-1,3-Dichloropropene	0.0056 U	0.0039 U	0.0058 U	0.0081 U	0.0062 U	0.0056 U	0.0057 U
Trichloroethene	0.007 U	0.0048 U	0.0068 J	0.01 U	0.0077 U	0.0069 U	0.0072 U
Vinyl chloride	0.014 U	0.0097 U	0.014 U	0.02 U	0.015 U	0.014 U	0.014 U
Xylenes (total)	0.007 U	0.0048 U	0.022	0.01 U	0.0077 U	0.0069 UJ	0.0072 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	C	C	C
Sample	CBS-CSB-T18-C1	CBS-CSB-T18-E1	CBS-CSB-T18-W1	CBS-CSB-T18-W1D	CBS-CSC-T1-1	CBS-CSC-T2-1	CBS-CSC-T3-1
Sample date	11/9/01	11/9/01	11/9/01	11/9/01	12/13/01	12/13/01	12/13/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
1,1,2,2-Tetrachloroethane	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
1,1,2-Trichloroethane	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
1,1-Dichloroethane	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
1,1-Dichloroethene	0.0072 U	0.006 U	0.0073 U	0.0059 U	0.0063 U	0.0066 U	0.0071 U
1,2-Dichloroethane	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
1,2-Dichloroethene (total)	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
1,2-Dichloropropane	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
2-Butanone (MEK)	0.032 J	0.033 U	0.0082 J	0.021 J	0.0072 J	0.0057 J	0.038 U
2-Hexanone	0.039 U	0.033 UJ	0.04 U	0.032 U	0.034 U	0.036 U	0.038 U
4-Methyl-2-pentanone (MIBK)	0.039 U	0.033 UJ	0.04 U	0.032 U	0.034 U	0.036 U	0.038 U
Acetone	0.18 J	0.053 J	0.085 J	0.16 J	0.068 U	0.041 J	0.077 U
Benzene	0.018	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
Bromodichloromethane	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
Bromoform	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
Bromomethane	0.016 U	0.013 UJ	0.016 U	0.013 U	0.014 U	0.014 U	0.015 U
Carbon disulfide	0.0072 J	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
Carbon tetrachloride	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
Chlorobenzene	2.7	0.0066 U	0.0032 J	0.0064	0.23	0.11	0.046
Chloroethane	0.016 U	0.013 U	0.016 U	0.013 U	0.014 U	0.014 U	0.015 U
Chloroform	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
Chloromethane	0.016 U	0.013 U	0.016 U	0.013 U	0.014 U	0.014 U	0.015 U
cis-1,3-Dichloropropene	0.0063 U	0.0052 U	0.0064 U	0.0051 U	0.0055 U	0.0057 U	0.0062 U
Dibromochloromethane	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
Ethylbenzene	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
Methylene chloride	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0023 J	0.0023 J	0.0077 U
Styrene	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0027 J	0.0077 U
Tetrachloroethene	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
Toluene	0.0032 J	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0039 J	0.0077 U
trans-1,3-Dichloropropene	0.0063 U	0.0052 U	0.0064 U	0.0051 U	0.0055 U	0.0057 U	0.0062 U
Trichloroethene	0.0078 U	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U
Vinyl chloride	0.016 U	0.013 U	0.016 U	0.013 U	0.014 U	0.014 U	0.015 U
Xylenes (total)	0.011	0.0066 U	0.008 U	0.0064 U	0.0068 U	0.0071 U	0.0077 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	C	C	C	C	C	C	C
Sample	CBS-CSC-T4-1	CBS-CSC-T4-1-FD	CBS-CSC-T5-1	CBS-CSC-T6-1	CBS-CSC-T7-1	CBS-CSC-T8-1	CBS-CSC-T9-1
Sample date	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
1,1,2,2-Tetrachloroethane	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
1,1,2-Trichloroethane	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
1,1-Dichloroethane	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
1,1-Dichloroethene	0.0069 U	0.007 U	0.0072 U	0.0073 U	0.0068 U	0.0069 U	0.0062 U
1,2-Dichloroethane	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
1,2-Dichloroethene (total)	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
1,2-Dichloropropane	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
2-Butanone (MEK)	0.037 U	0.038 U	0.039 U	0.0099 J	0.037 U	0.037 U	0.034 U
2-Hexanone	0.037 U	0.038 U	0.039 U	0.04 U	0.037 U	0.037 U	0.034 U
4-Methyl-2-pentanone (MIBK)	0.037 U	0.038 U	0.039 U	0.04 U	0.037 U	0.037 U	0.034 U
Acetone	0.014 J	0.013 J	0.0096 J	0.083	0.074 U	0.075 U	0.014 J
Benzene	0.0075 U	0.0076 U	0.0078 U	0.003 J	0.0074 U	0.0075 U	0.0068 U
Bromodichloromethane	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
Bromoform	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
Bromomethane	0.015 U	0.015 U	0.016 U	0.016 U	0.015 U	0.015 U	0.014 U
Carbon disulfide	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
Carbon tetrachloride	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
Chlorobenzene	0.022	0.01	0.0023 J	0.7	0.042	0.022	0.0038 J
Chloroethane	0.015 U	0.015 U	0.016 U	0.016 U	0.015 U	0.015 U	0.014 U
Chloroform	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
Chloromethane	0.015 U	0.015 U	0.016 U	0.016 U	0.015 U	0.015 U	0.014 U
cis-1,3-Dichloropropene	0.006 U	0.0061 U	0.0062 U	0.0063 U	0.0059 U	0.006 U	0.0054 U
Dibromochloromethane	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
Ethylbenzene	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
Methylene chloride	0.0026 J	0.0076 U	0.0078 U	0.0048 J	0.0074 U	0.0075 U	0.0068 U
Styrene	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
Tetrachloroethene	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
Toluene	0.0046 J	0.0076 U	0.0078 U	0.0075 J	0.0033 J	0.0075 U	0.0068 U
trans-1,3-Dichloropropene	0.006 U	0.0061 U	0.0062 U	0.0063 U	0.0059 U	0.006 U	0.0054 U
Trichloroethene	0.0075 U	0.0076 U	0.0078 U	0.0079 U	0.0074 U	0.0075 U	0.0068 U
Vinyl chloride	0.015 U	0.015 U	0.016 U	0.016 U	0.015 U	0.015 U	0.014 U
Xylenes (total)	0.0075 U	0.0076 U	0.0078 U	0.0043 J	0.0074 U	0.0075 U	0.0068 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	D	D	D	D	D	D	E
Sample	CBS-CSD-T1-1	CBS-CSD-T2-1	CBS-CSD-T3-1	CBS-CSD-T4-1	CBS-CSD-T5-1	CBS-CSD-T6-1	CBS-CSE-T1-1
Sample date	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/18/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
1,1,2,2-Tetrachloroethane	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
1,1,2-Trichloroethane	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
1,1-Dichloroethane	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
1,1-Dichloroethene	0.0069 U	0.007 U	0.0066 U	0.0069 U	0.0063 U	0.0067 U	0.0069 U
1,2-Dichloroethane	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
1,2-Dichloroethene (total)	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
1,2-Dichloropropane	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
2-Butanone (MEK)	0.01 J	0.038 U	0.0079 J	0.037 U	0.034 U	0.0063 J	0.014 J
2-Hexanone	0.037 U	0.038 U	0.036 U	0.037 U	0.034 U	0.036 U	0.037 U
4-Methyl-2-pentanone (MIBK)	0.037 U	0.038 U	0.036 U	0.037 U	0.034 U	0.036 U	0.037 U
Acetone	0.075 U	0.076 U	0.071 U	0.075 U	0.068 U	0.072 U	0.073 J
Benzene	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
Bromodichloromethane	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
Bromoform	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
Bromomethane	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U
Carbon disulfide	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
Carbon tetrachloride	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
Chlorobenzene	0.15	0.0034 J	0.021	0.0077	0.0068 U	0.002 J	0.0071 J
Chloroethane	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U
Chloroform	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
Chloromethane	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U
cis-1,3-Dichloropropene	0.006 U	0.0061 U	0.0057 U	0.006 U	0.0055 U	0.0058 U	0.006 U
Dibromochloromethane	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
Ethylbenzene	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
Methylene chloride	0.0023 J	0.0023 J	0.0071 U	0.0029 J	0.0068 U	0.0032 J	0.0075 U
Styrene	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
Tetrachloroethene	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
Toluene	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0029 J	0.0075 U
trans-1,3-Dichloropropene	0.006 U	0.0061 U	0.0057 U	0.006 U	0.0055 U	0.0058 U	0.006 U
Trichloroethene	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U
Vinyl chloride	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U
Xylenes (total)	0.0075 U	0.0076 U	0.0071 U	0.0075 U	0.0068 U	0.0072 U	0.0075 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	E	E	E	E	E	E	E
Sample	CBS-CSE-T2-1	CBS-CSE-T3-1	CBS-CSE-T3-1-FD	CBS-CSE-T4-1	CBS-CSE-T5-1	CBS-CSE-T6-1	CBS-CSE-T7-1
Sample date	12/18/01	12/18/01	12/18/01	12/18/01	12/18/01	12/18/01	12/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
1,1,2,2-Tetrachloroethane	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
1,1,2-Trichloroethane	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
1,1-Dichloroethane	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
1,1-Dichloroethene	0.0062 U	0.0068 U	0.0065 U	0.0064 U	0.006 U	0.0066 U	0.0079 U
1,2-Dichloroethane	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
1,2-Dichloroethene (total)	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
1,2-Dichloropropane	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
2-Butanone (MEK)	0.034 U	0.037 U	0.035 U	0.0089 J	0.032 U	0.036 U	0.043 U
2-Hexanone	0.034 U	0.037 U	0.035 U	0.035 U	0.032 U	0.036 U	0.043 U
4-Methyl-2-pentanone (MIBK)	0.034 U	0.037 U	0.035 U	0.035 U	0.032 U	0.036 U	0.043 U
Acetone	0.068 U	0.024 J	0.07 U	0.048 J	0.018 J	0.071 U	0.072 U
Benzene	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
Bromodichloromethane	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
Bromoform	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
Bromomethane	0.014 U	0.015 U	0.014 U	0.014 U	0.013 U	0.014 U	0.017 U
Carbon disulfide	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
Carbon tetrachloride	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
Chlorobenzene	0.0068 U	0.0074 U	0.007 U	0.013	0.002 J	0.0071 U	0.0086 U
Chloroethane	0.014 U	0.015 U	0.014 U	0.014 U	0.013 U	0.014 U	0.017 U
Chloroform	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
Chloromethane	0.014 U	0.015 U	0.014 U	0.014 U	0.013 U	0.014 U	0.017 U
cis-1,3-Dichloropropene	0.0054 U	0.0059 U	0.0056 U	0.0056 U	0.0052 U	0.0057 U	0.0069 U
Dibromochloromethane	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
Ethylbenzene	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
Methylene chloride	0.0068 U	0.0023 J	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
Styrene	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
Tetrachlorcethene	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
Toluene	0.0068 U	0.0037 J	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
trans-1,3-Dichloropropene	0.0054 U	0.0059 U	0.0056 U	0.0056 U	0.0052 U	0.0057 U	0.0069 U
Trichloroethene	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U
Vinyl chloride	0.014 U	0.015 U	0.014 U	0.014 U	0.013 U	0.014 U	0.017 U
Xylenes (total)	0.0068 U	0.0074 U	0.007 U	0.0069 U	0.0065 U	0.0071 U	0.0086 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	E	E	E	E	E	E	E
Sample	CBS-CSE-T8-1	CBS-CSE-T9-1	CBS-CSE-T10-1	CBS-CSE-T11-1	CBS-CSE-T12-1	CBS-CSE-T13-2	CBS-CSE-T14-1
Sample date	12/19/01	12/19/01	12/19/01	12/19/01	12/19/01	2/14/02	12/18/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U
1,1,2,2-Tetrachloroethane	0.0076 U	0.006 U	0.0064 UJ	0.0058 U	0.0075 U	0.0067 U	0.0074 U
1,1,2-Trichloroethane	0.0076 U	0.006 U	0.0064 UJ	0.0058 U	0.0075 U	0.0067 U	0.0074 U
1,1-Dichloroethane	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U
1,1-Dichloroethene	0.007 U	0.0055 U	0.0059 U	0.0054 U	0.0069 U	0.0061 U	0.0068 U
1,2-Dichloroethane	0.0076 U	0.006 U	0.0064 UJ	0.0058 U	0.0075 U	0.0067 U	0.0074 U
1,2-Dichloroethene (total)	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U
1,2-Dichloropropane	0.0076 U	0.006 U	0.0064 UJ	0.0058 U	0.0075 U	0.0067 U	0.0074 U
2-Butanone (MEK)	0.011 J	0.03 U	0.012 J	0.029 U	0.0073 J	0.033 U	0.037 U
2-Hexanone	0.038 U	0.03 U	0.032 U	0.029 U	0.038 U	0.033 U	0.037 U
4-Methyl-2-pentanone (MIBK)	0.038 U	0.03 U	0.032 U	0.029 U	0.038 U	0.033 U	0.037 U
Acetone	0.062 J	0.075 U	0.064 U	0.074 U	0.077 U	0.029 J	0.018 J
Benzene	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U
Bromodichloromethane	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U
Bromoform	0.0076 U	0.006 U	0.0064 UJ	0.0058 U	0.0075 U	0.0067 U	0.0074 U
Bromomethane	0.015 U	0.012 U	0.013 U	0.012 U	0.015 U	0.013 U	0.015 U
Carbon disulfide	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U
Carbon tetrachloride	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U
Chlorobenzene	0.033	0.006 U	0.015 J	0.0022 J	0.066	0.012	0.0051 J
Chloroethane	0.015 U	0.012 U	0.013 U	0.012 U	0.015 U	0.013 U	0.015 U
Chloroform	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U
Chloromethane	0.015 U	0.012 U	0.013 U	0.012 U	0.015 U	0.013 U	0.015 U
cis-1,3-Dichloropropene	0.0061 U	0.0048 U	0.0051 U	0.0047 U	0.006 U	0.0053 U	0.0059 U
Dibromochloromethane	0.0076 U	0.006 U	0.0064 UJ	0.0058 U	0.0075 U	0.0067 U	0.0074 U
Ethylbenzene	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U
Methylene chloride	0.0076 U	0.0018 J	0.0064 UJ	0.0058 U	0.0075 U	0.0067 U	0.0074 U
Styrene	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U
Tetrachloroethene	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U
Toluene	0.0076 U	0.006 U	0.0064 UJ	0.0058 U	0.0075 U	0.0026 J	0.0074 U
trans-1,3-Dichloropropene	0.0061 U	0.0048 U	0.0051 U	0.0047 U	0.006 U	0.0053 U	0.0059 U
Trichloroethene	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U
Vinyl chloride	0.015 U	0.012 U	0.013 U	0.012 U	0.015 U	0.013 U	0.015 U
Xylenes (total)	0.0076 U	0.006 U	0.0064 U	0.0058 U	0.0075 U	0.0067 U	0.0074 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	E	E	E	E	F	F	F
Sample	CBS-CSE-T15-1	CBS-CSE-T15-1-FD	CBS-CSE-T16-1	CBS-CSE-T17-1	CBS-CSF-T1-1	CBS-CSF-T2-1	CBS-CSF-T3-1
Sample date	12/18/01	12/18/01	12/21/01	12/21/01	12/21/01	12/11/01	12/11/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
1,1,2,2-Tetrachloroethane	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
1,1,2-Trichloroethane	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
1,1-Dichloroethane	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
1,1-Dichloroethene	0.0058 U	0.0059 U	0.01 UJ	0.0088 U	0.0091 U	0.0068 U	0.0071 U
1,2-Dichloroethane	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
1,2-Dichloroethene (total)	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
1,2-Dichloropropane	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
2-Butanone (MEK)	0.032 U	0.032 U	0.055 UJ	0.048 U	0.0087 J	0.014 J	0.038 U
2-Hexanone	0.032 U	0.032 U	0.055 UJ	0.048 U	0.05 U	0.037 U	0.038 U
4-Methyl-2-pentanone (MIBK)	0.032 U	0.032 U	0.055 UJ	0.048 U	0.05 U	0.037 U	0.038 U
Acetone	0.063 U	0.064 U	0.048 J	0.034 J	0.037 J	0.14 U	0.077 U
Benzene	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
Bromodichloromethane	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
Bromoform	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
Bromomethane	0.013 U	0.013 U	0.022 UJ	0.019 U	0.02 U	0.015 U	0.015 U
Carbon disulfide	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
Carbon tetrachloride	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
Chlorobenzene	0.0059 J	0.012	0.21 J	0.0042 J	0.0052 J	0.0086	0.014
Chloroethane	0.013 U	0.013 U	0.022 UJ	0.019 U	0.02 U	0.015 U	0.015 U
Chloroform	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
Chloromethane	0.013 U	0.013 U	0.022 UJ	0.019 U	0.02 U	0.015 U	0.015 U
cis-1,3-Dichloropropene	0.0051 U	0.0051 U	0.0089 UJ	0.0076 U	0.0079 U	0.0059 U	0.0062 U
Dibromochloromethane	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
Ethylbenzene	0.0063 U	0.0064 U	0.0049 J	0.0095 U	0.0099 U	0.0074 U	0.0077 U
Methylene chloride	0.0033 J	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.003 J
Styrene	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
Tetrachloroethene	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
Toluene	0.0057 J	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0032 J	0.0077 U
trans-1,3-Dichloropropene	0.0051 U	0.0051 U	0.0089 UJ	0.0076 U	0.0079 U	0.0059 U	0.0062 U
Trichloroethene	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U
Vinyl chloride	0.013 U	0.013 U	0.022 UJ	0.019 U	0.02 U	0.015 U	0.015 U
Xylenes (total)	0.0063 U	0.0064 U	0.011 UJ	0.0095 U	0.0099 U	0.0074 U	0.0077 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F	F	F
Sample	CBS-CSF-T4-1	CBS-CSF-T5-1	CBS-CSF-T6-1	CBS-CSF-T6-1-FD	CBS-CSF-T7-1	CBS-CSF-T8-1	CBS-CSF-T9-1
Sample date	12/11/01	1/8/02	1/16/02	1/16/02	1/16/02	1/23/02	1/23/02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
1,1,2,2-Tetrachloroethane	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
1,1,2-Trichloroethane	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
1,1-Dichloroethane	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
1,1-Dichloroethene	0.0063 U	0.0064 U	0.0069 U	0.0066 U	0.0064 U	0.0056 U	0.0064 U
1,2-Dichloroethane	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
1,2-Dichloroethene (total)	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
1,2-Dichloropropane	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
2-Butanone (MEK)	0.0075 J	0.01 J	0.008 J	0.012 J	0.0083 J	0.03 U	0.034 U
2-Hexanone	0.034 U	0.035 U	0.037 U	0.036 U	0.035 U	0.03 U	0.034 U
4-Methyl-2-pentanone (MIBK)	0.034 U	0.035 U	0.037 U	0.036 U	0.035 U	0.03 U	0.034 U
Acetone	0.068 U	0.064 J	0.05 J	0.074	0.048 J	0.036 J	0.075 U
Benzene	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Bromodichloromethane	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Bromoform	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Bromomethane	0.014 U	0.014 U	0.015 UJ	0.014 UJ	0.014 UJ	0.012 U	0.014 U
Carbon disulfide	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Carbon tetrachloride	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Chlorobenzene	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Chloroethane	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.012 U	0.014 U
Chloroform	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Chloromethane	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.012 U	0.014 U
cis-1,3-Dichloropropene	0.0055 U	0.0056 U	0.006 U	0.0057 U	0.0056 U	0.0049 U	0.0055 U
Dibromochloromethane	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Ethylbenzene	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Methylene chloride	0.0043 J	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Styrene	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Tetrachloroethene	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Toluene	0.0062 J	0.0069 U	0.0084	0.0071 U	0.0047 J	0.0025 J	0.0069 U
trans-1,3-Dichloropropene	0.0055 U	0.0056 U	0.006 U	0.0057 U	0.0056 U	0.0049 U	0.0055 U
Trichloroethene	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U
Vinyl chloride	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.012 U	0.014 U
Xylenes (total)	0.0068 U	0.0069 U	0.0075 U	0.0071 U	0.0069 U	0.0061 U	0.0069 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F	F	F
Sample	CBS-CSF-T9-1-FD	CBS-CSF-T10-1	CBS-CSF-T11-1	CBS-CSF-T12-1	CBS-CSF-T13-1	CBS-CSF-T14-1	CBS-CSF-T15-1
Sample date	1/23/02	1/25/02	1/25/02	1/23/02	1/16/02	1/8/02	1/8/02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
1,1,2,2-Tetrachloroethane	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
1,1,2-Trichloroethane	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
1,1-Dichloroethane	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
1,1-Dichloroethene	0.0056 U	0.0053 U	0.0063 U	0.0058 U	0.0061 U	0.0068 U	0.0066 U
1,2-Dichloroethane	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
1,2-Dichloroethene (total)	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
1,2-Dichloropropane	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
2-Butanone (MEK)	0.03 U	0.029 U	0.034 U	0.031 U	0.033 U	0.01 J	0.036 U
2-Hexanone	0.03 U	0.029 U	0.034 U	0.031 U	0.033 U	0.037 U	0.036 U
4-Methyl-2-pentanone (MIBK)	0.03 U	0.029 U	0.034 U	0.031 U	0.033 U	0.037 U	0.036 U
Acetone	0.061 U	0.058 U	0.068 U	0.068 U	0.067 U	0.058 J	0.071 U
Benzene	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
Bromodichloromethane	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
Bromoform	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
Bromomethane	0.012 U	0.012 U	0.014 U	0.012 U	0.013 UJ	0.015 U	0.014 UJ
Carbon disulfide	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
Carbon tetrachloride	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
Chlorobenzene	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
Chloroethane	0.012 U	0.012 U	0.014 U	0.012 U	0.013 U	0.015 U	0.014 U
Chloroform	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
Chloromethane	0.012 U	0.012 U	0.014 U	0.012 U	0.013 U	0.015 U	0.014 U
cis-1,3-Dichloropropene	0.0049 U	0.0046 U	0.0054 U	0.005 U	0.0053 U	0.0059 U	0.0057 U
Dibromochloromethane	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
Ethylbenzene	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
Methylene chloride	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0024 J
Styrene	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
Tetrachloroethene	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
Toluene	0.0061 U	0.0058 U	0.0068 U	0.0077	0.0067 U	0.0073 U	0.012
trans-1,3-Dichloropropene	0.0049 U	0.0046 U	0.0054 U	0.005 U	0.0053 U	0.0059 U	0.0057 U
Trichloroethene	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0071 U
Vinyl chloride	0.012 U	0.012 U	0.014 U	0.012 U	0.013 U	0.015 U	0.014 U
Xylenes (total)	0.0061 U	0.0058 U	0.0068 U	0.0062 U	0.0067 U	0.0073 U	0.0048 J

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	SITE M	SITE M	SITE M	SITE M	SITE M
Sample	CBS-CSF-T15-1-FD	CBS-CSF-T16-1	SED-M-S2 0-6	SED-M-S3-(0-6)	SED-M-S4-(0-6)	SED-M-S5 0-6	SED-M-S6-(0-6)
Sample date	1/8/02	2/6/02	6/22/01	7/10/01	8/1/01	6/22/01	7/10/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,1,1-Trichloroethane	0.0066 U	0.0053 U	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
1,1,2,2-Tetrachloroethane	0.0066 U	0.01	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
1,1,2-Trichloroethane	0.0066 U	0.0061	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
1,1-Dichloroethane	0.0066 U	0.0053 U	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
1,1-Dichloroethene	0.006 U	0.0049 U	0.0063 U	0.0057 U	0.0059 UJ	0.0053 U	0.0064 U
1,2-Dichloroethane	0.0066 U	0.0021 J	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
1,2-Dichloroethene (total)	0.0066 U	0.0053 U	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
1,2-Dichloropropane	0.0066 U	0.0053 U	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
2-Butanone (MEK)	0.033 U	0.027 U	0.011 J	0.059	0.078 J	0.016 J	0.061
2-Hexanone	0.033 U	0.027 U	0.034 U	0.031 U	0.032 UJ	0.029 U	0.035 U
4-Methyl-2-pentanone (MIBK)	0.033 U	0.027 U	0.034 U	0.031 U	0.032 UJ	0.029 U	0.035 U
Acetone	0.066 U	0.029 J	0.017 J	0.26	0.44 J	0.032 J	0.31 J
Benzene	0.0066 U	0.0053 U	0.0068 U	0.037	0.011 J	0.0058 U	0.007 U
Bromodichloromethane	0.0066 U	0.0013 J	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
Bromoform	0.0066 U	0.003 J	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
Bromomethane	0.013 U	0.011 U	0.014 U	0.012 U	0.013 UJ	0.012 U	0.014 U
Carbon disulfide	0.0066 U	0.0053 U	0.0068 U	0.012	0.067 J	0.0092	0.015
Carbon tetrachloride	0.0066 U	0.0053 U	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
Chlorobenzene	0.0066 U	0.0053 U	0.0072	0.38	1.2 J	0.0067	0.007 U
Chloroethane	0.013 U	0.011 U	0.014 U	0.012 U	0.013 UJ	0.012 U	0.014 U
Chloroform	0.0066 U	0.0053 U	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
Chloromethane	0.013 U	0.011 U	0.014 U	0.012 U	0.013 UJ	0.012 U	0.014 U
cis-1,3-Dichloropropene	0.0053 U	0.0043 U	0.0055 U	0.0049 U	0.0052 UJ	0.0046 U	0.0056 U
Dibromochloromethane	0.0066 U	0.002 J	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
Ethylbenzene	0.0066 U	0.0053 U	0.0068 U	0.0079	0.011 J	0.0058 U	0.007 U
Methylene chloride	0.0066 U	0.0018 J	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
Styrene	0.0066 U	0.0053 U	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
Tetrachloroethene	0.0066 U	0.0053 U	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
Toluene	0.0066 U	0.0023 J	0.0068 U	0.042	0.016 J	0.0038 J	0.0025 J
trans-1,3-Dichloropropene	0.0053 U	0.0043 U	0.0055 U	0.0049 U	0.0052 UJ	0.0046 U	0.0056 U
Trichloroethene	0.0066 U	0.0053 U	0.0068 U	0.0062 U	0.0064 UJ	0.0058 U	0.007 U
Vinyl chloride	0.013 U	0.011 U	0.014 U	0.012 U	0.013 UJ	0.012 U	0.014 U
Xylenes (total)	0.0066 U	0.0053 U	0.0068 U	0.16	0.092 J	0.0058 U	0.007 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - VOCs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**SITE M**	**SITE M**	**SITE M**	**SITE M**	**SITE M**
Sample	**SED-M-S7-(0-6)**	**SED-M-S7-FD(0-6)**	**SED-M-S8 0-6**	**SED-M-S9-(0-6)**	**SED-M-S10 0-6**
Sample date	**8/1/01**	**8/1/01**	**6/22/01**	**7/10/01**	**6/22/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:					
1,1,1-Trichloroethane	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
1,1,2,2-Tetrachloroethane	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
1,1,2-Trichloroethane	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
1,1-Dichloroethane	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
1,1-Dichloroethene	0.0057 UJ	0.0057 UJ	0.0076 UJ	0.0055 U	0.0071 U
1,2-Dichloroethane	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
1,2-Dichloroethene (total)	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
1,2-Dichloropropane	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
2-Butanone (MEK)	0.1 J	0.094 J	0.1 J	0.0093 J	0.02 J
2-Hexanone	0.031 UJ	0.031 UJ	0.041 UJ	0.03 U	0.039 U
4-Methyl-2-pentanone (MIBK)	0.031 UJ	0.031 UJ	0.041 UJ	0.03 U	0.039 U
Acetone	0.55 J	0.58 J	0.18 J	0.05 U	0.038 J
Benzene	0.0063 J	0.0054 J	0.0047 J	0.0059 U	0.0077 U
Bromodichloromethane	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
Bromoform	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
Bromomethane	0.012 UJ	0.012 UJ	0.016 UJ	0.012 U	0.015 U
Carbon disulfide	0.081 J	0.078 J	0.014 J	0.0042 J	0.0063 J
Carbon tetrachloride	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
Chlorobenzene	0.51 J	0.54 J	0.84 J	0.0032 J	0.08
Chloroethane	0.012 UJ	0.012 UJ	0.016 UJ	0.012 U	0.015 U
Chloroform	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
Chloromethane	0.012 UJ	0.012 UJ	0.016 UJ	0.012 U	0.015 U
cis-1,3-Dichloropropene	0.0049 UJ	0.005 UJ	0.0066 UJ	0.0047 U	0.0062 U
Dibromochloromethane	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
Ethylbenzene	0.0045 J	0.0044 J	0.0044 J	0.0059 U	0.0077 U
Methylene chloride	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
Styrene	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
Tetrachloroethene	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
Toluene	0.0089 J	0.0084 J	0.0081 J	0.0026 J	0.0038 J
trans-1,3-Dichloropropene	0.0049 UJ	0.005 UJ	0.0066 UJ	0.0047 U	0.0062 U
Trichloroethene	0.0062 UJ	0.0062 UJ	0.0083 UJ	0.0059 U	0.0077 U
Vinyl chloride	0.012 UJ	0.012 UJ	0.016 UJ	0.012 U	0.015 U
Xylenes (total)	0.039 J	0.053 J	0.074 J	0.0059 U	0.011

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Semivolatile Organic Compounds

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	**SITE M**	**SITE M**
Sample	**SED-M-S9-(0-6)**	**SED-M-S10 0-6**
Sample date	**7/10/01**	**6/22/01**
Units	**mg/kg**	**mg/kg**
Analyte:		
1,2,4-Trichlorobenzene	0.029 J	1.5 UJ
1,2-Dichlorobenzene	0.21 UJ	1.5 UJ
1,3-Dichlorobenzene	0.21 UJ	1.5 UJ
1,4-Dichlorobenzene	0.21 UJ	4.1
2,4,5-Trichlorophenol	0.21 UJ	1.5 UJ
2,4,6-Trichlorophenol	0.086 UJ	0.64 UJ
2,4-Dichlorophenol	0.21 UJ	1.5 UJ
2,4-Dinitrophenol	1 UJ	7.7 UJ
2,4-Dinitrotoluene	0.21 UJ	1.5 UJ
2,6-Dinitrotoluene	0.21 UJ	1.5 UJ
2-Chloronaphthalene	0.21 UJ	1.5 UJ
2-Chlorophenol	0.21 UJ	1.5 UJ
2-Methylnaphthalene	0.21 UJ	1.5 UJ
2-Methylphenol (o-Cresol)	0.21 UJ	1.5 UJ
2-Nitroaniline	1 UJ	7.7 UJ
2-Nitrophenol	0.21 UJ	1.5 UJ
3&4Methylphenol	0.21 UJ	1.5 UJ
3,3'-Dichlorobenzidine	0.41 UJ	3 UJ
3-Nitroaniline	1 UJ	7.7 UJ
4,6-Dinitro-2-methylphenol	1 UJ	7.7 UJ
4-Bromophenyl phenyl ether	0.21 UJ	1.5 UJ
4-Chloro-3-methylphenol	0.21 UJ	1.5 UJ
4-Chloroaniline	0.41 UJ	3 UJ
4-Chlorophenyl phenyl ether	0.21 UJ	1.5 UJ
4-Nitroaniline	1 UJ	7.7 UJ
4-Nitrophenol	1 UJ	7.7 UJ
Acenaphthene	0.21 UJ	1.5 UJ
Acenaphthylene	0.21 UJ	1.5 UJ
Anthracene	0.21 UJ	0.23 J
Benzo(a)anthracene	0.037 J	0.68 J
Benzo(a)pyrene	0.055 J	0.48 J
Benzo(b)fluoranthene	0.084 J	0.54 J
Benzo(g,h,i)perylene	0.14 J	0.41 J
Benzo(k)fluoranthene	0.05 J	0.34 J
Bis(2-chloroethoxy)methane	0.21 UJ	1.5 UJ
Bis(2-chloroethyl)ether	0.21 UJ	1.5 UJ
Bis(2-chloroisopropyl ether)	0.21 UJ	1.5 UJ
Bis(2-ethylhexyl)phthalate	0.21 UJ	1.5 UJ
Butylbenzylphthalate	0.21 UJ	1.5 UJ
Carbazole	0.21 U	1.5 UJ
Chrysene	0.066 J	0.78 J
di-n-Butylphthalate	0.21 UJ	1.5 UJ
di-n-Octylphthalate	0.21 UJ	1.5 UJ
Dibenzo(a,h)anthracene	0.078 J	0.82 UJ
Dibenzofuran	0.21 UJ	1.5 UJ
Diethyl phthalate	0.21 UJ	1.5 UJ
Dimethyl phthalate	0.21 UJ	1.5 UJ
Fluoranthene	0.056 J	1.7 J
Fluorene	0.21 UJ	0.49 J
Hexachlorobenzene	0.086 UJ	0.64 UJ
Hexachlorobutadiene	0.21 UJ	1.5 UJ
Hexachlorocyclopentadiene	0.21 UJ	1.5 UJ
Hexachloroethane	0.21 UJ	1.5 UJ
Indeno(1,2,3-cd)pyrene	0.087 J	1.5 UJ
Isophorone	0.21 UJ	1.5 UJ
N-Nitroso-di-N-propylamine	0.21 UJ	1.5 UJ
N-Nitrosodiphenylamine	0.21 UJ	0.6 J
Naphthalene	0.21 UJ	1.5 UJ
Nitrobenzene	0.21 UJ	1.5 UJ
Pentachlorophenol	0.05	0.29
Phenanthrene	0.023 J	1.4 J
Phenol	0.21 UJ	1.5 UJ
Pyrene	0.21 UJ	1.7 J

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	SITE M	SITE M	SITE M	SITE M	SITE M
Sample	SED-M-S5 0-6	SED-M-S6-(0-6)	SED-M-S7-(0-6)	SED-M-S7-FD(0-6)	SED-M-S8 0-6
Sample date	6/22/01	7/10/01	8/1/01	8/1/01	6/22/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
1,2-Dichlorobenzene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
1,3-Dichlorobenzene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
1,4-Dichlorobenzene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	0.37 J
2,4,5-Trichlorophenol	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
2,4,6-Trichlorophenol	0.088 UJ	0.09 UJ	4.2 UJ	0.91 UJ	0.63 UJ
2,4-Dichlorophenol	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
2,4-Dinitrophenol	1.1 UJ	1.1 UJ	22 UJ	11 UJ	7.6 UJ
2,4-Dinitrotoluene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
2,6-Dinitrotoluene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
2-Chloronaphthalene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
2-Chlorophenol	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
2-Methylnaphthalene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
2-Methylphenol (o-Cresol)	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
2-Nitroaniline	1.1 UJ	1.1 UJ	22 UJ	11 UJ	7.6 UJ
2-Nitrophenol	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
3&4Methylphenol	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
3,3'-Dichlorobenzidine	0.41 UJ	0.42 UJ	8.5 UJ	4.3 UJ	3 UJ
3-Nitroaniline	1.1 UJ	1.1 UJ	22 UJ	11 UJ	7.6 UJ
4,6-Dinitro-2-methylphenol	1.1 UJ	1.1 UJ	22 UJ	11 UJ	7.6 UJ
4-Bromophenyl phenyl ether	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
4-Chloro-3-methylphenol	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
4-Chloroaniline	0.41 UJ	0.42 UJ	8.5 UJ	4.3 UJ	3 UJ
4-Chlorophenyl phenyl ether	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
4-Nitroaniline	1.1 UJ	1.1 UJ	22 UJ	11 UJ	7.6 UJ
4-Nitrophenol	1.1 UJ	1.1 UJ	22 UJ	11 UJ	7.6 UJ
Acenaphthene	0.039 J	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Acenaphthylene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Anthracene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Benzo(a)anthracene	0.026 J	0.06 J	0.72 J	0.72 J	0.22 J
Benzo(a)pyrene	0.11 UJ	0.068 J	0.44 J	0.49 J	0.8 UJ
Benzo(b)fluoranthene	0.21 UJ	0.086 J	0.58 J	0.64 J	1.5 UJ
Benzo(g,h,i)perylene	0.034 J	0.092 J	4.2 UJ	2.2 UJ	1.5 UJ
Benzo(k)fluoranthene	0.21 UJ	0.066 J	4.2 UJ	2.2 UJ	1.5 UJ
Bis(2-chloroethoxy)methane	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Bis(2-chloroethyl)ether	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Bis(2-chloroisopropyl ether)	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Bis(2-ethylhexyl)phthalate	0.095 J	0.17 J	1.4 J	0.86 J	1.5 UJ
Butylbenzylphthalate	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Carbazole	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Chrysene	0.037 J	0.076 J	0.82 J	0.81 J	0.21 J
di-n-Butylphthalate	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
di-n-Octylphthalate	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Dibenzo(a,h)anthracene	0.11 UJ	0.12 UJ	4.2 UJ	1.2 UJ	0.8 UJ
Dibenzofuran	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Diethyl phthalate	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Dimethyl phthalate	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Fluoranthene	0.068 J	0.079 J	1.3 J	1.3 J	0.41 J
Fluorene	0.04 J	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Hexachlorobenzene	0.088 UJ	0.09 UJ	4.2 UJ	0.91 UJ	0.63 UJ
Hexachlorobutadiene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Hexachlorocyclopentadiene	0.21 UJ	R	4.2 UJ	2.2 UJ	1.5 UJ
Hexachloroethane	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Indeno(1,2,3-cd)pyrene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Isophorone	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
N-Nitroso-di-N-propylamine	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
N-Nitrosodiphenylamine	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Naphthalene	0.044 J	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Nitrobenzene	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Pentachlorophenol	0.0099 J	0.017 J	0.074 J	0.047	0.07
Phenanthrene	0.097 J	0.031 J	0.38 J	0.48 J	0.37 J
Phenol	0.21 UJ	0.22 UJ	4.2 UJ	2.2 UJ	1.5 UJ
Pyrene	0.21 UJ	0.22 UJ	1.3 J	1.3 J	1.5 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	F	F	SITE M	SITE M	SITE M
Sample	CBS-CSF-T15-1-FD	CBS-CSF-T16-1	SED-M-S2 0-6	SED-M-S3-(0-6)	SED-M-S4-(0-6)
Sample date	1/8/02	2/6/02	6/22/01	7/10/01	8/1/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.22 UJ	0.24 UJ	0.23 UJ	0.16 J	2.2 UJ
1,2-Dichlorobenzene	0.22 U	0.24 UJ	0.23 UJ	0.21 J	2.2 UJ
1,3-Dichlorobenzene	0.22 U	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
1,4-Dichlorobenzene	0.22 U	0.24 UJ	0.23 UJ	1.2	2.2 UJ
2,4,5-Trichlorophenol	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
2,4,6-Trichlorophenol	0.092 UJ	0.1 UJ	0.096 UJ	0.09 UJ	0.92 UJ
2,4-Dichlorophenol	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
2,4-Dinitrophenol	1.1 UJ	1.2 UJ	1.2 UJ	1.1 UJ	11 UJ
2,4-Dinitrotoluene	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
2,6-Dinitrotoluene	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
2-Chloronaphthalene	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
2-Chlorophenol	0.22 U	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
2-Methylnaphthalene	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
2-Methylphenol (o-Cresol)	0.22 U	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
2-Nitroaniline	1.1 UJ	1.2 UJ	1.2 UJ	1.1 UJ	11 UJ
2-Nitrophenol	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
3&4Methylphenol	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
3,3'-Dichlorobenzidine	0.43 UJ	0.47 UJ	0.45 UJ	0.42 UJ	4.3 UJ
3-Nitroaniline	1.1 UJ	1.2 UJ	1.2 UJ	1.1 UJ	11 UJ
4,6-Dinitro-2-methylphenol	1.1 UJ	1.2 UJ	1.2 UJ	1.1 UJ	11 UJ
4-Bromophenyl phenyl ether	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
4-Chloro-3-methylphenol	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
4-Chloroaniline	0.43 UJ	0.47 UJ	0.45 UJ	0.1 J	4.3 UJ
4-Chlorophenyl phenyl ether	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
4-Nitroaniline	1.1 UJ	1.2 UJ	1.2 UJ	1.1 UJ	11 UJ
4-Nitrophenol	1.1 UJ	1.2 UJ	1.2 UJ	1.1 UJ	11 UJ
Acenaphthene	0.22 UJ	0.24 UJ	0.23 UJ	0.086 J	2.2 UJ
Acenaphthylene	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Anthracene	0.22 UJ	0.24 UJ	0.23 UJ	0.081 J	2.2 UJ
Benzo(a)anthracene	0.032 J	0.24 UJ	0.23 UJ	0.15 J	0.28 J
Benzo(a)pyrene	0.057 J	0.13 UJ	0.12 UJ	0.13 J	1.2 UJ
Benzo(b)fluoranthene	0.041 J	0.24 UJ	0.23 UJ	0.12 J	2.2 UJ
Benzo(g,h,i)perylene	0.058 J	0.24 UJ	0.23 UJ	0.22 J	2.2 UJ
Benzo(k)fluoranthene	0.047 J	0.24 UJ	0.23 UJ	0.099 J	2.2 UJ
Bis(2-chloroethoxy)methane	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Bis(2-chloroethyl)ether	0.22 U	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Bis(2-chloroisopropyl ether)	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Bis(2-ethylhexyl)phthalate	0.076 J	0.24 UJ	0.23 UJ	0.086 J	2.2 UJ
Butylbenzylphthalate	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Carbazole	0.22 UJ	0.24 UJ	0.23 UJ	0.032 J	2.2 UJ
Chrysene	0.034 J	0.24 UJ	0.23 UJ	0.21 J	0.38 J
di-n-Butylphthalate	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
di-n-Octylphthalate	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Dibenzo(a,h)anthracene	0.12 UJ	0.13 UJ	0.12 UJ	0.15 J	1.2 UJ
Dibenzofuran	0.22 UJ	0.24 UJ	0.23 UJ	0.077 J	2.2 UJ
Diethyl phthalate	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Dimethyl phthalate	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Fluoranthene	0.049 J	0.24 UJ	0.23 UJ	0.42 J	0.42 J
Fluorene	0.22 UJ	0.24 UJ	0.23 UJ	0.18 J	2.2 UJ
Hexachlorobenzene	0.092 UJ	0.1 UJ	0.096 UJ	0.09 UJ	0.92 UJ
Hexachlorobutadiene	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Hexachlorocyclopentadiene	0.22 UJ	0.24 UJ	R	0.22 UJ	2.2 UJ
Hexachloroethane	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Indeno(1,2,3-cd)pyrene	0.22 UJ	0.24 UJ	0.23 UJ	0.17 J	2.2 UJ
Isophorone	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
N-Nitroso-di-N-propylamine	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
N-Nitrosodiphenylamine	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Naphthalene	0.22 UJ	0.24 UJ	0.23 UJ	0.16 J	2.2 UJ
Nitrobenzene	0.22 UJ	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Pentachlorophenol	0.0062 J	0.024 U	0.014 J	0.032	0.03
Phenanthrene	0.22 UJ	0.24 UJ	0.23 UJ	0.18 J	2.2 UJ
Phenol	0.22 U	0.24 UJ	0.23 UJ	0.22 UJ	2.2 UJ
Pyrene	0.22 UJ	0.24 UJ	0.23 UJ	0.44	2.2 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F
Sample	CBS-CSF-T11-1	CBS-CSF-T12-1	CBS-CSF-T13-1	CBS-CSF-T14-1	CBS-CSF-T15-1
Sample date	1/25/02	1/23/02	1/16/02	1/8/02	1/8/02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
1,2-Dichlorobenzene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 U	0.24 UJ
1,3-Dichlorobenzene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 U	0.24 UJ
1,4-Dichlorobenzene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 U	0.24 UJ
2,4,5-Trichlorophenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2,4,6-Trichlorophenol	0.097 UJ	0.094 UJ	0.093 UJ	0.094 UJ	0.1 UJ
2,4-Dichlorophenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2,4-Dinitrophenol	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ
2,4-Dinitrotoluene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2,6-Dinitrotoluene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2-Chloronaphthalene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2-Chlorophenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 U	0.24 UJ
2-Methylnaphthalene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2-Methylphenol (o-Cresol)	0.24 UJ	0.23 UJ	0.23 UJ	0.23 U	0.24 UJ
2-Nitroaniline	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ
2-Nitrophenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
3&4Methylphenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
3,3'-Dichlorobenzidine	0.46 UJ	0.44 UJ	0.44 UJ	0.44 UJ	0.47 UJ
3-Nitroaniline	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ
4,6-Dinitro-2-methylphenol	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ
4-Bromophenyl phenyl ether	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
4-Chloro-3-methylphenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
4-Chloroaniline	0.46 UJ	0.44 UJ	0.44 UJ	0.44 UJ	0.47 UJ
4-Chlorophenyl phenyl ether	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
4-Nitroaniline	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ
4-Nitrophenol	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ
Acenaphthene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Acenaphthylene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Anthracene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Benzo(a)anthracene	0.24 UJ	0.23 UJ	0.23 UJ	0.084 J	0.044 J
Benzo(a)pyrene	0.12 UJ	0.12 UJ	0.12 UJ	0.08 J	0.048 J
Benzo(b)fluoranthene	0.24 UJ	0.23 UJ	0.23 UJ	0.18 J	0.043 J
Benzo(g,h,i)perylene	0.24 UJ	0.23 UJ	0.23 UJ	0.1 J	0.079 J
Benzo(k)fluoranthene	0.24 UJ	0.23 UJ	0.23 UJ	0.13 J	0.068 J
Bis(2-chloroethoxy)methane	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Bis(2-chloroethyl)ether	0.24 UJ	0.23 UJ	0.23 UJ	0.23 U	0.24 UJ
Bis(2-chloroisopropyl ether)	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Bis(2-ethylhexyl)phthalate	0.24 UJ	0.23 UJ	0.23 UJ	0.068 J	0.073 J
Butylbenzylphthalate	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Carbazole	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Chrysene	0.24 UJ	0.23 UJ	0.23 UJ	0.12 J	0.043 J
di-n-Butylphthalate	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
di-n-Octylphthalate	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Dibenzo(a,h)anthracene	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.13 UJ
Dibenzofuran	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Diethyl phthalate	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Dimethyl phthalate	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Fluoranthene	0.24 UJ	0.23 UJ	0.23 UJ	0.11 J	0.056 J
Fluorene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Hexachlorobenzene	0.097 UJ	0.094 UJ	0.093 UJ	0.094 UJ	0.1 UJ
Hexachlorobutadiene	0.24 UJ	0.23 UJ	0.23 UJ	0.061 J	0.24 UJ
Hexachlorocyclopentadiene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Hexachloroethane	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Indeno(1,2,3-cd)pyrene	0.24 UJ	0.23 UJ	0.23 UJ	0.092 J	0.24 UJ
Isophorone	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
N-Nitroso-di-N-propylamine	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
N-Nitrosodiphenylamine	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Naphthalene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Nitrobenzene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Pentachlorophenol	0.0015 J	0.023 U	0.023 U	0.004 J	0.0053 J
Phenanthrene	0.24 UJ	0.23 UJ	0.23 UJ	0.072 J	0.037 J
Phenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 U	0.24 UJ
Pyrene	0.24 UJ	0.23 UJ	0.23 UJ	0.11 J	0.24 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F
Sample	CBS-CSF-T7-1	CBS-CSF-T8-1	CBS-CSF-T9-1	CBS-CSF-T9-1-FD	CBS-CSF-T10-1
Sample date	1/16/02	1/23/02	1/23/02	1/23/02	1/25/02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
1,2-Dichlorobenzene	0.24 UJ	0.23 U	0.25 UJ	0.22 UJ	0.22 UJ
1,3-Dichlorobenzene	0.24 UJ	0.23 U	0.25 UJ	0.22 UJ	0.22 UJ
1,4-Dichlorobenzene	0.24 UJ	0.23 U	0.25 UJ	0.22 UJ	0.22 UJ
2,4,5-Trichlorophenol	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
2,4,6-Trichlorophenol	0.097 UJ	0.096 UJ	0.1 UJ	0.092 UJ	0.091 UJ
2,4-Dichlorophenol	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
2,4-Dinitrophenol	1.2 UJ	1.2 UJ	1.3 UJ	1.1 UJ	1.1 UJ
2,4-Dinitrotoluene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
2,6-Dinitrotoluene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
2-Chloronaphthalene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
2-Chlorophenol	0.24 UJ	0.23 U	0.25 UJ	0.22 UJ	0.22 UJ
2-Methylnaphthalene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
2-Methylphenol (o-Cresol)	0.24 UJ	0.23 U	0.25 UJ	0.22 UJ	0.22 UJ
2-Nitroaniline	1.2 UJ	1.2 UJ	1.3 UJ	1.1 UJ	1.1 UJ
2-Nitrophenol	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
3&4Methylphenol	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
3,3'-Dichlorobenzidine	0.46 UJ	0.45 UJ	0.49 UJ	0.43 UJ	0.43 UJ
3-Nitroaniline	1.2 UJ	1.2 UJ	1.3 UJ	1.1 UJ	1.1 UJ
4,6-Dinitro-2-methylphenol	1.2 UJ	1.2 UJ	1.3 UJ	1.1 UJ	1.1 UJ
4-Bromophenyl phenyl ether	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
4-Chloro-3-methylphenol	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
4-Chloroaniline	0.46 UJ	0.45 UJ	0.49 UJ	0.43 UJ	0.43 UJ
4-Chlorophenyl phenyl ether	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
4-Nitroaniline	1.2 UJ	1.2 UJ	1.3 UJ	1.1 UJ	1.1 UJ
4-Nitrophenol	1.2 UJ	1.2 UJ	1.3 UJ	1.1 UJ	1.1 UJ
Acenaphthene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Acenaphthylene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Anthracene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Benzo(a)anthracene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Benzo(a)pyrene	0.12 UJ	0.12 UJ	0.13 UJ	0.12 UJ	0.12 UJ
Benzo(b)fluoranthene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Benzo(g,h,i)perylene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Benzo(k)fluoranthene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Bis(2-chloroethoxy)methane	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Bis(2-chloroethyl)ether	0.24 UJ	0.23 U	0.25 UJ	0.22 UJ	0.22 UJ
Bis(2-chloroisopropyl ether)	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Bis(2-ethylhexyl)phthalate	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Butylbenzylphthalate	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Carbazole	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Chrysene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
di-n-Butylphthalate	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
di-n-Octylphthalate	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Dibenzo(a,h)anthracene	0.12 UJ	0.12 UJ	0.13 UJ	0.12 UJ	0.12 UJ
Dibenzofuran	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Diethyl phthalate	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Dimethyl phthalate	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Fluoranthene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Fluorene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Hexachlorobenzene	0.097 UJ	0.096 UJ	0.1 UJ	0.092 UJ	0.091 UJ
Hexachlorobutadiene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Hexachlorocyclopentadiene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Hexachloroethane	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Indeno(1,2,3-cd)pyrene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Isophorone	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
N-Nitroso-di-N-propylamine	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
N-Nitrosodiphenylamine	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Naphthalene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Nitrobenzene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Pentachlorophenol	0.0031 J	0.0023 J	0.002 J	0.0018 J	0.022 U
Phenanthrene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ
Phenol	0.24 UJ	0.23 U	0.25 UJ	0.22 UJ	0.22 UJ
Pyrene	0.24 UJ	0.23 UJ	0.25 UJ	0.22 UJ	0.22 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F
Sample	CBS-CSF-T3-1	CBS-CSF-T4-1	CBS-CSF-T5-1	CBS-CSF-T6-1	CBS-CSF-T6-1-FD
Sample date	12/11/01	12/11/01	1/8/02	1/16/02	1/16/02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
1,2-Dichlorobenzene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
1,3-Dichlorobenzene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
1,4-Dichlorobenzene	0.094 J	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
2,4,5-Trichlorophenol	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
2,4,6-Trichlorophenol	0.11 UJ	0.096 UJ	0.097 UJ	0.1 UJ	0.1 UJ
2,4-Dichlorophenol	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
2,4-Dinitrophenol	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ	1.2 UJ
2,4-Dinitrotoluene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
2,6-Dinitrotoluene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
2-Chloronaphthalene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
2-Chlorophenol	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
2-Methylnaphthalene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
2-Methylphenol (o-Cresol)	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
2-Nitroaniline	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ	1.2 UJ
2-Nitrophenol	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
3&4Methylphenol	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
3,3'-Dichlorobenzidine	0.51 UJ	0.45 UJ	0.46 UJ	0.49 UJ	0.47 UJ
3-Nitroaniline	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ	1.2 UJ
4,6-Dinitro-2-methylphenol	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ	1.2 UJ
4-Bromophenyl phenyl ether	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
4-Chloro-3-methylphenol	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
4-Chloroaniline	0.51 UJ	0.45 UJ	0.46 UJ	0.49 UJ	0.47 UJ
4-Chlorophenyl phenyl ether	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
4-Nitroaniline	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ	1.2 UJ
4-Nitrophenol	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ	1.2 UJ
Acenaphthene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Acenaphthylene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Anthracene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Benzo(a)anthracene	0.092 J	0.23 UJ	0.035 J	0.25 UJ	0.24 UJ
Benzo(a)pyrene	0.19 J	0.12 UJ	0.053 J	0.13 UJ	0.13 U
Benzo(b)fluoranthene	0.18 J	0.23 UJ	0.24 UJ	0.04 J	0.24 UJ
Benzo(g,h,i)perylene	0.13 J	0.23 UJ	0.049 J	0.058 J	0.24 U
Benzo(k)fluoranthene	0.13 J	0.23 UJ	0.24 UJ	0.25 UJ	0.24 U
Bis(2-chloroethoxy)methane	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Bis(2-chloroethyl)ether	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Bis(2-chloroisopropyl ether)	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Bis(2-ethylhexyl)phthalate	0.11 J	0.23 UJ	0.071 J	0.25 UJ	0.24 UJ
Butylbenzylphthalate	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Carbazole	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 U
Chrysene	0.14 J	0.23 UJ	0.046 J	0.035 J	0.24 UJ
di-n-Butylphthalate	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
di-n-Octylphthalate	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Dibenzo(a,h)anthracene	0.14 UJ	0.12 UJ	0.12 UJ	0.13 UJ	0.13 U
Dibenzofuran	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Diethyl phthalate	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Dimethyl phthalate	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Fluoranthene	0.17 J	0.23 UJ	0.053 J	0.062 J	0.24 UJ
Fluorene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Hexachlorobenzene	0.11 UJ	0.096 UJ	0.097 UJ	0.1 UJ	0.1 UJ
Hexachlorobutadiene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Hexachlorocyclopentadiene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Hexachloroethane	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Indeno(1,2,3-cd)pyrene	0.11 J	0.23 UJ	0.24 UJ	0.25 UJ	0.24 U
Isophorone	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
N-Nitroso-di-N-propylamine	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
N-Nitrosodiphenylamine	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Naphthalene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Nitrobenzene	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Pentachlorophenol	0.024 J	0.023 U	0.024 U	0.0024 J	0.024 U
Phenanthrene	0.098 J	0.23 UJ	0.03 J	0.25 UJ	0.24 UJ
Phenol	0.26 UJ	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ
Pyrene	0.16 J	0.23 UJ	0.24 UJ	0.25 UJ	0.24 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Creek segment	E	E	E	F	F
Sample	CBS-CSE-T15-1-FD	CBS-CSE-T16-1	CBS-CSE-T17-1	CBS-CSF-T1-1	CBS-CSF-T2-1
Sample date	12/18/01	12/21/01	12/21/01	12/21/01	12/11/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
1,2-Dichlorobenzene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
1,3-Dichlorobenzene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
1,4-Dichlorobenzene	0.22 UJ	0.23 J	0.3 UJ	0.28 UJ	0.25 UJ
2,4,5-Trichlorophenol	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
2,4,6-Trichlorophenol	0.09 UJ	0.14 UJ	0.12 UJ	0.12 UJ	0.1 UJ
2,4-Dichlorophenol	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
2,4-Dinitrophenol	1.1 UJ	1.7 UJ	1.5 UJ	1.4 UJ	1.2 UJ
2,4-Dinitrotoluene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
2,6-Dinitrotoluene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
2-Chloronaphthalene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
2-Chlorophenol	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
2-Methylnaphthalene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
2-Methylphenol (o-Cresol)	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
2-Nitroaniline	1.1 UJ	1.7 UJ	1.5 UJ	1.4 UJ	1.2 UJ
2-Nitrophenol	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
3&4Methylphenol	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
3,3'-Dichlorobenzidine	0.42 UJ	0.67 UJ	0.58 UJ	0.55 UJ	0.48 UJ
3-Nitroaniline	1.1 UJ	1.7 UJ	1.5 UJ	1.4 UJ	1.2 UJ
4,6-Dinitro-2-methylphenol	1.1 UJ	1.7 UJ	1.5 UJ	1.4 UJ	1.2 UJ
4-Bromophenyl phenyl ether	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
4-Chloro-3-methylphenol	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
4-Chloroaniline	0.42 UJ	0.67 UJ	0.58 UJ	0.55 UJ	0.48 UJ
4-Chlorophenyl phenyl ether	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
4-Nitroaniline	1.1 UJ	1.7 UJ	1.5 UJ	1.4 UJ	1.2 UJ
4-Nitrophenol	1.1 UJ	1.7 UJ	1.5 UJ	1.4 UJ	1.2 UJ
Acenaphthene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Acenaphthylene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Anthracene	0.22 UJ	0.05 J	0.3 UJ	0.28 UJ	0.25 UJ
Benzo(a)anthracene	0.22 UJ	0.26 J	0.11 J	0.28 UJ	0.25 UJ
Benzo(a)pyrene	0.12 UJ	0.42 J	0.14 J	0.15 UJ	0.049 J
Benzo(b)fluoranthene	0.22 UJ	0.51 J	0.17 J	0.28 UJ	0.039 J
Benzo(g,h,i)perylene	0.22 UJ	0.35 J	0.17 J	0.28 UJ	0.25 UJ
Benzo(k)fluoranthene	0.22 UJ	0.37 J	0.14 J	0.28 UJ	0.044 J
Bis(2-chloroethoxy)methane	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Bis(2-chloroethyl)ether	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Bis(2-chloroisopropyl ether)	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Bis(2-ethylhexyl)phthalate	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Butylbenzylphthalate	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Carbazole	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Chrysene	0.22 UJ	0.37 J	0.16 J	0.28 UJ	0.25 UJ
di-n-Butylphthalate	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
di-n-Octylphthalate	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Dibenzo(a,h)anthracene	0.12 UJ	0.14 J	0.16 UJ	0.15 UJ	0.13 UJ
Dibenzofuran	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Diethyl phthalate	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Dimethyl phthalate	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Fluoranthene	0.22 UJ	0.71 J	0.3 J	0.28 UJ	0.25 UJ
Fluorene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Hexachlorobenzene	0.09 UJ	0.14 UJ	0.12 UJ	0.12 UJ	0.1 UJ
Hexachlorobutadiene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Hexachlorocyclopentadiene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Hexachloroethane	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Indeno(1,2,3-cd)pyrene	0.22 UJ	0.35 J	0.16 J	0.28 UJ	0.25 UJ
Isophorone	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
N-Nitroso-di-N-propylamine	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
N-Nitrosodiphenylamine	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Naphthalene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Nitrobenzene	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Pentachlorophenol	0.022 U	0.033 J	0.01 J	0.028 U	0.025 U
Phenanthrene	0.023 J	0.29 J	0.13 J	0.28 UJ	0.25 UJ
Phenol	0.22 UJ	0.35 UJ	0.3 UJ	0.28 UJ	0.25 UJ
Pyrene	0.22 UJ	0.48 J	0.22 J	0.28 UJ	0.25 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	E	E	E	E	E
Sample	CBS-CSE-T11-1	CBS-CSE-T12-1	CBS-CSE-T13-2	CBS-CSE-T14-1	CBS-CSE-T15-1
Sample date	12/19/01	12/19/01	2/14/02	12/18/01	12/18/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
1,2-Dichlorobenzene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
1,3-Dichlorobenzene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
1,4-Dichlorobenzene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2,4,5-Trichlorophenol	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2,4,6-Trichlorophenol	0.1 UJ	0.11 UJ	0.1 UJ	0.1 UJ	0.089 UJ
2,4-Dichlorophenol	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2,4-Dinitrophenol	1.2 UJ	1.3 UJ	1.3 UJ	1.2 UJ	1.1 UJ
2,4-Dinitrotoluene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2,6-Dinitrotoluene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2-Chloronaphthalene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2-Chlorophenol	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2-Methylnaphthalene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2-Methylphenol (o-Cresol)	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2-Nitroaniline	1.2 UJ	1.3 UJ	1.3 UJ	1.2 UJ	1.1 UJ
2-Nitrophenol	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
3&4Methylphenol	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
3,3'-Dichlorobenzidine	0.48 UJ	0.51 UJ	0.49 UJ	0.48 UJ	0.42 UJ
3-Nitroaniline	1.2 UJ	1.3 UJ	1.3 UJ	1.2 UJ	1.1 UJ
4,6-Dinitro-2-methylphenol	1.2 UJ	1.3 UJ	1.3 UJ	1.2 UJ	1.1 UJ
4-Bromophenyl phenyl ether	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
4-Chloro-3-methylphenol	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
4-Chloroaniline	0.48 UJ	0.51 UJ	0.49 UJ	0.48 UJ	0.42 UJ
4-Chlorophenyl phenyl ether	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
4-Nitroaniline	1.2 UJ	1.3 UJ	1.3 UJ	1.2 UJ	1.1 UJ
4-Nitrophenol	1.2 UJ	1.3 UJ	1.3 UJ	1.2 UJ	1.1 UJ
Acenaphthene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Acenaphthylene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Anthracene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Benzo(a)anthracene	0.25 UJ	0.26 UJ	0.058 J	0.25 UJ	0.22 UJ
Benzo(a)pyrene	0.13 UJ	0.14 UJ	0.072 J	0.13 UJ	0.11 UJ
Benzo(b)fluoranthene	0.037 J	0.26 UJ	0.092 J	0.25 UJ	0.22 UJ
Benzo(g,h,i)perylene	0.25 UJ	0.26 UJ	0.069 J	0.25 UJ	0.22 UJ
Benzo(k)fluoranthene	0.25 UJ	0.26 UJ	0.083 J	0.25 UJ	0.22 UJ
Bis(2-chloroethoxy)methane	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Bis(2-chloroethyl)ether	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Bis(2-chloroisopropyl ether)	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Bis(2-ethylhexyl)phthalate	0.077 J	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Butylbenzylphthalate	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Carbazole	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Chrysene	0.037 J	0.26 UJ	0.086 J	0.25 UJ	0.22 UJ
di-n-Butylphthalate	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.074 J
di-n-Octylphthalate	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Dibenzo(a,h)anthracene	0.13 UJ	0.14 UJ	0.13 UJ	0.13 UJ	0.11 UJ
Dibenzofuran	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Diethyl phthalate	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Dimethyl phthalate	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Fluoranthene	0.059 J	0.26 UJ	0.12 J	0.25 UJ	0.22 UJ
Fluorene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Hexachlorobenzene	0.1 UJ	0.11 UJ	0.1 UJ	0.1 UJ	0.089 UJ
Hexachlorobutadiene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Hexachlorocyclopentadiene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Hexachloroethane	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Indeno(1,2,3-cd)pyrene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Isophorone	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
N-Nitroso-di-N-propylamine	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
N-Nitrosodiphenylamine	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Naphthalene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Nitrobenzene	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Pentachlorophenol	0.025 U	0.026 U	0.016 J	0.025 U	0.022 U
Phenanthrene	0.25 UJ	0.26 UJ	0.051 J	0.25 UJ	0.22 UJ
Phenol	0.25 UJ	0.26 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Pyrene	0.25 UJ	0.26 UJ	0.1 J	0.25 UJ	0.22 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Creek segment	E	E	E	E	E
Sample	CBS-CSE-T6-1	CBS-CSE-T7-1	CBS-CSE-T8-1	CBS-CSE-T9-1	CBS-CSE-T10-1
Sample date	12/18/01	12/19/01	12/19/01	12/19/01	12/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
1,2-Dichlorobenzene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
1,3-Dichlorobenzene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
1,4-Dichlorobenzene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
2,4,5-Trichlorophenol	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
2,4,6-Trichlorophenol	0.1 UJ	0.1 UJ	0.11 UJ	0.1 UJ	0.097 UJ
2,4-Dichlorophenol	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
2,4-Dinitrophenol	1.2 UJ	1.2 UJ	1.3 UJ	1.3 UJ	1.2 UJ
2,4-Dinitrotoluene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
2,6-Dinitrotoluene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
2-Chloronaphthalene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
2-Chlorophenol	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
2-Methylnaphthalene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
2-Methylphenol (o-Cresol)	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
2-Nitroaniline	1.2 UJ	1.2 UJ	1.3 UJ	1.3 UJ	1.2 UJ
2-Nitrophenol	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 U
3&4Methylphenol	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 U
3,3'-Dichlorobenzidine	0.47 UJ	0.48 UJ	0.52 UJ	0.49 UJ	0.46 UJ
3-Nitroaniline	1.2 UJ	1.2 UJ	1.3 UJ	1.3 UJ	1.2 UJ
4,6-Dinitro-2-methylphenol	1.2 UJ	1.2 UJ	1.3 UJ	1.3 UJ	1.2 UJ
4-Bromophenyl phenyl ether	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
4-Chloro-3-methylphenol	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
4-Chloroaniline	0.47 UJ	0.48 UJ	0.52 UJ	0.49 UJ	0.46 UJ
4-Chlorophenyl phenyl ether	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
4-Nitroaniline	1.2 UJ	1.2 UJ	1.3 UJ	1.3 UJ	1.2 UJ
4-Nitrophenol	1.2 UJ	1.2 UJ	1.3 UJ	1.3 UJ	1.2 UJ
Acenaphthene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Acenaphthylene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Anthracene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Benzo(a)anthracene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Benzo(a)pyrene	0.13 UJ	0.13 UJ	0.14 UJ	0.13 UJ	0.12 UJ
Benzo(b)fluoranthene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Benzo(g,h,i)perylene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Benzo(k)fluoranthene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Bis(2-chloroethoxy)methane	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 U
Bis(2-chloroethyl)ether	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Bis(2-chloroisopropyl ether)	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Bis(2-ethylhexyl)phthalate	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Butylbenzylphthalate	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Carbazole	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Chrysene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
di-n-Butylphthalate	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
di-n-Octylphthalate	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Dibenzo(a,h)anthracene	0.13 UJ	0.13 UJ	0.14 UJ	0.13 UJ	0.12 UJ
Dibenzofuran	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Diethyl phthalate	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Dimethyl phthalate	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Fluoranthene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Fluorene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Hexachlorobenzene	0.1 UJ	0.1 UJ	0.11 UJ	0.1 UJ	0.097 UJ
Hexachlorobutadiene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Hexachlorocyclopentadiene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	R
Hexachloroethane	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 U
Indeno(1,2,3-cd)pyrene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Isophorone	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 U
N-Nitroso-di-N-propylamine	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 U
N-Nitrosodiphenylamine	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Naphthalene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Nitrobenzene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 U
Pentachlorophenol	0.0016 J	0.025 U	0.027 U	0.025 U	0.024 U
Phenanthrene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Phenol	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ
Pyrene	0.24 UJ	0.25 UJ	0.27 UJ	0.25 UJ	0.24 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	E	E	E	E	E
Sample	CBS-CSE-T2-1	CBS-CSE-T3-1	CBS-CSE-T3-1-FD	CBS-CSE-T4-1	CBS-CSE-T5-1
Sample date	12/18/01	12/18/01	12/18/01	12/18/01	12/18/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
1,2-Dichlorobenzene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
1,3-Dichlorobenzene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
1,4-Dichlorobenzene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
2,4,5-Trichlorophenol	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
2,4,6-Trichlorophenol	0.094 UJ	0.1 UJ	0.098 UJ	0.097 UJ	0.091 UJ
2,4-Dichlorophenol	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
2,4-Dinitrophenol	1.1 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ
2,4-Dinitrotoluene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
2,6-Dinitrotoluene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
2-Chloronaphthalene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
2-Chlorophenol	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
2-Methylnaphthalene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
2-Methylphenol (o-Cresol)	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
2-Nitroaniline	1.1 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ
2-Nitrophenol	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
3&4Methylphenol	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
3,3'-Dichlorobenzidine	0.44 UJ	0.48 UJ	0.46 UJ	0.46 UJ	0.43 UJ
3-Nitroaniline	1.1 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ
4,6-Dinitro-2-methylphenol	1.1 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ
4-Bromophenyl phenyl ether	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
4-Chloro-3-methylphenol	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
4-Chloroaniline	0.44 UJ	0.48 UJ	0.46 UJ	0.46 UJ	0.43 UJ
4-Chlorophenyl phenyl ether	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
4-Nitroaniline	1.1 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ
4-Nitrophenol	1.1 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ
Acenaphthene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Acenaphthylene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Anthracene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Benzo(a)anthracene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Benzo(a)pyrene	0.12 UJ	0.13 UJ	0.13 UJ	0.12 UJ	0.12 UJ
Benzo(b)fluoranthene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Benzo(g,h,i)perylene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Benzo(k)fluoranthene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Bis(2-chloroethoxy)methane	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Bis(2-chloroethyl)ether	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Bis(2-chloroisopropyl ether)	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Bis(2-ethylhexyl)phthalate	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Butylbenzylphthalate	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Carbazole	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Chrysene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
di-n-Butylphthalate	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
di-n-Octylphthalate	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Dibenzo(a,h)anthracene	0.12 UJ	0.13 UJ	0.13 UJ	0.12 UJ	0.12 UJ
Dibenzofuran	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Diethyl phthalate	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Dimethyl phthalate	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Fluoranthene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Fluorene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Hexachlorobenzene	0.094 UJ	0.1 UJ	0.098 UJ	0.097 UJ	0.091 UJ
Hexachlorobutadiene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Hexachlorocyclopentadiene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Hexachloroethane	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Indeno(1,2,3-cd)pyrene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Isophorone	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
N-Nitroso-di-N-propylamine	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
N-Nitrosodiphenylamine	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Naphthalene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Nitrobenzene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Pentachlorophenol	0.002 J	0.025 U	0.024 U	0.024 U	0.0022 J
Phenanthrene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Phenol	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ
Pyrene	0.23 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.22 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	D	D	D	D	E
Sample	CBS-CSD-T3-1	CBS-CSD-T4-1	CBS-CSD-T5-1	CBS-CSD-T6-1	CBS-CSE-T1-1
Sample date	12/12/01	12/12/01	12/12/01	12/12/01	12/18/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
1,2-Dichlorobenzene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
1,3-Dichlorobenzene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
1,4-Dichlorobenzene	0.24 UJ	0.053 J	0.23 UJ	0.25 UJ	0.25 UJ
2,4,5-Trichlorophenol	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
2,4,6-Trichlorophenol	0.1 UJ	0.1 UJ	0.096 UJ	0.1 UJ	0.1 UJ
2,4-Dichlorophenol	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
2,4-Dinitrophenol	1.2 UJ	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ
2,4-Dinitrotoluene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
2,6-Dinitrotoluene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
2-Chloronaphthalene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
2-Chlorophenol	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
2-Methylnaphthalene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
2-Methylphenol (o-Cresol)	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
2-Nitroaniline	1.2 UJ	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ
2-Nitrophenol	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
3&4Methylphenol	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
3,3'-Dichlorobenzidine	0.47 UJ	0.49 UJ	0.45 UJ	0.48 U	0.49 UJ
3-Nitroaniline	1.2 UJ	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ
4,6-Dinitro-2-methylphenol	1.2 UJ	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ
4-Bromophenyl phenyl ether	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
4-Chloro-3-methylphenol	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
4-Chloroaniline	0.47 UJ	0.49 UJ	0.45 UJ	0.48 UJ	0.49 UJ
4-Chlorophenyl phenyl ether	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
4-Nitroaniline	1.2 UJ	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ
4-Nitrophenol	1.2 UJ	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ
Acenaphthene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Acenaphthylene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Anthracene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Benzo(a)anthracene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Benzo(a)pyrene	0.13 UJ	0.13 J	0.12 UJ	0.14 J	0.13 UJ
Benzo(b)fluoranthene	0.24 UJ	0.25 UJ	0.23 UJ	0.2 J	0.25 UJ
Benzo(g,h,i)perylene	0.24 UJ	0.13 J	0.23 UJ	0.22 J	0.25 UJ
Benzo(k)fluoranthene	0.24 UJ	0.25 UJ	0.23 UJ	0.21 J	0.25 UJ
Bis(2-chloroethoxy)methane	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Bis(2-chloroethyl)ether	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Bis(2-chloroisopropyl ether)	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Bis(2-ethylhexyl)phthalate	0.24 UJ	0.25 UJ	0.23 UJ	0.25 U	0.25 UJ
Butylbenzylphthalate	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Carbazole	0.24 UJ	0.25 UJ	0.23 UJ	0.25 U	0.25 UJ
Chrysene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
di-n-Butylphthalate	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
di-n-Octylphthalate	0.24 UJ	0.25 UJ	0.23 UJ	0.25 U	0.25 UJ
Dibenzo(a,h)anthracene	0.13 UJ	0.13 UJ	0.12 UJ	0.13 U	0.13 UJ
Dibenzofuran	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Diethyl phthalate	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Dimethyl phthalate	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Fluoranthene	0.24 UJ	0.12 J	0.23 UJ	0.19 J	0.25 UJ
Fluorene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Hexachlorobenzene	0.1 UJ	0.1 UJ	0.096 UJ	0.1 UJ	0.1 UJ
Hexachlorobutadiene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Hexachlorocyclopentadiene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Hexachloroethane	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Indeno(1,2,3-cd)pyrene	0.24 UJ	0.11 J	0.23 UJ	0.18 J	0.25 UJ
Isophorone	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
N-Nitroso-di-N-propylamine	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
N-Nitrosodiphenylamine	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Naphthalene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Nitrobenzene	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Pentachlorophenol	0.0024 J	0.0033 J	0.023 U	0.008 J	0.0033 J
Phenanthrene	0.24 UJ	0.047 J	0.23 UJ	0.12 J	0.25 UJ
Phenol	0.24 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.25 UJ
Pyrene	0.24 UJ	0.12 J	0.23 UJ	0.16 J	0.25 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	C	C	C	D	D
Sample	CBS-CSC-T7-1	CBS-CSC-T8-1	CBS-CSC-T9-1	CBS-CSD-T1-1	CBS-CSD-T2-1
Sample date	12/13/01	12/13/01	12/13/01	12/12/01	12/12/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
1,2-Dichlorobenzene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
1,3-Dichlorobenzene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
1,4-Dichlorobenzene	0.25 UJ	0.25 UJ	0.23 UJ	0.13 J	0.26 UJ
2,4,5-Trichlorophenol	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
2,4,6-Trichlorophenol	0.1 UJ	0.1 UJ	0.094 UJ	0.1 UJ	0.11 UJ
2,4-Dichlorophenol	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
2,4-Dinitrophenol	1.2 UJ	1.3 UJ	1.1 UJ	1.3 UJ	1.3 UJ
2,4-Dinitrotoluene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
2,6-Dinitrotoluene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
2-Chloronaphthalene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
2-Chlorophenol	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
2-Methylnaphthalene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
2-Methylphenol (o-Cresol)	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
2-Nitroaniline	1.2 UJ	1.3 UJ	1.1 UJ	1.3 UJ	1.3 UJ
2-Nitrophenol	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
3&4Methylphenol	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
3,3'-Dichlorobenzidine	0.48 UJ	0.49 UJ	0.44 UJ	0.49 UJ	0.5 UJ
3-Nitroaniline	1.2 UJ	1.3 UJ	1.1 UJ	1.3 UJ	1.3 UJ
4,6-Dinitro-2-methylphenol	1.2 UJ	1.3 UJ	1.1 UJ	1.3 UJ	1.3 UJ
4-Bromophenyl phenyl ether	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
4-Chloro-3-methylphenol	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
4-Chloroaniline	0.48 UJ	0.49 UJ	0.44 UJ	0.49 UJ	0.5 UJ
4-Chlorophenyl phenyl ether	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
4-Nitroaniline	1.2 UJ	1.3 UJ	1.1 UJ	1.3 UJ	1.3 UJ
4-Nitrophenol	1.2 UJ	1.3 UJ	1.1 UJ	1.3 UJ	1.3 UJ
Acenaphthene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Acenaphthylene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Anthracene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Benzo(a)anthracene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Benzo(a)pyrene	0.13 UJ	0.13 UJ	0.12 UJ	0.13 UJ	0.049 J
Benzo(b)fluoranthene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Benzo(g,h,i)perylene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Benzo(k)fluoranthene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Bis(2-chloroethoxy)methane	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Bis(2-chloroethyl)ether	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Bis(2-chloroisopropyl ether)	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Bis(2-ethylhexyl)phthalate	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Butylbenzylphthalate	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Carbazole	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Chrysene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
di-n-Butylphthalate	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
di-n-Octylphthalate	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Dibenzo(a,h)anthracene	0.13 UJ	0.13 UJ	0.12 UJ	0.13 UJ	0.14 UJ
Dibenzofuran	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Diethyl phthalate	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Dimethyl phthalate	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Fluoranthene	0.25 UJ	0.25 UJ	0.23 UJ	0.069 J	0.17 J
Fluorene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Hexachlorobenzene	0.1 UJ	0.1 UJ	0.094 UJ	0.1 UJ	0.11 UJ
Hexachlorobutadiene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Hexachlorocyclopentadiene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Hexachloroethane	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Indeno(1,2,3-cd)pyrene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Isophorone	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
N-Nitroso-di-N-propylamine	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
N-Nitrosodiphenylamine	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Naphthalene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Nitrobenzene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Pentachlorophenol	0.0017 J	0.002 J	0.0016 J	0.0032 J	0.013 J
Phenanthrene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Phenol	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.26 UJ
Pyrene	0.25 UJ	0.25 UJ	0.23 UJ	0.25 UJ	0.15 J

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	C	C	C	C	C
Sample	CBS-CSC-T3-1	CBS-CSC-T4-1	CBS-CSC-T4-1-FD	CBS-CSC-T5-1	CBS-CSC-T6-1
Sample date	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
1,2-Dichlorobenzene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
1,3-Dichlorobenzene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
1,4-Dichlorobenzene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
2,4,5-Trichlorophenol	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
2,4,6-Trichlorophenol	0.11 UJ	0.1 UJ	0.11 UJ	0.11 UJ	0.11 UJ
2,4-Dichlorophenol	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
2,4-Dinitrophenol	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ
2,4-Dinitrotoluene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
2,6-Dinitrotoluene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
2-Chloronaphthalene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
2-Chlorophenol	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
2-Methylnaphthalene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
2-Methylphenol (o-Cresol)	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
2-Nitroaniline	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ
2-Nitrophenol	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
3&4Methylphenol	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
3,3'-Dichlorobenzidine	0.51 UJ	0.49 UJ	0.5 UJ	0.52 UJ	0.52 UJ
3-Nitroaniline	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ
4,6-Dinitro-2-methylphenol	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ
4-Bromophenyl phenyl ether	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
4-Chloro-3-methylphenol	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
4-Chloroaniline	0.51 UJ	0.49 UJ	0.5 UJ	0.52 UJ	0.52 UJ
4-Chlorophenyl phenyl ether	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
4-Nitroaniline	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ
4-Nitrophenol	1.3 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1 3 UJ
Acenaphthene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Acenaphthylene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Anthracene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Benzo(a)anthracene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Benzo(a)pyrene	0.14 UJ	0.13 UJ	0.14 UJ	0.14 UJ	0.14 UJ
Benzo(b)fluoranthene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Benzo(g,h,i)perylene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.065 J
Benzo(k)fluoranthene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Bis(2-chloroethoxy)methane	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Bis(2-chloroethyl)ether	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Bis(2-chloroisopropyl ether)	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Bis(2-ethylhexyl)phthalate	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Butylbenzylphthalate	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Carbazole	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Chrysene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
di-n-Butylphthalate	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
di-n-Octylphthalate	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Dibenzo(a,h)anthracene	0.14 UJ	0.13 UJ	0.14 UJ	0.14 UJ	0.14 UJ
Dibenzofuran	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Diethyl phthalate	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Dimethyl phthalate	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Fluoranthene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Fluorene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Hexachlorobenzene	0.11 UJ	0.1 UJ	0.11 UJ	0.11 UJ	0.11 UJ
Hexachlorobutadiene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Hexachlorocyclopentadiene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Hexachloroethane	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Indeno(1,2,3-cd)pyrene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Isophorone	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
N-Nitroso-di-N-propylamine	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
N-Nitrosodiphenylamine	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Naphthalene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Nitrobenzene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Pentachlorophenol	0.003 J	0.0038 J	0.004 J	0.026 U	0.014 J
Phenanthrene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Phenol	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ
Pyrene	0.26 UJ	0.25 UJ	0.26 UJ	0.26 UJ	0.27 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	C	C
Sample	CBS-CSB-T18-E1	CBS-CSB-T18-W1	CBS-CSB-T18-W1D	CBS-CSC-T1-1	CBS-CSC-T2-1
Sample date	11/9/01	11/9/01	11/9/01	12/13/01	12/13/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
1,2-Dichlorobenzene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
1,3-Dichlorobenzene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
1,4-Dichlorobenzene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2,4,5-Trichlorophenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2,4,6-Trichlorophenol	0.097 UJ	0.096 UJ	0.094 UJ	0.096 UJ	0.1 UJ
2,4-Dichlorophenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2,4-Dinitrophenol	1.2 UJ	1.2 UJ	1.1 UJ	1.2 UJ	1.2 UJ
2,4-Dinitrotoluene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2,6-Dinitrotoluene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2-Chloronaphthalene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2-Chlorophenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2-Methylnaphthalene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2-Methylphenol (o-Cresol)	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
2-Nitroaniline	1.2 UJ	1.2 UJ	1.1 UJ	1.2 UJ	1.2 UJ
2-Nitrophenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
3&4Methylphenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
3,3'-Dichlorobenzidine	0.46 UJ	0.45 UJ	0.44 UJ	0.45 UJ	0.47 UJ
3-Nitroaniline	1.2 UJ	1.2 UJ	1.1 UJ	1.2 UJ	1.2 UJ
4,6-Dinitro-2-methylphenol	1.2 UJ	1.2 UJ	1.1 UJ	1.2 UJ	1.2 UJ
4-Bromophenyl phenyl ether	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
4-Chloro-3-methylphenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
4-Chloroaniline	0.46 UJ	0.45 UJ	0.44 UJ	0.45 UJ	0.47 UJ
4-Chlorophenyl phenyl ether	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
4-Nitroaniline	1.2 UJ	1.2 UJ	1.1 UJ	1.2 UJ	1.2 UJ
4-Nitrophenol	1.2 UJ	1.2 UJ	1.1 UJ	1.2 UJ	1.2 UJ
Acenaphthene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Acenaphthylene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Anthracene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Benzo(a)anthracene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Benzo(a)pyrene	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.13 UJ
Benzo(b)fluoranthene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Benzo(g,h,i)perylene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Benzo(k)fluoranthene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Bis(2-chloroethoxy)methane	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Bis(2-chloroethyl)ether	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Bis(2-chloroisopropyl ether)	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Bis(2-ethylhexyl)phthalate	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Butylbenzylphthalate	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Carbazole	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Chrysene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
di-n-Butylphthalate	0.056 J	0.078 J	0.078 J	0.23 UJ	0.24 UJ
di-n-Octylphthalate	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Dibenzo(a,h)anthracene	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.13 UJ
Dibenzofuran	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Diethyl phthalate	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Dimethyl phthalate	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Fluoranthene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Fluorene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Hexachlorobenzene	0.097 UJ	0.096 UJ	0.094 UJ	0.096 UJ	0.1 UJ
Hexachlorobutadiene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Hexachlorocyclopentadiene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Hexachloroethane	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Indeno(1,2,3-cd)pyrene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Isophorone	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
N-Nitroso-di-N-propylamine	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
N-Nitrosodiphenylamine	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Naphthalene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Nitrobenzene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Pentachlorophenol	0.0037 J	0.023 U	0.023 U	0.023 U	0.0038 J
Phenanthrene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.025 J
Phenol	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ
Pyrene	0.24 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.24 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B
Sample	CBS-CSB-T17-C1	CBS-CSB-T17-E1	CBS-CSB-T17-E1D	CBS-CSB-T17-WI	CBS-CSB-T18-C1
Sample date	11/9/01	11/9/01	11/9/01	11/9/01	11/9/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
1,2-Dichlorobenzene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
1,3-Dichlorobenzene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
1,4-Dichlorobenzene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
2,4,5-Trichlorophenol	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
2,4,6-Trichlorophenol	0.11 UJ	0.1 UJ	0.097 UJ	0.098 UJ	0.094 UJ
2,4-Dichlorophenol	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
2,4-Dinitrophenol	1.4 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ
2,4-Dinitrotoluene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
2,6-Dinitrotoluene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
2-Chloronaphthalene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
2-Chlorophenol	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
2-Methylnaphthalene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
2-Methylphenol (o-Cresol)	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
2-Nitroaniline	1.4 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ
2-Nitrophenol	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
3&4Methylphenol	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
3,3'-Dichlorobenzidine	0.53 UJ	0.48 UJ	0.46 UJ	0.46 UJ	0.44 UJ
3-Nitroaniline	1.4 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ
4,6-Dinitro-2-methylphenol	1.4 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ
4-Bromophenyl phenyl ether	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
4-Chloro-3-methylphenol	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
4-Chloroaniline	0.53 UJ	0.48 UJ	0.46 UJ	0.46 UJ	0.44 UJ
4-Chlorophenyl phenyl ether	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
4-Nitroaniline	1.4 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ
4-Nitrophenol	1.4 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ
Acenaphthene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Acenaphthylene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Anthracene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Benzo(a)anthracene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Benzo(a)pyrene	0.089 J	0.043 J	0.042 J	0.13 UJ	0.12 UJ
Benzo(b)fluoranthene	0.064 J	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Benzo(g,h,i)perylene	0.19 J	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Benzo(k)fluoranthene	0.058 J	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Bis(2-chloroethoxy)methane	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Bis(2-chloroethyl)ether	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Bis(2-chloroisopropyl ether)	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Bis(2-ethylhexyl)phthalate	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Butylbenzylphthalate	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Carbazole	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Chrysene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
di-n-Butylphthalate	0.1 J	0.073 J	0.044 J	0.098 J	0.074 J
di-n-Octylphthalate	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Dibenzo(a,h)anthracene	0.19 J	0.13 UJ	0.12 UJ	0.13 UJ	0.12 UJ
Dibenzofuran	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Diethyl phthalate	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Dimethyl phthalate	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Fluoranthene	0.27 UJ	0.076 J	0.052 J	0.24 UJ	0.23 UJ
Fluorene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Hexachlorobenzene	0.11 UJ	0.1 UJ	0.097 UJ	0.098 UJ	0.094 UJ
Hexachlorobutadiene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Hexachlorocyclopentadiene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Hexachloroethane	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Indeno(1,2,3-cd)pyrene	0.2 J	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Isophorone	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
N-Nitroso-di-N-propylamine	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.15 UJ
N-Nitrosodiphenylamine	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Naphthalene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Nitrobenzene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Pentachlorophenol	0.027 U	0.096	0.028	0.024 U	0.023 U
Phenanthrene	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Phenol	0.27 UJ	0.25 UJ	0.24 UJ	0.24 UJ	0.23 UJ
Pyrene	0.27 UJ	0.093 J	0.24 UJ	0.24 UJ	0.23 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B
Sample	CBS-CSB-T13-E1	CBS-CSB-T13-W1	CBS-CSB-T14-1	CBS-CSB-T15-1	CBS-CSB-T16-1
Sample date	11/19/01	11/19/01	12/20/01	12/20/01	12/20/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
1,2-Dichlorobenzene	0.2 U	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
1,3-Dichlorobenzene	0.2 U	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
1,4-Dichlorobenzene	0.2 U	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
2,4,5-Trichlorophenol	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
2,4,6-Trichlorophenol	0.082 UJ	0.094 UJ	0.11 UJ	0.092 UJ	0.1 UJ
2,4-Dichlorophenol	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
2,4-Dinitrophenol	1 UJ	1.1 UJ	1.3 UJ	1.1 UJ	1.2 UJ
2,4-Dinitrotoluene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
2,6-Dinitrotoluene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
2-Chloronaphthalene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
2-Chlorophenol	0.2 U	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
2-Methylnaphthalene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
2-Methylphenol (o-Cresol)	0.2 U	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
2-Nitroaniline	1 UJ	1.1 UJ	1.3 UJ	1.1 UJ	1.2 UJ
2-Nitrophenol	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
3&4Methylphenol	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
3,3'-Dichlorobenzidine	0.39 UJ	0.44 UJ	0.51 UJ	0.43 UJ	0.48 UJ
3-Nitroaniline	1 UJ	1.1 UJ	1.3 UJ	1.1 UJ	1.2 UJ
4,6-Dinitro-2-methylphenol	1 UJ	1.1 UJ	1.3 UJ	1.1 UJ	1.2 UJ
4-Bromophenyl phenyl ether	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
4-Chloro-3-methylphenol	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
4-Chloroaniline	0.39 UJ	0.44 UJ	0.51 UJ	0.43 UJ	0.48 UJ
4-Chlorophenyl phenyl ether	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
4-Nitroaniline	1 UJ	1.1 UJ	1.3 UJ	1.1 UJ	1.2 UJ
4-Nitrophenol	1 UJ	1.1 UJ	1.3 UJ	1.1 UJ	1.2 UJ
Acenaphthene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Acenaphthylene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Anthracene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.042 J
Benzo(a)anthracene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.26 J
Benzo(a)pyrene	0.1 UJ	0.12 UJ	0.14 UJ	0.12 UJ	0.29 J
Benzo(b)fluoranthene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.23 J
Benzo(g,h,i)perylene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.16 J
Benzo(k)fluoranthene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 J
Bis(2-chloroethoxy)methane	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Bis(2-chloroethyl)ether	0.2 U	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Bis(2-chloroisopropyl ether)	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Bis(2-ethylhexyl)phthalate	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Butylbenzylphthalate	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Carbazole	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Chrysene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.27 J
di-n-Butylphthalate	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
di-n-Octylphthalate	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Dibenzo(a,h)anthracene	0.1 UJ	0.12 UJ	0.14 UJ	0.12 UJ	0.13 UJ
Dibenzofuran	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Diethyl phthalate	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Dimethyl phthalate	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Fluoranthene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.58
Fluorene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Hexachlorobenzene	0.082 UJ	0.094 UJ	0.11 UJ	0.092 UJ	0.1 UJ
Hexachlorobutadiene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Hexachlorocyclopentadiene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Hexachloroethane	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Indeno(1,2,3-cd)pyrene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.15 J
Isophorone	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
N-Nitroso-di-N-propylamine	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
N-Nitrosodiphenylamine	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Naphthalene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Nitrobenzene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Pentachlorophenol	0.01 J	0.0037 J	0.0025 J	0.0056 J	0.012 J
Phenanthrene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.071 J
Phenol	0.2 U	0.23 UJ	0.26 UJ	0.22 UJ	0.25 UJ
Pyrene	0.2 UJ	0.23 UJ	0.26 UJ	0.22 UJ	0.63

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Creek segment	B	B	B	B	B
Sample	CBS-CSB-T11-W1	CBS-CSB-T12-C1	CBS-CSB-T12-E1	CBS-CSB-T12-W1	CBS-CSB-T13-C1
Sample date	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.22 UJ	0.04 J	0.2 UJ	0.22 UJ	0.24 UJ
1,2-Dichlorobenzene	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
1,3-Dichlorobenzene	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
1,4-Dichlorobenzene	0.22 UJ	0.24 J	0.2 UJ	0.22 UJ	0.24 UJ
2,4,5-Trichlorophenol	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
2,4,6-Trichlorophenol	0.089 UJ	0.1 UJ	0.082 UJ	0.092 UJ	0.097 UJ
2,4-Dichlorophenol	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
2,4-Dinitrophenol	1.1 UJ	1.3 UJ	1 UJ	1.1 UJ	1.2 UJ
2,4-Dinitrotoluene	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
2,6-Dinitrotoluene	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
2-Chloronaphthalene	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
2-Chlorophenol	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
2-Methylnaphthalene	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
2-Methylphenol (o-Cresol)	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
2-Nitroaniline	1.1 UJ	1.3 UJ	1 UJ	1.1 UJ	1.2 UJ
2-Nitrophenol	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
3&4Methylphenol	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
3,3'-Dichlorobenzidine	0.42 UJ	0.49 UJ	0.39 UJ	0.43 UJ	0.46 UJ
3-Nitroaniline	1.1 UJ	1.3 UJ	1 UJ	1.1 UJ	1.2 UJ
4,6-Dinitro-2-methylphenol	1.1 UJ	1.3 UJ	1 UJ	1.1 UJ	1.2 UJ
4-Bromophenyl phenyl ether	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
4-Chloro-3-methylphenol	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
4-Chloroaniline	0.42 UJ	0.49 UJ	0.39 UJ	0.43 UJ	0.46 UJ
4-Chlorophenyl phenyl ether	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
4-Nitroaniline	1.1 UJ	1.3 UJ	1 UJ	1.1 UJ	1.2 UJ
4-Nitrophenol	1.1 UJ	1.3 UJ	1 UJ	1.1 UJ	1.2 UJ
Acenaphthene	0.22 UJ	0.062 J	0.2 UJ	0.22 UJ	0.24 UJ
Acenaphthylene	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Anthracene	0.22 UJ	0.19 J	0.2 UJ	0.22 UJ	0.24 UJ
Benzo(a)anthracene	0.22 UJ	0.8	0.2 UJ	0.22 UJ	0.24 UJ
Benzo(a)pyrene	0.11 UJ	0.84	0.1 UJ	0.12 UJ	0.077 J
Benzo(b)fluoranthene	0.22 UJ	0.7	0.2 UJ	0.22 UJ	0.24 UJ
Benzo(g,h,i)perylene	0.22 UJ	0.31 J	0.2 UJ	0.22 UJ	0.24 UJ
Benzo(k)fluoranthene	0.22 UJ	0.81	0.2 UJ	0.22 UJ	0.24 UJ
Bis(2-chloroethoxy)methane	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Bis(2-chloroethyl)ether	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Bis(2-chloroisopropyl ether)	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Bis(2-ethylhexyl)phthalate	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Butylbenzylphthalate	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Carbazole	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Chrysene	0.22 UJ	0.77	0.2 UJ	0.22 UJ	0.24 UJ
di-n-Butylphthalate	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
di-n-Octylphthalate	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Dibenzo(a,h)anthracene	0.11 UJ	0.18 J	0.1 UJ	0.12 UJ	0.12 UJ
Dibenzofuran	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Diethyl phthalate	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Dimethyl phthalate	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Fluoranthene	0.22 UJ	1.6	0.2 UJ	0.22 UJ	0.24 UJ
Fluorene	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Hexachlorobenzene	0.089 UJ	0.1 UJ	0.082 UJ	0.092 UJ	0.097 UJ
Hexachlorobutadiene	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Hexachlorocyclopentadiene	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Hexachloroethane	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Indeno(1,2,3-cd)pyrene	0.22 UJ	0.34	0.2 UJ	0.22 UJ	0.24 UJ
Isophorone	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
N-Nitroso-di-N-propylamine	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
N-Nitrosodiphenylamine	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Naphthalene	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Nitrobenzene	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Pentachlorophenol	0.031	0.0036 J	0.007 J	0.021 J	0.024 U
Phenanthrene	0.22 UJ	0.052 J	0.2 UJ	0.22 UJ	0.24 UJ
Phenol	0.22 UJ	0.25 UJ	0.2 UJ	0.22 UJ	0.24 UJ
Pyrene	0.22 UJ	1.5	0.2 UJ	0.22 UJ	0.24 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B
Sample	CBS-CSB-T10-E1	CBS-CSB-T10-W1	CBS-CSB-T11-C1	CBS-CSB-T11-C1-D	CBS-CSB-T11-E1
Sample date	11/8/01	11/8/01	11/19/01	11/19/01	11/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
1,2-Dichlorobenzene	0.23 UJ	0.23 UJ	0.24 U	0.23 UJ	0.21 UJ
1,3-Dichlorobenzene	0.23 UJ	0.23 UJ	0.24 U	0.23 UJ	0.21 UJ
1,4-Dichlorobenzene	0.23 UJ	0.23 UJ	0.24 U	0.23 UJ	0.21 UJ
2,4,5-Trichlorophenol	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
2,4,6-Trichlorophenol	0.094 UJ	0.094 UJ	0.098 UJ	0.096 UJ	0.085 UJ
2,4-Dichlorophenol	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
2,4-Dinitrophenol	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ	1 UJ
2,4-Dinitrotoluene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
2,6-Dinitrotoluene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
2-Chloronaphthalene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
2-Chlorophenol	0.23 UJ	0.23 UJ	0.24 U	0.23 UJ	0.21 UJ
2-Methylnaphthalene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
2-Methylphenol (o-Cresol)	0.23 UJ	0.23 UJ	0.24 U	0.23 UJ	0.21 UJ
2-Nitroaniline	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ	1 UJ
2-Nitrophenol	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
3&4Methylphenol	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
3,3'-Dichlorobenzidine	0.44 UJ	0.44 UJ	0.46 UJ	0.45 UJ	0.4 UJ
3-Nitroaniline	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ	1 UJ
4,6-Dinitro-2-methylphenol	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ	1 UJ
4-Bromophenyl phenyl ether	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
4-Chloro-3-methylphenol	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
4-Chloroaniline	0.44 UJ	0.44 UJ	0.46 UJ	0.45 UJ	0.4 UJ
4-Chlorophenyl phenyl ether	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
4-Nitroaniline	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ	1 UJ
4-Nitrophenol	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ	1 UJ
Acenaphthene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Acenaphthylene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Anthracene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Benzo(a)anthracene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Benzo(a)pyrene	0.12 UJ	0.12 UJ	0.13 UJ	0.12 UJ	0.11 UJ
Benzo(b)fluoranthene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Benzo(g,h,i)perylene	0.23 UJ	0.23 UJ	0.041 J	0.23 UJ	0.21 UJ
Benzo(k)fluoranthene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Bis(2-chloroethoxy)methane	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Bis(2-chloroethyl)ether	0.23 UJ	0.23 UJ	0.24 U	0.23 UJ	0.21 UJ
Bis(2-chloroisopropyl ether)	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Bis(2-ethylhexyl)phthalate	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Butylbenzylphthalate	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Carbazole	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Chrysene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
di-n-Butylphthalate	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
di-n-Octylphthalate	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Dibenzo(a,h)anthracene	0.12 UJ	0.12 UJ	0.13 UJ	0.12 UJ	0.11 UJ
Dibenzofuran	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Diethyl phthalate	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Dimethyl phthalate	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Fluoranthene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Fluorene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Hexachlorobenzene	0.094 UJ	0.094 UJ	0.098 UJ	0.096 UJ	0.085 UJ
Hexachlorobutadiene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Hexachlorocyclopentadiene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Hexachloroethane	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Indeno(1,2,3-cd)pyrene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Isophorone	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
N-Nitroso-di-N-propylamine	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
N-Nitrosodiphenylamine	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Naphthalene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Nitrobenzene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Pentachlorophenol	0.0055 J	0.0073 J	0.015 J	0.026	0.009 J
Phenanthrene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ
Phenol	0.23 UJ	0.23 UJ	0.24 U	0.23 UJ	0.21 UJ
Pyrene	0.23 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.21 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Creek segment	B	B	B	B	B
Sample	CBS-CSB-T8-W1	CBS-CSB-T9-C1	CBS-CSB-T9-E1	CBS-CSB-T9-W1	CBS-CSB-T10-C1
Sample date	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
1,2-Dichlorobenzene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
1,3-Dichlorobenzene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
1,4-Dichlorobenzene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
2,4,5-Trichlorophenol	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
2,4,6-Trichlorophenol	0.094 UJ	0.094 UJ	0.092 UJ	0.091 UJ	0.1 UJ
2,4-Dichlorophenol	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
2,4-Dinitrophenol	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ
2,4-Dinitrotoluene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
2,6-Dinitrotoluene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
2-Chloronaphthalene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
2-Chlorophenol	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
2-Methylnaphthalene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
2-Methylphenol (o-Cresol)	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
2-Nitroaniline	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ
2-Nitrophenol	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
3&4Methylphenol	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
3,3'-Dichlorobenzidine	0.44 UJ	0.44 UJ	0.43 UJ	0.43 UJ	0.47 UJ
3-Nitroaniline	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ
4,6-Dinitro-2-methylphenol	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ
4-Bromophenyl phenyl ether	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
4-Chloro-3-methylphenol	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
4-Chloroaniline	0.44 UJ	0.44 UJ	0.43 UJ	0.43 UJ	0.47 UJ
4-Chlorophenyl phenyl ether	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
4-Nitroaniline	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ
4-Nitrophenol	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ
Acenaphthene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Acenaphthylene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Anthracene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Benzo(a)anthracene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Benzo(a)pyrene	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.13 UJ
Benzo(b)fluoranthene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Benzo(g,h,i)perylene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Benzo(k)fluoranthene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Bis(2-chloroethoxy)methane	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Bis(2-chloroethyl)ether	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Bis(2-chloroisopropyl ether)	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Bis(2-ethylhexyl)phthalate	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.12 J
Butylbenzylphthalate	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Carbazole	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Chrysene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
di-n-Butylphthalate	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
di-n-Octylphthalate	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Dibenzo(a,h)anthracene	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.13 UJ
Dibenzofuran	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Diethyl phthalate	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Dimethyl phthalate	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Fluoranthene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Fluorene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Hexachlorobenzene	0.094 UJ	0.094 UJ	0.092 UJ	0.091 UJ	0.1 UJ
Hexachlorobutadiene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Hexachlorocyclopentadiene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Hexachloroethane	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Indeno(1,2,3-cd)pyrene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Isophorone	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
N-Nitroso-di-N-propylamine	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
N-Nitrosodiphenylamine	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Naphthalene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Nitrobenzene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Pentachlorophenol	0.0049 J	0.023 U	0.0019 J	0.013 J	0.0039 J
Phenanthrene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Phenol	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ
Pyrene	0.23 UJ	0.23 UJ	0.22 UJ	0.22 UJ	0.24 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B
Sample	CBS-CSB-T7-C1	CBS-CSB-T7-E1	CBS-CSB-T7-W1	CBS-CSB-T8-C1	CBS-CSB-T8-E1
Sample date	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
1,2-Dichlorobenzene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
1,3-Dichlorobenzene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
1,4-Dichlorobenzene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
2,4,5-Trichlorophenol	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
2,4,6-Trichlorophenol	0.094 UJ	0.093 UJ	0.09 UJ	0.097 UJ	0.1 UJ
2,4-Dichlorophenol	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
2,4-Dinitrophenol	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ
2,4-Dinitrotoluene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
2,6-Dinitrotoluene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
2-Chloronaphthalene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
2-Chlorophenol	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
2-Methylnaphthalene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
2-Methylphenol (o-Cresol)	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
2-Nitroaniline	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ
2-Nitrophenol	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
3&4Methylphenol	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
3,3'-Dichlorobenzidine	0.44 UJ	0.44 UJ	0.42 UJ	0.46 UJ	0.47 UJ
3-Nitroaniline	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ
4,6-Dinitro-2-methylphenol	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ
4-Bromophenyl phenyl ether	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
4-Chloro-3-methylphenol	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
4-Chloroaniline	0.44 UJ	0.44 UJ	0.42 UJ	0.46 UJ	0.47 UJ
4-Chlorophenyl phenyl ether	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
4-Nitroaniline	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ
4-Nitrophenol	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ
Acenaphthene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Acenaphthylene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Anthracene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Benzo(a)anthracene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Benzo(a)pyrene	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.13 UJ
Benzo(b)fluoranthene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Benzo(g,h,i)perylene	0.23 UJ	0.23 UJ	0.22 U	0.24 UJ	0.24 UJ
Benzo(k)fluoranthene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Bis(2-chloroethoxy)methane	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Bis(2-chloroethyl)ether	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Bis(2-chloroisopropyl ether)	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Bis(2-ethylhexyl)phthalate	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Butylbenzylphthalate	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Carbazole	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Chrysene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
di-n-Butylphthalate	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
di-n-Octylphthalate	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Dibenzo(a,h)anthracene	0.12 UJ	0.12 UJ	0.12 U	0.12 UJ	0.13 UJ
Dibenzofuran	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Diethyl phthalate	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Dimethyl phthalate	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Fluoranthene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Fluorene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Hexachlorobenzene	0.094 UJ	0.093 UJ	0.09 UJ	0.097 UJ	0.1 UJ
Hexachlorobutadiene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Hexachlorocyclopentadiene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Hexachloroethane	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Indeno(1,2,3-cd)pyrene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Isophorone	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
N-Nitroso-di-N-propylamine	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
N-Nitrosodiphenylamine	0.061 J	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Naphthalene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Nitrobenzene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Pentachlorophenol	0.023 U	0.0025 J	0.017 J	0.039	0.0021 J
Phenanthrene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Phenol	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ
Pyrene	0.23 UJ	0.23 UJ	0.22 UJ	0.24 UJ	0.24 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B
Sample	CBS-CSB-T5-W1	CBS-CSB-T6-C1	CBS-CSB-T6-C1-D	CBS-CSB-T6-E1	CBS-CSB-T6-W1
Sample date	11/1/01	11/8/01	11/8/01	11/8/01	11/8/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
1,2-Dichlorobenzene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
1,3-Dichlorobenzene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
1,4-Dichlorobenzene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
2,4,5-Trichlorophenol	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
2,4,6-Trichlorophenol	0.096 UJ	0.097 UJ	0.097 UJ	0.081 UJ	0.092 UJ
2,4-Dichlorophenol	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
2,4-Dinitrophenol	1.2 UJ	1.2 UJ	1.2 UJ	0.99 UJ	1.1 UJ
2,4-Dinitrotoluene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
2,6-Dinitrotoluene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
2-Chloronaphthalene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
2-Chlorophenol	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
2-Methylnaphthalene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
2-Methylphenol (o-Cresol)	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
2-Nitroaniline	1.2 UJ	1.2 UJ	1.2 UJ	0.99 UJ	1.1 UJ
2-Nitrophenol	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
3&4Methylphenol	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
3,3'-Dichlorobenzidine	0.45 UJ	0.46 UJ	0.46 UJ	0.38 UJ	0.43 UJ
3-Nitroaniline	1.2 UJ	1.2 UJ	1.2 UJ	0.99 UJ	1.1 UJ
4,6-Dinitro-2-methylphenol	1.2 UJ	1.2 UJ	1.2 UJ	0.99 UJ	1.1 UJ
4-Bromophenyl phenyl ether	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
4-Chloro-3-methylphenol	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
4-Chloroaniline	0.45 UJ	0.46 UJ	0.46 UJ	0.38 UJ	0.43 UJ
4-Chlorophenyl phenyl ether	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
4-Nitroaniline	1.2 UJ	1.2 UJ	1.2 UJ	0.99 UJ	1.1 UJ
4-Nitrophenol	1.2 UJ	1.2 UJ	1.2 UJ	0.99 UJ	1.1 UJ
Acenaphthene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Acenaphthylene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Anthracene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Benzo(a)anthracene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Benzo(a)pyrene	0.12 UJ	0.12 UJ	0.12 UJ	0.1 UJ	0.12 UJ
Benzo(b)fluoranthene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Benzo(g,h,i)perylene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Benzo(k)fluoranthene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Bis(2-chloroethoxy)methane	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Bis(2-chloroethyl)ether	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Bis(2-chloroisopropyl ether)	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Bis(2-ethylhexyl)phthalate	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Butylbenzylphthalate	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Carbazole	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Chrysene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.032 J
di-n-Butylphthalate	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
di-n-Octylphthalate	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Dibenzo(a,h)anthracene	0.12 UJ	0.12 UJ	0.12 UJ	0.1 UJ	0.12 UJ
Dibenzofuran	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Diethyl phthalate	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Dimethyl phthalate	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Fluoranthene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.051 J
Fluorene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Hexachlorobenzene	0.096 UJ	0.097 UJ	0.097 UJ	0.081 UJ	0.092 UJ
Hexachlorobutadiene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Hexachlorocyclopentadiene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Hexachloroethane	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Indeno(1,2,3-cd)pyrene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Isophorone	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
N-Nitroso-di-N-propylamine	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
N-Nitrosodiphenylamine	0.073 J	0.24 UJ	0.24 UJ	0.2 UJ	0.048 J
Naphthalene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Nitrobenzene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Pentachlorophenol	0.023 U	0.0044 J	0.005 J	0.28	0.0033 J
Phenanthrene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Phenol	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ
Pyrene	0.23 UJ	0.24 UJ	0.24 UJ	0.2 UJ	0.22 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B
Sample	CBS-CSB-T4-C1	CBS-CSB-T4-E1	CBS-CSB-T4-W1	CBS-CSB-T5-C1	CBS-CSB-T5-E1
Sample date	11/1/01	11/1/01	11/1/01	11/1/01	11/1/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.066 J	0.048 J	0.25 UJ	0.25 UJ	0.3 J
1,2-Dichlorobenzene	0.11 J	0.057 J	0.37	0.25 UJ	0.31 J
1,3-Dichlorobenzene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
1,4-Dichlorobenzene	0.064 J	0.24 UJ	0.25 J	0.25 UJ	0.039 J
2,4,5-Trichlorophenol	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2,4,6-Trichlorophenol	0.13 J	0.097 UJ	0.15 J	0.1 UJ	0.065 J
2,4-Dichlorophenol	0.12 J	0.24 UJ	0.67	0.25 UJ	0.069 J
2,4-Dinitrophenol	1.4 UJ	1.2 UJ	1.3 UJ	1.2 UJ	1.1 UJ
2,4-Dinitrotoluene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2,6-Dinitrotoluene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2-Chloronaphthalene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2-Chlorophenol	0.28 UJ	0.24 UJ	0.098 J	0.25 UJ	0.22 UJ
2-Methylnaphthalene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2-Methylphenol (o-Cresol)	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
2-Nitroaniline	1.4 UJ	1.2 UJ	1.3 UJ	1.2 UJ	1.1 UJ
2-Nitrophenol	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
3&4Methylphenol	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
3,3'-Dichlorobenzidine	0.54 UJ	0.46 UJ	0.49 UJ	0.48 UJ	0.43 UJ
3-Nitroaniline	1.4 UJ	1.2 UJ	1.3 UJ	1.2 UJ	1.1 UJ
4,6-Dinitro-2-methylphenol	1.4 UJ	1.2 UJ	1.3 UJ	1.2 UJ	1.1 UJ
4-Bromophenyl phenyl ether	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
4-Chloro-3-methylphenol	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
4-Chloroaniline	0.076 J	0.46 UJ	0.48 J	0.48 UJ	0.43 UJ
4-Chlorophenyl phenyl ether	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
4-Nitroaniline	1.4 UJ	1.2 UJ	1.3 UJ	1.2 UJ	1.1 UJ
4-Nitrophenol	1.4 UJ	1.2 UJ	1.3 UJ	1.2 UJ	1.1 UJ
Acenaphthene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Acenaphthylene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Anthracene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Benzo(a)anthracene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Benzo(a)pyrene	0.15 UJ	0.12 UJ	0.13 UJ	0.13 UJ	0.12 UJ
Benzo(b)fluoranthene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Benzo(g,h,i)perylene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Benzo(k)fluoranthene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Bis(2-chloroethoxy)methane	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Bis(2-chloroethyl)ether	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Bis(2-chloroisopropyl ether)	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Bis(2-ethylhexyl)phthalate	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.082 J
Butylbenzylphthalate	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Carbazole	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Chrysene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
di-n-Butylphthalate	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
di-n-Octylphthalate	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Dibenzo(a,h)anthracene	0.15 UJ	0.12 UJ	0.13 UJ	0.13 UJ	0.12 UJ
Dibenzofuran	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Diethyl phthalate	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Dimethyl phthalate	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Fluoranthene	0.28 UJ	0.24 UJ	0.079 J	0.25 UJ	0.22 UJ
Fluorene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Hexachlorobenzene	0.11 UJ	0.097 UJ	0.1 UJ	0.1 UJ	0.092 UJ
Hexachlorobutadiene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Hexachlorocyclopentadiene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Hexachloroethane	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Indeno(1,2,3-cd)pyrene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Isophorone	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
N-Nitroso-di-N-propylamine	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
N-Nitrosodiphenylamine	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Naphthalene	0.28 UJ	0.24 UJ	0.1 J	0.25 UJ	0.22 UJ
Nitrobenzene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Pentachlorophenol	0.092	0.23	0.033 J	0.025 U	1
Phenanthrene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ
Phenol	0.28 UJ	0.24 UJ	0.16 J	0.25 UJ	0.22 UJ
Pyrene	0.28 UJ	0.24 UJ	0.25 UJ	0.25 UJ	0.22 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T2-E1**	**CBS-CSB-T2-W1**	**CBS-CSB-T3-C1**	**CBS-CSB-T3-E1**	**CBS-CSB-T3-W1**
Sample date	**10/31/01**	**10/31/01**	**10/31/01**	**10/31/01**	**10/31/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:					
1,2,4-Trichlorobenzene	0.24 UJ	0.23 UJ	80 J	26 J	0.23 UJ
1,2-Dichlorobenzene	0.24 UJ	0.23 UJ	53 J	23 J	0.23 UJ
1,3-Dichlorobenzene	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
1,4-Dichlorobenzene	0.24 UJ	0.23 UJ	5.5	2.4	0.23 UJ
2,4,5-Trichlorophenol	0.24 UJ	0.23 UJ	0.24 J	0.22 UJ	0.23 UJ
2,4,6-Trichlorophenol	0.097 UJ	0.093 UJ	4.3	0.99	0.096 UJ
2,4-Dichlorophenol	0.24 UJ	0.23 UJ	6.6	0.58	0.23 UJ
2,4-Dinitrophenol	1.2 UJ	1.1 UJ	1.5 UJ	1.1 UJ	1.2 UJ
2,4-Dinitrotoluene	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
2,6-Dinitrotoluene	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
2-Chloronaphthalene	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
2-Chlorophenol	0.24 UJ	0.23 UJ	0.51 J	0.097 J	0.23 UJ
2-Methylnaphthalene	0.24 UJ	0.23 UJ	0.4 J	7.3	0.23 UJ
2-Methylphenol (o-Cresol)	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
2-Nitroaniline	1.2 UJ	1.1 UJ	1.5 UJ	1.1 UJ	1.2 UJ
2-Nitrophenol	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
3&4Methylphenol	0.24 UJ	0.23 UJ	1.6	0.22 UJ	0.23 UJ
3,3'-Dichlorobenzidine	0.46 UJ	0.44 UJ	0.57 UJ	0.42 UJ	0.45 UJ
3-Nitroaniline	1.2 UJ	1.1 UJ	1.5 UJ	1.1 UJ	1.2 UJ
4,6-Dinitro-2-methylphenol	1.2 UJ	1.1 UJ	1.5 UJ	1.1 UJ	1.2 UJ
4-Bromophenyl phenyl ether	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
4-Chloro-3-methylphenol	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
4-Chloroaniline	0.46 UJ	0.44 UJ	11	7.2	0.45 UJ
4-Chlorophenyl phenyl ether	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
4-Nitroaniline	1.2 UJ	1.1 UJ	0.81 J	9 J	1.2 UJ
4-Nitrophenol	1.2 UJ	1.1 UJ	1.5 UJ	1.1 UJ	1.2 UJ
Acenaphthene	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Acenaphthylene	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Anthracene	0.24 UJ	0.23 UJ	0.29 UJ	0.31 J	0.23 UJ
Benzo(a)anthracene	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Benzo(a)pyrene	0.12 UJ	0.12 UJ	0.16 UJ	0.22 J	0.12 UJ
Benzo(b)fluoranthene	0.24 UJ	0.23 UJ	0.29 UJ	0.14 J	0.23 UJ
Benzo(g,h,i)perylene	0.24 UJ	0.23 UJ	0.29 UJ	0.086 J	0.23 UJ
Benzo(k)fluoranthene	0.24 UJ	0.23 UJ	0.29 UJ	0.11 J	0.23 UJ
Bis(2-chloroethoxy)methane	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Bis(2-chloroethyl)ether	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Bis(2-chloroisopropyl ether)	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Bis(2-ethylhexyl)phthalate	0.24 UJ	0.23 UJ	0.29 UJ	81 J	0.065 J
Butylbenzylphthalate	0.24 UJ	0.23 UJ	0.082 J	3.2	0.23 UJ
Carbazole	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Chrysene	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
di-n-Butylphthalate	0.24 UJ	0.23 UJ	0.29 UJ	0.21 J	0.23 UJ
di-n-Octylphthalate	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Dibenzo(a,h)anthracene	0.12 UJ	0.12 UJ	0.16 UJ	0.11 UJ	0.12 UJ
Dibenzofuran	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Diethyl phthalate	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Dimethyl phthalate	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Fluoranthene	0.24 UJ	0.23 UJ	0.15 J	0.19 J	0.23 UJ
Fluorene	0.24 UJ	0.23 UJ	0.1 J	0.22 UJ	0.23 UJ
Hexachlorobenzene	0.097 UJ	0.093 UJ	0.12 UJ	0.089 UJ	0.096 UJ
Hexachlorobutadiene	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Hexachlorocyclopentadiene	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Hexachloroethane	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Indeno(1,2,3-cd)pyrene	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Isophorone	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
N-Nitroso-di-N-propylamine	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
N-Nitrosodiphenylamine	0.24 UJ	0.23 UJ	0.29 UJ	0.22 UJ	0.23 UJ
Naphthalene	0.24 UJ	0.23 UJ	0.16 J	1.3	0.23 UJ
Nitrobenzene	0.24 UJ	0.23 UJ	0.16 J	0.52	0.23 UJ
Pentachlorophenol	0.013 J	0.023 U	1.9	44	0.061 J
Phenanthrene	0.24 UJ	0.23 UJ	0.13 J	2.4	0.23 UJ
Phenol	0.24 UJ	0.23 UJ	3.4	0.11 J	0.23 UJ
Pyrene	0.24 UJ	0.23 UJ	0.29 UJ	0.47	0.23 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - SVOCs
Sauget Area 1
Dead Creek Final Remedy
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B
Sample	CBS-CSB-T0-C1	CBS-CSB-T1-C1	CBS-CSB-T1-E1	CBS-CSB-T1-W1	CBS-CSB-T2-C1
Sample date	11/1/01	10/31/01	10/31/01	10/31/01	10/31/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,4-Trichlorobenzene	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
1,2-Dichlorobenzene	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
1,3-Dichlorobenzene	0.1 J	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
1,4-Dichlorobenzene	0.97	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
2,4,5-Trichlorophenol	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
2,4,6-Trichlorophenol	0.1 UJ	0.11 UJ	0.1 UJ	0.097 UJ	0.11 UJ
2,4-Dichlorophenol	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
2,4-Dinitrophenol	1.2 UJ	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ
2,4-Dinitrotoluene	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
2,6-Dinitrotoluene	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
2-Chloronaphthalene	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
2-Chlorophenol	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
2-Methylnaphthalene	4.2	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
2-Methylphenol (o-Cresol)	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
2-Nitroaniline	1.2 UJ	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ
2-Nitrophenol	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
3&4Methylphenol	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
3,3'-Dichlorobenzidine	0.48 UJ	0.5 UJ	0.48 UJ	0.46 UJ	0.52 UJ
3-Nitroaniline	1.2 UJ	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ
4,6-Dinitro-2-methylphenol	1.2 UJ	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ
4-Bromophenyl phenyl ether	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
4-Chloro-3-methylphenol	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
4-Chloroaniline	0.45 J	0.5 UJ	0.48 UJ	0.46 UJ	0.52 UJ
4-Chlorophenyl phenyl ether	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
4-Nitroaniline	1.2 UJ	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ
4-Nitrophenol	0.44 J	1.3 UJ	1.2 UJ	1.2 UJ	1.3 UJ
Acenaphthene	0.86	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Acenaphthylene	0.24 J	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Anthracene	1.4	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Benzo(a)anthracene	1.9	0.26 UJ	0.25 UJ	0.051 J	0.27 UJ
Benzo(a)pyrene	1.2	0.14 UJ	0.13 UJ	0.12 UJ	0.14 UJ
Benzo(b)fluoranthene	1.4	0.26 UJ	0.25 UJ	0.053 J	0.27 UJ
Benzo(g,h,i)perylene	0.89	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Benzo(k)fluoranthene	0.9	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Bis(2-chloroethoxy)methane	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Bis(2-chloroethyl)ether	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Bis(2-chloroisopropyl ether)	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Bis(2-ethylhexyl)phthalate	0.093 J	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Butylbenzylphthalate	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Carbazole	0.62	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Chrysene	1.9	0.26 UJ	0.25 UJ	0.053 J	0.27 UJ
di-n-Butylphthalate	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
di-n-Octylphthalate	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Dibenzo(a,h)anthracene	0.34 J	0.14 UJ	0.13 UJ	0.12 UJ	0.14 UJ
Dibenzofuran	1.6	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Diethyl phthalate	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Dimethyl phthalate	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Fluoranthene	4	0.26 UJ	0.25 UJ	0.12 J	0.27 UJ
Fluorene	3.5	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Hexachlorobenzene	0.1 UJ	0.11 UJ	0.1 UJ	0.097 UJ	0.11 UJ
Hexachlorobutadiene	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Hexachlorocyclopentadiene	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Hexachloroethane	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Indeno(1,2,3-cd)pyrene	0.83	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Isophorone	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
N-Nitroso-di-N-propylamine	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
N-Nitrosodiphenylamine	1.2	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Naphthalene	6	0.071 J	0.25 UJ	0.24 UJ	0.27 UJ
Nitrobenzene	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Pentachlorophenol	0.27	0.026 U	0.015 J	0.048	0.026 U
Phenanthrene	7	0.26 UJ	0.25 UJ	0.062 J	0.27 UJ
Phenol	0.25 UJ	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ
Pyrene	4	0.26 UJ	0.25 UJ	0.24 UJ	0.27 UJ

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Pesticides

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T0-C1	CBS-CSB-T1-C1	CBS-CSB-T1-E1	CBS-CSB-T1-W1	CBS-CSB-T2-C1	CBS-CSB-T2-E1	CBS-CSB-T2-W1
Sample date	11/1/01	10/31/01	10/31/01	10/31/01	10/31/01	10/31/01	10/31/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
4,4'-DDD	0.47 J	0.005 U	0.0048 U	0.0046 U	0.1 U	0.0092 U	0.088 U
4,4'-DDE	0.12 U	0.005 U	0.0048 U	0.035 J	0.1 U	0.0092 U	0.088 U
4,4'-DDT	0.12 U	0.005 U	0.017 J	0.051 J	0.1 U	0.0092 U	0.088 U
Aldrin	0.062 U	0.0026 U	0.0025 U	0.0024 U	0.054 U	0.0047 U	0.045 U
alpha-BHC	0.018 U	0.00076 U	0.00074 U	0.00069 U	0.016 U	0.0014 U	0.013 U
alpha-Chlordane	0.062 U	0.0026 U	0.0025 U	0.0024 U	0.054 U	0.0047 U	0.045 U
beta-BHC	0.018 U	0.00076 U	0.00074 U	0.00069 U	0.016 U	0.0031 J	0.013 U
delta-BHC	0.018 U	0.00076 U	0.00074 U	0.00069 U	0.016 U	0.0014 U	0.013 U
Dieldrin	0.12 U	0.005 U	0.0074 J	0.03 J	0.1 U	0.0092 U	0.088 U
Endosulfan I	0.062 U	0.0026 U	0.0025 U	0.0024 U	0.054 U	0.0047 U	0.045 U
Endosulfan II	0.12 U	0.005 U	0.0048 U	0.0046 U	0.1 U	0.0092 U	0.088 U
Endosulfan sulfate	0.12 U	0.005 U	0.0048 U	0.0046 U	0.1 U	0.0092 U	0.088 U
Endrin	0.12 U	0.005 U	0.0048 U	0.0046 U	0.1 U	0.0092 U	0.088 U
Endrin aldehyde	0.12 U	0.005 U	0.0048 U	0.0046 U	0.1 U	0.0092 U	0.088 U
Endrin ketone	0.12 U	0.005 U	0.0048 U	0.0046 U	0.1 U	0.0092 U	0.088 U
gamma-BHC (Lindane)	0.062 U	0.00015 J	0.0025 U	0.0024 U	0.054 U	0.0047 U	0.045 U
gamma-Chlordane	0.062 U	0.0026 U	0.0025 U	0.0024 U	0.054 U	0.0047 U	0.045 U
Heptachlor	0.062 U	0.0026 U	0.0025 U	0.0024 U	0.054 U	0.0047 U	0.045 U
Heptachlor epoxide	0.41 J	0.00043 J	0.0046 J	0.021 J	0.054 U	0.0073 J	0.045 U
Methoxychlor	0.62 U	0.026 U	0.025 U	0.024 U	0.54 U	0.047 U	0.45 U
Toxaphene	6.2 U	0.26 U	0.25 U	0.24 U	5.4 U	0.47 U	4.5 U

Notes:
J - Detected, estimated.
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Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T3-C1	CBS-CSB-T3-E1	CBS-CSB-T3-W1	CBS-CSB-T4-C1	CBS-CSB-T4-E1	CBS-CSB-T4-W1	CBS-CSB-T5-C1
Sample date	10/31/01	10/31/01	10/31/01	11/1/01	11/1/01	11/1/01	11/1/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
4,4'-DDD	0.11 U	0.084 U	0.0045 U	0.0054 U	0.0046 U	0.0049 U	0.0048 U
4,4'-DDE	0.11 U	0.084 U	0.0045 U	0.0054 U	0.0046 U	0.0049 U	0.0048 U
4,4'-DDT	0.11 U	0.084 U	0.0045 U	0.0054 U	0.0046 U	0.0049 U	0.0048 U
Aldrin	0.059 U	0.043 U	0.0023 U	0.0028 U	0.0024 U	0.0025 U	0.0025 U
alpha-BHC	0.017 U	0.013 U	0.00082 J	0.00082 U	0.00069 U	0.00075 U	0.00074 U
alpha-Chlordane	0.059 U	0.043 U	0.0023 U	0.0028 U	0.0024 U	0.0025 U	0.0025 U
beta-BHC	0.017 U	0.013 U	0.00068 U	0.00082 U	0.00069 U	0.00075 U	0.00074 U
delta-BHC	0.017 U	0.013 U	0.00068 U	0.00082 U	0.00069 U	0.00075 U	0.00074 U
Dieldrin	0.11 U	0.084 U	0.00042 J	0.0054 U	0.0046 U	0.0049 U	0.0048 U
Endosulfan I	0.059 U	0.043 U	0.0023 U	0.0028 U	0.0024 U	0.0025 U	0.0025 U
Endosulfan II	0.11 U	0.084 U	0.0045 U	0.0054 U	0.0046 U	0.0049 U	0.0048 U
Endosulfan sulfate	0.11 U	0.084 U	0.0045 U	0.0054 U	0.0046 U	0.0049 U	0.0048 U
Endrin	0.11 U	0.084 U	0.0045 U	0.0054 U	0.0046 U	0.0049 U	0.0048 U
Endrin aldehyde	0.11 U	0.084 U	0.0045 U	0.0054 U	0.0046 U	0.0049 U	0.0048 U
Endrin ketone	0.11 U	0.084 U	0.0045 U	0.0054 U	0.0046 U	0.0049 U	0.0048 U
gamma-BHC (Lindane)	0.059 U	0.043 U	0.0023 U	0.0014 J	0.0024 U	0.0025 U	0.0025 U
gamma-Chlordane	0.059 U	0.043 U	0.0023 U	0.0028 U	0.0024 U	0.0025 U	0.0025 U
Heptachlor	0.059 U	0.043 U	0.0023 U	0.0028 U	0.0024 U	0.0025 U	0.0025 U
Heptachlor epoxide	0.059 U	0.043 U	0.0023 U	0.0028 U	0.0032 J	0.0025 U	0.00034 J
Methoxychlor	0.59 U	0.43 U	0.023 U	0.028 U	0.024 U	0.025 U	0.025 U
Toxaphene	5.9 U	4.3 U	0.23 U	0.28 U	0.24 U	0.25 U	0.25 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T5-E1	CBS-CSB-T5-W1	CBS-CSB-T6-C1	CBS-CSB-T6-C1-D	CBS-CSB-T6-E1	CBS-CSB-T6-W1	CBS-CSB-T7-C1
Sample date	11/1/01	11/1/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
4,4'-DDD	0.0043 U	0.00083 J	0.0046 U	0.0046 U	0.0038 U	0.0043 U	0.0044 U
4,4'-DDE	0.0043 U	0.0045 U	0.0046 U	0.0046 U	0.0038 U	0.0043 U	0.0044 U
4,4'-DDT	0.051 J	0.0045 U	0.0046 U	0.0023 J	0.0038 U	0.0043 U	0.0044 U
Aldrin	0.0022 U	0.0023 U	0.0024 U	0.0024 U	0.002 U	0.0022 U	0.0023 U
alpha-BHC	0.00066 U	0.00068 U	0.00069 U	0.00069 U	0.00055 J	0.00066 U	0.00068 U
alpha-Chlordane	0.0022 U	0.0023 U	0.0024 UJ	0.0024 UJ	0.002 UJ	0.0022 UJ	0.0023 UJ
beta-BHC	0.00066 U	0.00068 U	0.00069 U	0.00069 U	0.0019 J	0.00066 U	0.00068 U
delta-BHC	0.00066 U	0.00068 U	0.00069 U	0.00069 U	0.00058 U	0.00066 U	0.00068 U
Dieldrin	0.0043 U	0.0045 U	0.0046 U	0.0046 U	0.0038 U	0.0043 U	0.0044 U
Endosulfan I	0.0022 U	0.0023 U	0.0024 U	0.0024 U	0.002 U	0.0022 U	0.0023 U
Endosulfan II	0.0043 U	0.0045 U	0.0046 U	0.0046 U	0.0038 U	0.0043 U	0.0044 U
Endosulfan sulfate	0.0043 U	0.0045 U	0.0046 U	0.0046 U	0.0038 U	0.0043 U	0.0044 U
Endrin	0.0043 U	0.0045 U	0.0046 U	0.0046 U	0.0038 U	0.0043 U	0.0044 U
Endrin aldehyde	0.0043 U	0.0045 U	0.0046 U	0.0046 U	0.0038 U	0.0043 U	0.0044 U
Endrin ketone	0.0043 U	0.0045 U	0.0046 U	0.0046 U	0.0038 U	0.0043 U	0.0044 U
gamma-BHC (Lindane)	0.0022 U	0.0023 U	0.0024 U	0.0024 U	0.002 U	0.0022 U	0.0023 U
gamma-Chlordane	0.0022 U	0.0023 U	0.0024 U	0.0024 U	0.002 U	0.0022 U	0.0023 U
Heptachlor	0.0022 U	0.0023 U	0.0024 U	0.0024 U	0.002 U	0.00032 J	0.0023 U
Heptachlor epoxide	0.095 J	0.0002 J	0.0024 U	0.0024 U	0.002 U	0.0022 U	0.0023 U
Methoxychlor	0.022 U	0.023 U	0.00041 J	0.024 U	0.0011 J	0.022 U	0.023 U
Toxaphene	0.22 U	0.23 U	0.24 U	0.24 U	0.2 U	0.22 U	0.23 U

Notes:
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UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T7-E1	CBS-CSB-T7-W1	CBS-CSB-T8-C1	CBS-CSB-T8-E1	CBS-CSB-T8-W1	CBS-CSB-T9-C1	CBS-CSB-T9-E1
Sample date	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
4,4'-DDD	0.0044 U	0.0042 U	0.0046 U	0.0047 U	0.0044 U	0.0044 U	0.0043 U
4,4'-DDE	0.0044 U	0.0042 UJ	0.0046 U	0.0047 U	0.0044 U	0.0044 U	0.0043 U
4,4'-DDT	0.0092 J	0.015 J	0.046 J	0.00096 J	0.0099	0.0044 U	0.0053 J
Aldrin	0.0023 U	0.0022 U	0.0024 U	0.0024 U	0.0023 U	0.0023 U	0.0022 U
alpha-BHC	0.00067 U	0.0029 J	0.00069 U	0.00071 U	0.0017 J	0.00068 U	0.00066 U
alpha-Chlordane	0.0023 UJ	0.0022 UJ	0.0024 UJ	0.0024 UJ	0.0023 UJ	0.0023 UJ	0.0022 UJ
beta-BHC	0.00067 U	0.0077 J	0.00057 J	0.00071 U	0.0054	0.00068 U	0.00066 U
delta-BHC	0.00071 J	0.00064 U	0.00069 U	0.00071 U	0.00068 U	0.00068 U	0.00066 U
Dieldrin	0.0044 U	0.0042 U	0.0094 J	0.0047 U	0.0044 U	0.00062 J	0.0043 U
Endosulfan I	0.0023 U	R	0.0024 U	0.0024 U	0.0023 U	0.0023 U	0.0022 U
Endosulfan II	0.0044 U	0.0042 U	0.01 J	0.0047 U	0.0044 U	0.0044 U	0.0043 U
Endosulfan sulfate	0.0044 U	0.0042 UJ	0.0046 U	0.0047 U	0.0044 U	0.0044 U	0.0043 U
Endrin	0.0044 U	0.0042 UJ	0.0046 U	0.0047 U	0.0044 U	0.0044 U	0.0043 U
Endrin aldehyde	0.0044 U	0.0042 U	0.0046 U	0.0047 U	0.0044 U	0.0044 U	0.0043 U
Endrin ketone	0.0044 U	0.0042 U	0.0046 U	0.0047 U	0.0044 U	0.0044 U	0.0043 U
gamma-BHC (Lindane)	0.0023 U	0.0022 U	0.0023 J	0.0024 U	0.0023 U	0.0023 U	0.0022 U
gamma-Chlordane	0.0023 U	0.0022 UJ	0.0024 U	0.0024 U	0.0023 U	0.0023 U	0.0022 U
Heptachlor	0.0023 U	0.0022 U	0.0024 U	0.0024 U	0.0023 U	0.0023 U	0.0022 U
Heptachlor epoxide	0.0023 U	0.0022 U	0.0024 U	0.0024 U	0.0023 U	0.0023 U	0.0022 U
Methoxychlor	0.023 U	0.022 U	0.024 U	0.024 U	0.00045 J	0.023 U	0.022 U
Toxaphene	0.23 U	0.22 U	0.24 U	0.24 U	0.23 U	0.23 U	0.22 U

Notes:
J - Detected, estimated.
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UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T9-W1	CBS-CSB-T10-C1	CBS-CSB-T10-E1	CBS-CSB-T10-W1	CBS-CSB-T11-C1	CBS-CSB-T11-C1-D	CBS-CSB-T11-E1
Sample date	11/8/01	11/8/01	11/8/01	11/8/01	11/19/01	11/19/01	11/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
4,4'-DDD	0.0043 U	0.003 J	0.0044 U	0.0044 U	0.0046 UJ	0.0045 U	0.004 U
4,4'-DDE	0.0043 U	0.0047 U	0.0044 U	0.0044 U	0.0046 UJ	0.0045 U	0.004 U
4,4'-DDT	0.013	0.0047 U	0.031 J	0.013	0.0046 UJ	0.0045 U	0.004 U
Aldrin	0.00036 J	0.0024 U	0.0023 U	0.0023 U	0.0024 UJ	0.0023 U	0.0021 U
alpha-BHC	0.0016 J	0.00071 U	0.00068 U	0.00068 U	0.0007 UJ	0.0016 J	0.00061 U
alpha-Chlordane	0.0022 UJ	0.0024 UJ	0.0023 UJ	0.0023 UJ	0.0024 UJ	0.0023 U	0.0021 U
beta-BHC	0.0043 J	0.00071 U	0.00068 U	0.0026	0.001 J	0.00068 U	0.00061 U
delta-BHC	0.0041 J	0.00071 U	0.00068 U	0.00068 U	0.0007 UJ	0.00068 U	0.00061 U
Dieldrin	0.0043 U	0.0047 U	0.0044 U	0.0044 U	0.0046 UJ	0.0045 U	0.004 U
Endosulfan I	0.0022 U	0.0024 U	0.0023 U	0.0023 U	0.0024 UJ	0.0023 U	0.0021 U
Endosulfan II	0.0043 U	0.0047 U	0.0044 U	0.0044 U	0.0046 UJ	0.0045 U	0.004 U
Endosulfan sulfate	0.0043 U	0.0047 U	0.0044 U	0.0044 U	0.0046 UJ	0.0045 U	0.004 U
Endrin	0.0043 U	0.0047 U	0.0044 U	0.0044 U	0.0046 UJ	0.0045 U	0.004 U
Endrin aldehyde	0.0043 U	0.0047 U	0.0044 U	0.0044 U	0.0046 UJ	0.0045 U	0.004 U
Endrin ketone	0.0043 U	0.0047 U	0.0044 U	0.0044 U	0.0046 UJ	0.0015 J	0.004 U
gamma-BHC (Lindane)	0.0022 U	0.0024 U	0.0023 U	0.0023 U	0.00033 J	0.00074 J	0.0003 J
gamma-Chlordane	0.0022 U	0.0024 U	0.0023 U	0.0023 U	0.0024 UJ	0.0023 U	0.0021 U
Heptachlor	0.0022 U	0.0024 U	0.00075 J	0.0012 J	0.0024 UJ	0.0023 U	0.0021 U
Heptachlor epoxide	0.0022 U	0.0024 U	0.0023 U	0.0023 U	0.0024 UJ	0.0026 J	0.0013 J
Methoxychlor	0.022 U	0.024 U	0.023 U	0.023 U	0.024 UJ	0.0012 J	0.021 U
Toxaphene	0.22 U	0.24 U	0.23 U	0.23 U	0.24 UJ	0.23 U	0.21 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T11-W1**	**CBS-CSB-T12-C1**	**CBS-CSB-T12-E1**	**CBS-CSB-T12-W1**	**CBS-CSB-T13-C1**	**CBS-CSB-T13-E1**	**CBS-CSB-T13-W1**
Sample date	**11/19/01**	**11/19/01**	**11/19/01**	**11/19/01**	**11/19/01**	**11/19/01**	**11/19/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
4,4'-DDD	0.0042 U	0.0049 U	0.0039 U	0.0043 U	0.0046 U	0.0039 U	0.0044 U
4,4'-DDE	0.0042 U	0.0049 U	0.0039 U	0.0043 U	0.0046 U	0.0039 U	0.0044 U
4,4'-DDT	0.0042 U	0.0049 U	0.0039 U	0.0043 U	0.0046 U	0.0039 U	0.0044 U
Aldrin	0.0022 U	0.0025 U	0.002 U	0.0022 U	0.0024 U	0.002 U	0.0023 U
alpha-BHC	0.00068 J	0.00075 U	0.000087 J	0.0003 J	0.00069 U	0.00059 U	0.00068 U
alpha-Chlordane	0.0022 U	0.0025 U	0.002 U	0.0022 U	0.0024 U	0.002 UJ	0.0023 U
beta-BHC	0.002 J	0.00075 U	0.00059 U	0.00066 U	0.00069 U	0.00059 U	0.00092
delta-BHC	0.00063 U	0.00075 U	0.00059 U	0.00066 U	0.00069 U	0.00059 U	0.00068 U
Dieldrin	0.0042 U	0.0049 U	0.0039 U	0.0043 U	0.0046 U	0.0039 U	0.0044 U
Endosulfan I	0.0022 U	0.0025 U	0.002 U	0.0022 U	0.0024 U	0.002 U	0.0023 U
Endosulfan II	0.0042 U	0.0049 U	0.0039 U	0.0043 U	0.0046 U	0.0039 U	0.0044 U
Endosulfan sulfate	0.0042 U	0.0049 U	0.0039 U	0.0043 U	0.0046 U	0.0039 U	0.0044 U
Endrin	0.0042 U	0.0049 U	0.0039 U	0.0043 U	0.0046 U	0.0039 U	0.0044 U
Endrin aldehyde	0.0042 U	0.0049 U	0.0039 U	0.0043 U	0.0046 U	0.0039 U	0.0044 U
Endrin ketone	0.0042 U	0.0049 U	0.0039 U	0.00064 J	0.00073 J	0.0039 U	0.0044 U
gamma-BHC (Lindane)	0.00082 J	0.00041 J	0.00047 J	0.00084 J	0.0024 U	0.002 U	0.0004 J
gamma-Chlordane	0.00044 J	0.0025 U	0.00034 J	0.0022 U	0.0024 U	0.002 U	0.0023 U
Heptachlor	0.0022 U	0.0025 U	0.002 U	0.0022 U	0.0024 U	0.002 UJ	0.0023 U
Heptachlor epoxide	0.0027 J	0.0025 U	0.0016 J	0.0017 J	0.0024 U	0.002 U	0.0023 U
Methoxychlor	0.022 U	0.025 U	0.02 U	0.0066 J	0.024 U	0.00055 J	0.023 U
Toxaphene	0.22 U	0.25 U	0.2 U	0.22 U	0.24 U	0.2 U	0.23 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T14-1	CBS-CSB-T15-1	CBS-CSB-T16-1	CBS-CSB-T17-C1	CBS-CSB-T17-E1	CBS-CSB-T17-E1D	CBS-CSB-T17-WI
Sample date	12/20/01	12/20/01	12/20/01	11/9/01	11/9/01	11/9/01	11/9/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
4,4'-DDD	0.01 U	0.0087 U	0.024 U	0.0053 UJ	0.024 U	0.023 U	0.0046 UJ
4,4'-DDE	0.01 U	0.004 J	0.024 U	0.0053 UJ	0.024 U	0.023 U	0.0046 UJ
4,4'-DDT	0.01 U	0.0087 U	0.13 J	0.0053 UJ	0.16 J	0.16 J	0.0046 UJ
Aldrin	0.0052 U	0.0045 U	0.012 U	0.0027 UJ	0.012 U	0.012 U	0.0024 UJ
alpha-BHC	0.0015 U	0.0013 U	0.0036 U	0.00081 UJ	0.0036 U	0.0035 U	0.0007 UJ
alpha-Chlordane	0.0052 U	0.0045 U	0.012 U	0.0027 UJ	0.012 UJ	0.012 UJ	0.0024 UJ
beta-BHC	0.0015 U	0.0013 U	0.0036 U	0.00081 UJ	0.0036 U	0.0035 U	0.0007 UJ
delta-BHC	0.0015 U	0.0013 U	0.0036 U	0.00081 UJ	0.0036 U	0.0035 U	0.0007 UJ
Dieldrin	0.01 U	0.006 J	0.038 J	0.0053 UJ	0.048 J	0.05 J	0.0046 UJ
Endosulfan I	0.0052 U	0.0045 U	0.012 U	0.0027 UJ	0.012 U	0.012 U	0.0024 UJ
Endosulfan II	0.01 U	0.0087 U	0.024 U	0.0053 UJ	0.024 U	0.023 U	0.0046 UJ
Endosulfan sulfate	0.01 U	0.0087 U	0.012 J	0.0053 UJ	0.024 U	0.023 U	0.0046 UJ
Endrin	0.01 U	0.0087 U	0.024 U	0.0053 UJ	0.024 U	0.023 U	0.0046 UJ
Endrin aldehyde	0.01 U	0.0087 U	0.024 U	0.0053 UJ	0.024 U	0.023 U	0.0046 UJ
Endrin ketone	0.01 U	0.0087 U	0.024 U	0.0053 UJ	0.024 U	0.023 U	0.0046 UJ
gamma-BHC (Lindane)	0.0052 U	0.0045 U	0.012 U	0.0027 UJ	0.012 U	0.012 U	0.0024 UJ
gamma-Chlordane	0.0052 U	0.0045 U	0.012 U	0.0027 UJ	0.012 U	0.012 U	0.0024 UJ
Heptachlor	0.0052 U	0.0045 U	0.012 U	0.0027 UJ	0.012 U	0.012 U	0.0024 UJ
Heptachlor epoxide	0.0052 U	0.0045 U	0.012 U	0.0027 UJ	0.012 U	0.012 U	0.0024 UJ
Methoxychlor	0.052 U	0.045 U	0.12 U	0.027 UJ	0.12 U	0.12 U	0.024 UJ
Toxaphene	0.52 U	0.45 U	1.2 U	0.27 UJ	1.2 U	1.2 U	0.24 UJ

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**C**	**C**	**C**
Sample	**CBS-CSB-T18-C1**	**CBS-CSB-T18-E1**	**CBS-CSB-T18-W1**	**CBS-CSB-T18-W1D**	**CBS-CSC-T1-1**	**CBS-CSC-T2-1**	**CBS-CSC-T3-1**
Sample date	**11/9/01**	**11/9/01**	**11/9/01**	**11/9/01**	**12/13/01**	**12/13/01**	**12/13/01**
Units	***mg/kg***	***mg/kg***	***mg/kg***	***mg/kg***	***mg/kg***	***mg/kg***	***mg/kg***
Analyte:							
4,4'-DDD	0.0044 UJ	0.0046 UJ	0.0045 UJ	0.0044 UJ	0.009 U	0.0094 U	0.01 U
4,4'-DDE	0.0044 UJ	0.0046 UJ	0.0045 UJ	0.0044 UJ	0.009 U	0.0094 U	0.01 U
4,4'-DDT	0.0044 UJ	R	0.0045 UJ	0.0044 UJ	0.009 U	0.0094 U	0.01 U
Aldrin	0.0023 UJ	0.0024 UJ	0.0023 UJ	0.0023 UJ	0.0046 U	0.0048 U	0.0052 U
alpha-BHC	0.00068 UJ	0.00069 UJ	0.00068 UJ	0.00068 UJ	0.0014 U	0.0014 U	0.0015 U
alpha-Chlordane	0.0023 UJ	0.0024 UJ	0.0023 UJ	0.0023 UJ	0.0046 U	0.0048 U	0.0052 U
beta-BHC	0.00068 UJ	0.00069 UJ	0.00068 UJ	0.00068 UJ	0.0014 U	0.0014 U	0.0015 U
delta-BHC	0.00068 UJ	0.00069 UJ	0.00068 UJ	0.00068 UJ	0.0014 U	0.00099 J	0.0015 U
Dieldrin	0.0044 UJ	0.0046 UJ	0.0045 UJ	0.0044 UJ	0.0014 J	0.011 J	0.0012 J
Endosulfan I	0.0023 UJ	0.0024 UJ	0.0023 UJ	0.0023 UJ	0.0046 U	0.0048 U	0.0052 U
Endosulfan II	0.0044 UJ	0.0046 UJ	0.0045 UJ	0.0044 UJ	0.009 U	0.0094 U	0.01 U
Endosulfan sulfate	0.0044 UJ	0.0046 UJ	0.0045 UJ	0.0044 UJ	0.009 U	0.007 J	0.01 U
Endrin	0.0044 UJ	0.0046 UJ	0.0045 UJ	0.0044 UJ	0.009 U	0.0094 U	0.01 U
Endrin aldehyde	0.0044 UJ	0.0046 UJ	0.0045 UJ	0.0044 UJ	0.009 U	0.0094 U	0.01 U
Endrin ketone	0.0044 U	0.0046 UJ	0.0045 UJ	0.0044 UJ	0.009 U	0.01 J	0.01 U
gamma-BHC (Lindane)	0.0023 UJ	0.0024 UJ	0.0023 UJ	0.0023 UJ	0.0046 U	0.0048 U	0.0052 U
gamma-Chlordane	0.0023 UJ	0.0024 UJ	0.0023 UJ	0.0023 UJ	0.0011 J	0.0048 U	0.0052 U
Heptachlor	0.0023 UJ	0.0024 UJ	0.0023 UJ	0.0023 UJ	0.0046 U	0.0048 U	0.0052 U
Heptachlor epoxide	0.0023 UJ	0.0024 UJ	0.0023 UJ	0.0023 UJ	0.0046 U	0.0048 U	0.0052 U
Methoxychlor	0.023 UJ	0.024 UJ	0.023 UJ	0.023 UJ	0.046 U	0.0071 J	0.052 U
Toxaphene	0.23 U	0.24 UJ	0.23 UJ	0.23 UJ	0.46 U	0.48 U	0.52 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	C	C	C	C	C	C	C
Sample	CBS-CSC-T4-1	CBS-CSC-T4-1-FD	CBS-CSC-T5-1	CBS-CSC-T6-1	CBS-CSC-T7-1	CBS-CSC-T8-1	CBS-CSC-T9-1
Sample date	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
4,4'-DDD	0.0098 U	0.01 U	0.01 U	0.026 U	0.024 U	0.0098 U	0.022 U
4,4'-DDE	0.0098 U	0.01 U	0.01 U	0.026 U	0.024 U	0.0098 U	0.022 U
4,4'-DDT	0.0098 U	0.01 U	0.01 U	0.026 U	0.024 U	0.0098 U	0.022 U
Aldrin	0.0051 U	0.0052 U	0.0053 U	0.013 U	0.012 U	0.0051 U	0.011 U
alpha-BHC	0.0015 U	0.0015 U	0.0016 U	0.004 U	0.0037 U	0.0015 U	0.0034 U
alpha-Chlordane	0.0051 U	0.00092 J	0.0053 U	0.013 U	0.012 U	0.0051 U	0.011 U
beta-BHC	0.0015 U	0.0015 U	0.0016 U	0.004 U	0.0037 U	0.0015 U	0.0034 U
delta-BHC	0.00017 J	0.00059 J	0.0016 U	0.004 U	0.0037 U	0.00037 J	0.0034 U
Dieldrin	0.0014 J	0.0049 J	0.00046 J	0.0078 J	0.0013 J	0.0055 J	0.022 U
Endosulfan I	0.0051 U	0.0052 U	0.0053 U	0.013 U	0.012 U	0.0051 U	0.011 U
Endosulfan II	0.0098 U	0.01 U	0.01 U	0.026 U	0.024 U	0.0098 U	0.022 U
Endosulfan sulfate	0.0098 U	0.01 U	0.01 U	0.002 J	0.024 U	0.00072 J	0.022 U
Endrin	0.0098 U	0.01 U	0.01 U	0.026 U	0.024 U	0.0098 U	0.022 U
Endrin aldehyde	0.0098 U	0.01 U	0.01 U	0.026 U	0.024 U	0.0098 U	0.022 U
Endrin ketone	0.0098 U	0.01 U	0.01 U	0.026 U	0.024 U	0.0098 U	0.022 U
gamma-BHC (Lindane)	0.0051 U	0.0052 U	0.0053 U	0.013 U	0.012 U	0.0051 U	0.011 U
gamma-Chlordane	0.0051 U	0.0052 U	0.0053 U	0.013 U	0.012 U	0.0051 U	0.011 U
Heptachlor	0.0051 U	0.0052 U	0.0053 U	0.013 U	0.012 U	0.0051 U	0.011 U
Heptachlor epoxide	0.0051 U	0.0052 U	0.0053 U	0.013 U	0.012 U	0.0051 U	0.011 U
Methoxychlor	0.003 J	0.0027 J	0.053 U	0.13 U	0.12 U	0.0025 J	0.11 U
Toxaphene	0.51 U	0.52 U	0.53 U	1.3 U	1.2 U	0.51 U	1.1 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	D	D	D	D	D	D	E
Sample	CBS-CSD-T1-1	CBS-CSD-T2-1	CBS-CSD-T3-1	CBS-CSD-T4-1	CBS-CSD-T5-1	CBS-CSD-T6-1	CBS-CSE-T1-1
Sample date	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/18/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
4,4'-DDD	0.0014 J	0.025 U	0.0094 U	0.025 U	0.11 U	0.024 U	0.0049 U
4,4'-DDE	0.025 U	0.025 U	0.0094 U	0.025 U	0.11 U	0.024 U	0.00063 J
4,4'-DDT	0.025 U	0.025 U	0.0094 U	0.025 U	0.11 U	0.24	0.00068 J
Aldrin	0.00075 J	0.013 U	0.0048 U	0.013 U	0.058 U	0.009 J	0.0025 U
alpha-BHC	0.0037 U	0.0038 U	0.0014 U	0.0037 U	0.017 U	0.0036 U	0.00075 U
alpha-Chlordane	0.013 U	0.013 U	0.0048 U	0.013 U	0.058 U	0.012 J	0.0025 U
beta-BHC	0.0037 U	0.0038 U	0.0014 U	0.0037 U	0.017 U	0.0036 U	0.00075 U
delta-BHC	0.00043 J	0.00053 J	0.0014 U	0.00056 J	0.017 U	0.0019 J	0.00075 U
Dieldrin	0.0013 J	0.014 J	0.0021 J	0.0022 J	0.11 U	0.69	0.0013 J
Endosulfan I	0.013 U	0.013 U	0.0048 U	0.013 U	0.058 U	0.012 U	0.0025 U
Endosulfan II	0.025 U	0.025 U	0.0094 U	0.025 U	0.11 U	0.024 U	0.0049 U
Endosulfan sulfate	0.025 U	0.025 U	0.0094 U	0.025 U	0.11 U	0.0095 J	0.0049 U
Endrin	0.025 U	0.025 U	0.0094 U	0.025 U	0.11 U	0.024 U	0.0049 U
Endrin aldehyde	0.025 U	0.025 U	0.0094 U	0.025 U	0.11 U	0.024 U	0.0049 U
Endrin ketone	0.025 U	0.025 U	0.0094 U	0.025 U	0.11 U	0.024 U	0.0049 U
gamma-BHC (Lindane)	0.013 U	0.013 U	0.0048 U	0.013 U	0.058 U	0.012 U	0.0025 U
gamma-Chlordane	0.013 U	0.013 U	0.0048 U	0.013 U	0.004 J	0.067	0.0025 U
Heptachlor	0.013 U	0.013 U	0.0048 U	0.013 U	0.058 U	0.012 U	0.0025 U
Heptachlor epoxide	0.013 U	0.013 U	0.0048 U	0.013 U	0.058 U	0.012 U	0.0025 U
Methoxychlor	0.13 U	0.13 U	0.048 U	0.004 J	0.0088 J	0.062 J	0.025 U
Toxaphene	1.3 U	1.3 U	0.48 U	1.3 U	5.8 U	1.2 U	0.25 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection
limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**E**	**E**	**E**	**E**	**E**	**E**	**E**
Sample	**CBS-CSE-T2-1**	**CBS-CSE-T3-1**	**CBS-CSE-T3-1-FD**	**CBS-CSE-T4-1**	**CBS-CSE-T5-1**	**CBS-CSE-T6-1**	**CBS-CSE-T7-1**
Sample date	**12/18/01**	**12/18/01**	**12/18/01**	**12/18/01**	**12/18/01**	**12/18/01**	**12/19/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
4,4'-DDD	0.0044 U	0.0048 U	0.0046 U	0.0046 U	0.0043 U	0.0047 U	0.00059 J
4,4'-DDE	0.00024 J	0.00053 J	0.00035 J	0.00024 J	0.0043 U	0.0047 U	0.0048 U
4,4'-DDT	0.00056 J	0.00077 J	0.0046 U	0.0046 U	0.0043 U	0.017 J	0.0048 U
Aldrin	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0022 U	0.0024 U	0.0025 U
alpha-BHC	0.00068 U	0.00074 U	0.0007 U	0.00069 U	0.00065 U	0.00071 U	0.00072 U
alpha-Chlordane	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0022 U	0.0024 U	0.0025 U
beta-BHC	0.00068 U	0.00074 U	0.0007 U	0.00069 U	0.00065 U	0.00071 U	0.00072 U
delta-BHC	0.00068 U	0.00074 U	0.0007 U	0.00069 U	0.00065 U	0.00071 U	0.00072 U
Dieldrin	0.0012 J	0.00087 J	0.00061 J	0.00046 J	0.00019 J	0.0064 J	0.0048 U
Endosulfan I	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0022 U	0.0024 U	0.0025 U
Endosulfan II	0.00066 J	0.0048 U	0.0046 U	0.0046 U	0.0043 U	0.0047 U	0.0048 U
Endosulfan sulfate	0.0044 U	0.0048 U	0.0046 U	0.0046 U	0.0043 U	0.0047 U	0.0048 U
Endrin	0.0044 U	0.0048 U	0.0046 U	0.0046 U	0.0043 U	0.0047 U	0.0048 U
Endrin aldehyde	0.0044 U	0.0048 U	0.0046 U	0.0046 U	0.0043 U	0.0047 U	0.0048 U
Endrin ketone	0.0044 U	0.0048 U	0.0046 U	0.0046 U	0.0043 U	0.0047 U	0.0048 U
gamma-BHC (Lindane)	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0022 U	0.0024 U	0.0025 U
gamma-Chlordane	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0022 U	0.0024 U	0.0025 U
Heptachlor	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0022 U	0.0024 U	0.0025 U
Heptachlor epoxide	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0022 U	0.0024 U	0.00018 J
Methoxychlor	0.023 U	0.025 U	0.024 U	0.00049 J	0.022 U	0.024 U	0.00078 J
Toxaphene	0.23 U	0.25 U	0.24 U	0.24 U	0.22 U	0.24 U	0.25 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	E	E	E	E	E	E	E
Sample	CBS-CSE-T8-1	CBS-CSE-T9-1	CBS-CSE-T10-1	CBS-CSE-T11-1	CBS-CSE-T12-1	CBS-CSE-T13-2	CBS-CSE-T14-1
Sample date	12/19/01	12/19/01	12/19/01	12/19/01	12/19/01	2/14/02	12/18/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
4,4'-DDD	0.0052 U	0.0049 U	0.0046 U	0.0048 U	0.0051 U	0.02 UJ	0.0048 U
4,4'-DDE	0.0052 U	0.0049 U	0.0046 U	0.0048 U	0.0051 U	0.02 UJ	0.00085 J
4,4'-DDT	0.00073 J	0.0049 U	0.0046 U	0.0017 J	0.0051 U	0.02 UJ	0.0048 U
Aldrin	0.0027 U	0.0025 U	0.0024 UJ	0.0025 U	0.0026 U	0.01 UJ	0.0025 U
alpha-BHC	0.00079 U	0.00075 U	0.00069 U	0.00074 U	0.00077 U	0.003 UJ	0.00074 U
alpha-Chlordane	0.0027 U	0.0025 U	0.0024 UJ	0.0025 U	0.0026 U	0.01 UJ	0.0025 U
beta-BHC	0.00079 U	0.00075 U	0.00069 U	0.00074 U	0.00077 U	0.003 UJ	0.00074 U
delta-BHC	0.00079 U	0.00075 U	0.00069 U	0.00074 U	0.00077 U	0.003 UJ	0.00074 U
Dieldrin	0.0002 J	0.0049 U	0.0046 UJ	0.00031 J	0.0051 U	0.027 J	0.00067 J
Endosulfan I	0.00015 J	0.0025 U	0.00011 J	0.0025 U	0.00017 J	0.01 UJ	0.0025 U
Endosulfan II	0.0052 U	0.0049 U	0.0046 U	0.0048 U	0.0051 U	0.02 UJ	0.0048 U
Endosulfan sulfate	0.0052 U	0.0049 U	0.0046 U	0.0048 U	0.0051 U	0.02 UJ	0.0048 U
Endrin	0.0052 U	0.0049 U	0.0046 U	0.0048 U	0.0051 U	0.02 UJ	0.0048 U
Endrin aldehyde	0.0052 U	0.0049 U	0.0046 U	0.0048 U	0.0051 U	0.02 UJ	0.0048 U
Endrin ketone	0.0052 U	0.0049 U	0.0046 U	0.0048 U	0.0051 U	0.02 UJ	0.0048 U
gamma-BHC (Lindane)	0.0027 U	0.0025 U	0.0024 U	0.0025 U	0.0026 U	0.01 UJ	0.0025 U
gamma-Chlordane	0.0027 U	0.00024 J	0.0024 U	0.0025 U	0.0026 U	0.01 UJ	0.0025 U
Heptachlor	0.0027 U	0.0025 U	0.0024 U	0.0025 U	0.0026 U	0.01 UJ	0.0025 U
Heptachlor epoxide	0.0003 J	0.00059 J	0.00052 J	0.00058 J	0.0026 U	0.01 UJ	0.0025 U
Methoxychlor	0.027 U	0.00089 J	0.024 U	0.025 U	0.026 U	0.1 UJ	0.025 U
Toxaphene	0.27 U	0.25 U	0.24 U	0.25 U	0.26 U	1 UJ	0.25 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	E	E	E	E	F	F	F
Sample	CBS-CSE-T15-1	CBS-CSE-T15-1-FD	CBS-CSE-T16-1	CBS-CSE-T17-1	CBS-CSF-T1-1	CBS-CSF-T2-1	CBS-CSF-T3-1
Sample date	12/18/01	12/18/01	12/21/01	12/21/01	12/21/01	12/11/01	12/11/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
4,4'-DDD	0.0042 U	0.0042 U	0.034 UJ	0.047 J	0.0055 U	0.0048 U	0.0051 U
4,4'-DDE	0.0042 U	0.0042 U	0.034 UJ	0.0072 J	0.00036 J	0.0048 U	0.0051 U
4,4'-DDT	0.0042 U	0.0042 U	0.034 UJ	0.0091 J	0.0055 UJ	0.00029 J	0.0075 J
Aldrin	0.0022 U	0.0022 U	0.017 UJ	0.015 U	0.0028 UJ	0.0025 U	0.00023 J
alpha-BHC	0.00063 U	0.00064 U	0.0013 J	0.0044 U	0.00083 U	0.00074 U	0.00077 U
alpha-Chlordane	0.0022 U	0.0022 U	0.017 UJ	0.0087 J	0.0028 U	0.0025 U	0.0041 J
beta-BHC	0.00063 U	0.00064 U	0.0051 UJ	0.0044 U	0.00083 U	0.00074 U	0.0039 J
delta-BHC	0.00063 U	0.00064 U	0.0051 UJ	0.0044 U	0.00083 U	0.00074 U	0.00077 U
Dieldrin	0.0042 U	0.0006 J	0.034 J	0.0098 J	0.00035 J	0.0048 U	0.0082 J
Endosulfan I	0.0022 U	0.0022 U	0.017 UJ	0.015 U	0.0028 U	0.0025 U	0.0026 U
Endosulfan II	0.0042 U	0.0042 U	0.034 UJ	0.029 U	0.0055 U	0.0048 U	0.0051 U
Endosulfan sulfate	0.0042 U	0.0042 U	0.016 J	0.0015 J	0.0055 U	0.0048 U	0.0043 J
Endrin	0.0042 U	0.0042 U	0.034 UJ	0.029 U	0.0055 U	0.0048 U	0.0051 U
Endrin aldehyde	0.0042 U	0.0042 U	0.034 UJ	0.029 U	0.0055 U	0.0048 U	0.0051 U
Endrin ketone	0.0042 U	0.0042 U	0.034 UJ	0.029 U	0.0055 U	0.0048 U	0.0051 U
gamma-BHC (Lindane)	0.0022 U	0.0022 U	0.017 UJ	0.015 U	0.0028 U	0.0025 U	0.0026 U
gamma-Chlordane	0.0022 U	0.0022 U	0.017 UJ	0.0055 J	0.0028 UJ	0.0025 U	0.0038 J
Heptachlor	0.0022 U	0.0022 U	0.017 UJ	0.015 U	0.0028 U	0.0025 U	0.0026 U
Heptachlor epoxide	0.0022 U	0.0022 U	0.017 UJ	0.015 U	0.0028 UJ	0.0025 U	0.0026 U
Methoxychlor	0.022 U	0.022 U	0.17 UJ	0.15 U	0.028 U	0.025 U	0.026 U
Toxaphene	0.22 U	0.22 U	1.7 UJ	1.5 U	0.28 U	0.25 U	0.26 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F	F	F
Sample	CBS-CSF-T4-1	CBS-CSF-T5-1	CBS-CSF-T6-1	CBS-CSF-T6-1-FD	CBS-CSF-T7-1	CBS-CSF-T8-1	CBS-CSF-T9-1
Sample date	12/11/01	1/8/02	1/16/02	1/16/02	1/16/02	1/23/02	1/23/02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
4,4'-DDD	0.0045 U	0.0046 U	0.025 U	0.0094 U	0.0092 U	0.009 U	0.0098 U
4,4'-DDE	0.0045 U	0.0046 U	0.0012 J	0.0094 U	0.0016 J	0.009 U	0.0098 U
4,4'-DDT	0.0045 U	0.0046 U	0.004 J	0.0094 UJ	0.0092 UJ	0.009 U	0.0098 U
Aldrin	0.0023 U	0.0024 U	0.013 U	0.0048 U	0.0047 U	0.0046 U	0.0051 U
alpha-BHC	0.00068 U	0.00069 U	0.0037 U	0.0014 U	0.0014 U	0.0014 U	0.0015 U
alpha-Chlordane	0.0023 UJ	0.0024 U	0.013 U	0.0048 U	0.0047 U	0.0046 U	0.0051 U
beta-BHC	0.00068 UJ	0.00069 U	0.0037 U	0.0014 U	0.0014 U	0.0014 U	0.0015 U
delta-BHC	0.00068 U	0.00069 U	0.0037 U	0.0014 U	0.0014 U	0.0014 U	0.0015 U
Dieldrin	0.0045 U	0.0046 U	0.0026 J	0.001 J	0.003 J	0.009 U	0.0019 J
Endosulfan I	*0.0023 U*	*0.0024 U*	*0.013 U*	*0.0048 U*	*0.0047 U*	*0.0046 U*	*0.0051 U*
Endosulfan II	0.0045 U	0.0046 U	0.025 U	0.0094 U	0.0092 U	0.009 U	0.0098 U
Endosulfan sulfate	0.0045 U	0.0046 U	0.025 U	0.0094 U	0.0092 U	0.009 U	0.0098 U
Endrin	0.0045 U	0.0046 U	0.025 U	0.0094 U	0.0092 U	0.009 U	0.0098 U
Endrin aldehyde	0.0045 U	0.0046 U	0.025 U	0.0094 U	0.0092 U	0.009 U	0.0098 U
Endrin ketone	0.0045 U	0.0046 U	0.025 U	0.0094 U	0.0092 U	0.009 U	0.0098 U
gamma-BHC (Lindane)	0.0023 UJ	0.0024 U	0.013 U	0.0048 U	0.0047 U	0.0046 U	0.0051 U
gamma-Chlordane	0.0023 U	0.0024 U	0.013 U	0.0048 U	0.0047 U	0.00054 J	0.0051 U
Heptachlor	0.0023 U	0.0024 U	0.013 U	0.0048 U	0.0047 U	0.0046 U	0.0051 U
Heptachlor epoxide	0.0023 U	0.0024 U	0.013 U	0.0048 U	0.0047 U	0.0046 U	0.0051 U
Methoxychlor	0.023 UJ	0.024 U	0.13 UJ	0.048 UJ	0.047 UJ	0.046 U	0.051 U
Toxaphene	0.23 U	0.24 U	1.3 U	0.48 U	0.47 U	0.46 U	0.51 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection
limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F	F	F
Sample	CBS-CSF-T9-1-FD	CBS-CSF-T10-1	CBS-CSF-T11-1	CBS-CSF-T12-1	CBS-CSF-T13-1	CBS-CSF-T14-1	CBS-CSF-T15-1
Sample date	1/23/02	1/25/02	1/25/02	1/23/02	1/16/02	1/8/02	1/8/02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
4,4'-DDD	0.017 UJ	0.0086 UJ	0.0092 UJ	0.018 U	0.0044 U	0.0044 U	0.0047 U
4,4'-DDE	0.017 UJ	0.0086 UJ	0.0092 UJ	0.018 U	0.0044 U	0.0044 U	R
4,4'-DDT	0.017 UJ	0.0086 UJ	0.0092 UJ	0.018 U	0.0044 UJ	0.0044 U	R
Aldrin	0.0089 UJ	0.0044 UJ	0.0047 UJ	0.0092 U	0.0023 U	0.0023 U	0.0024 U
alpha-BHC	0.0026 UJ	0.0013 UJ	0.0014 UJ	0.0027 U	0.00067 U	0.00068 U	0.00071 U
alpha-Chlordane	0.0089 UJ	0.0044 UJ	0.0047 UJ	0.0092 U	0.0023 U	0.0023 U	0.0024 U
beta-BHC	0.0026 UJ	0.0013 UJ	0.0014 UJ	0.0027 U	0.00067 U	0.00068 U	0.00071 U
delta-BHC	0.0026 UJ	0.0013 UJ	0.0014 UJ	0.0027 U	0.00067 U	0.00068 U	0.00071 U
Dieldrin	0.0021 J	0.0008 J	0.00072 J	0.0008 J	0.0044 U	0.0044 U	0.0047 UJ
Endosulfan I	0.0089 UJ	0.0044 UJ	0.0047 UJ	0.0092 U	0.0023 U	0.0023 U	0.0024 UJ
Endosulfan II	0.017 UJ	0.0086 UJ	0.0092 UJ	0.018 U	0.0044 U	0.0044 U	0.0047 UJ
Endosulfan sulfate	0.017 UJ	0.0086 UJ	0.0092 UJ	0.018 U	0.0044 U	0.0044 U	0.0047 U
Endrin	0.017 UJ	0.0086 UJ	0.0092 UJ	0.018 U	0.0044 U	0.0044 U	0.0047 UJ
Endrin aldehyde	0.017 UJ	0.0086 UJ	0.0092 UJ	0.018 U	0.0044 U	0.0044 U	0.0047 U
Endrin ketone	0.017 UJ	0.0086 UJ	0.0092 UJ	0.018 U	0.0044 U	0.0044 U	0.0047 U
gamma-BHC (Lindane)	0.0089 UJ	0.0044 UJ	0.0047 UJ	0.0092 U	0.0023 U	0.0023 U	0.0024 U
gamma-Chlordane	0.00092 J	0.0044 UJ	0.00046 J	0.00082 J	0.0023 U	0.0023 U	0.0024 U
Heptachlor	0.0089 UJ	0.0044 UJ	0.0047 UJ	0.0092 U	0.0023 U	0.0023 U	R
Heptachlor epoxide	0.0089 UJ	0.0044 UJ	0.0047 UJ	0.0092 U	0.0023 U	0.0023 U	0.0024 U
Methoxychlor	0.089 UJ	0.044 UJ	0.047 UJ	0.092 U	0.023 UJ	0.023 U	0.024 UJ
Toxaphene	0.89 UJ	0.44 UJ	0.47 UJ	0.92 U	0.23 U	0.23 U	0.24 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**F**	**F**	**SITE M**	**SITE M**	**SITE M**	**SITE M**	**SITE M**
Sample	**CBS-CSF-T15-1-FD**	**CBS-CSF-T16-1**	**SED-M-S2 0-6**	**SED-M-S3-(0-6)**	**SED-M-S4-(0-6)**	**SED-M-S5 0-6**	**SED-M-S6-(0-6)**
Sample date	**1/8/02**	**2/6/02**	**6/22/01**	**7/10/01**	**8/1/01**	**6/22/01**	**7/10/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
4,4'-DDD	0.0043 U	0.0047 U	0.009 U	0.042 U	0.043 U	0.0082 U	0.042 U
4,4'-DDE	0.0043 U	0.00086 J	0.009 UJ	0.042 U	0.043 U	0.0082 U	0.042 U
4,4'-DDT	0.0043 U	0.0047 U	0.071 J	0.042 U	0.043 U	0.098 J	0.042 U
Aldrin	0.0022 U	0.0024 U	0.0046 U	0.022 U	0.022 U	0.0042 U	0.022 U
alpha-BHC	0.00066 U	0.00071 U	0.0014 U	0.0023 J	0.0066 U	0.0012 U	0.0064 U
alpha-Chlordane	0.0022 U	0.0028 J	0.0046 U	0.022 U	0.022 U	0.0042 U	0.022 U
beta-BHC	0.00066 U	0.00071 U	0.0014 U	0.0064 U	0.0066 U	0.0012 U	0.0064 U
delta-BHC	0.00066 U	0.00071 U	0.0014 U	0.0064 U	0.0066 U	0.0012 U	0.0064 U
Dieldrin	0.0043 U	0.001 J	0.009 U	0.042 U	0.043 U	0.0082 U	0.042 U
Endosulfan I	0.0022 U	0.0024 U	0.0046 UJ	0.022 U	0.022 U	0.0042 U	0.022 U
Endosulfan II	0.0043 U	0.0047 U	0.009 U	0.042 U	0.043 U	0.0082 U	0.042 U
Endosulfan sulfate	0.0043 U	0.0047 U	0.009 U	0.042 U	0.043 U	0.0082 U	0.042 U
Endrin	0.0043 U	0.0047 U	0.009 U	0.042 U	0.043 U	0.0082 U	0.042 U
Endrin aldehyde	0.0043 U	0.0047 U	0.0093 J	0.026 J	0.043 U	0.024 J	0.011 J
Endrin ketone	0.0043 U	0.0047 U	0.009 U	0.042 U	0.043 U	0.0082 U	0.042 U
gamma-BHC (Lindane)	0.0022 U	0.0024 U	0.00099 J	0.022 U	0.022 U	0.0031 J	0.0044 J
gamma-Chlordane	0.0022 U	0.0016 J	0.0046 UJ	0.022 U	0.022 U	0.0042 U	0.022 U
Heptachlor	0.0022 U	0.0024 U	0.0046 U	0.022 U	0.022 U	0.01 J	0.022 U
Heptachlor epoxide	0.0022 U	0.0024 U	0.0046 U	0.022 U	0.022 U	0.012 J	0.022 U
Methoxychlor	0.022 U	0.024 U	0.046 U	0.22 U	0.22 U	0.042 U	0.22 U
Toxaphene	0.22 U	0.24 U	0.46 U	2.2 U	2.2 U	0.42 U	2.2 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Pesticides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	SITE M	SITE M	SITE M	SITE M	SITE M
Sample	SED-M-S7-(0-6)	SED-M-S7-FD(0-6)	SED-M-S8 0-6	SED-M-S9-(0-6)	SED-M-S10 0-6
Sample date	8/1/01	8/1/01	6/22/01	7/10/01	6/22/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
4,4'-DDD	0.085 U	0.086 U	0.03 U	0.02 U	0.3 U
4,4'-DDE	0.085 U	0.086 U	0.035 J	0.02 U	0.3 U
4,4'-DDT	0.085 U	0.086 U	0.34 J	0.039 J	1.3 J
Aldrin	0.044 U	0.044 U	0.015 U	0.01 U	0.15 U
alpha-BHC	0.013 U	0.013 U	0.0045 U	0.0031 U	0.045 U
alpha-Chlordane	0.044 U	0.044 U	0.015 U	0.01 U	0.15 U
beta-BHC	0.013 U	0.013 U	0.0045 U	0.0031 U	0.045 U
delta-BHC	0.013 U	0.013 U	0.0045 U	0.0031 U	0.045 U
Dieldrin	0.085 U	0.086 U	0.03 U	0.02 U	0.3 U
Endosulfan I	0.044 U	0.044 U	0.015 U	0.01 U	0.15 U
Endosulfan II	0.085 U	0.086 U	0.03 U	0.02 U	0.3 U
Endosulfan sulfate	0.085 U	0.086 U	0.03 U	0.02 U	0.3 U
Endrin	0.085 U	0.086 U	0.03 U	0.02 U	0.3 U
Endrin aldehyde	0.085 U	0.086 U	0.066 J	0.02 U	0.83 J
Endrin ketone	0.085 U	0.086 U	0.03 U	0.02 U	0.3 U
gamma-BHC (Lindane)	0.044 U	0.044 U	0.0029 J	0.01 U	0.15 U
gamma-Chlordane	0.044 U	0.044 U	0.015 U	0.01 U	0.15 U
Heptachlor	0.044 U	0.044 U	0.015 U	0.01 U	0.16 J
Heptachlor epoxide	0.044 U	0.044 U	0.038 J	0.01 U	0.86 J
Methoxychlor	0.44 U	0.44 U	0.15 U	0.1 U	1.5 U
Toxaphene	4.4 U	4.4 U	1.5 U	1 U	15 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Noncetected, detection limit is estimated.
R - Rejected.

Herbicides

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T0-C1	CBS-CSB-T1-C1	CBS-CSB-T1-E1	CBS-CSB-T1-W1	CBS-CSB-T2-C1	CBS-CSB-T2-E1	CBS-CSB-T2-W1
Sample date	11/1/01	10/31/01	10/31/01	10/31/01	10/31/01	10/31/01	10/31/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
2,4,5-T	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.011 U
2,4,5-TP (Silvex)	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.011 U
2,4-D	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.011 U
2,4-DB	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.011 U
Dalapon	0.096 U	0.098 U	0.096 U	0.09 U	0.1 U	0.09 U	0.087 U
Dicamba	0.029 U	0.0019 J	0.029 U	0.028 U	0.032 U	0.028 U	0.0017 J
Dichlorprop	0.15 U	0.15 U	0.15 U	0.14 U	0.16 U	0.14 U	0.13 U
Dinoseb	0.15 U	0.15 U	0.15 U	0.14 U	0.16 U	0.14 U	0.13 U
MCPA	2.9 U	3 U	2.9 U	2.8 U	3.2 U	2.8 U	2.7 U
MCPP	2.9 U	3 U	2.9 U	2.8 U	3.2 U	2.8 U	2.7 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T3-C1	CBS-CSB-T3-E1	CBS-CSB-T3-W1	CBS-CSB-T4-C1	CBS-CSB-T4-E1	CBS-CSB-T4-W1	CBS-CSB-T5-C1
Sample date	10/31/01	10/31/01	10/31/01	11/1/01	11/1/01	11/1/01	11/1/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
2,4,5-T	0.29 U	4.2 U	0.027 J	0.027	0.012 U	0.61	0.012 U
2,4,5-TP (Silvex)	0.29 U	4.2 U	0.011 UJ	0.014 U	0.012 U	0.025 U	0.012 U
2,4-D	0.29 U	4.2 U	0.011 UJ	0.014 U	0.012 U	0.14 J	0.012 U
2,4-DB	0.29 U	4.2 U	0.011 UJ	0.014 U	0.012 U	0.025 U	0.012 U
Dalapon	2.2 U	33 U	0.089 UJ	0.11 U	0.09 U	0.19 U	0.096 U
Dicamba	0.69 U	10 U	0.027 UJ	0.0022 J	0.028 U	0.06 U	0.003 J
Dichlorprop	3.4 U	51 U	0.0066 J	0.16 U	0.14 U	0.3 U	0.15 U
Dinoseb	3.4 U	51 U	0.14 UJ	0.16 U	0.14 U	0.3 U	0.15 U
MCPA	69 U	1000 U	2.7 UJ	3.3 U	2.8 U	6 U	2.9 U
MCPP	69 U	1000 U	2.7 UJ	3.3 U	2.8 U	6 U	2.9 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T5-E1**	**CBS-CSB-T5-W1**	**CBS-CSB-T6-C1**	**CBS-CSB-T6-C1-D**	**CBS-CSB-T6-E1**	**CBS-CSB-T6-W1**	**CBS-CSB-T7-C1**
Sample date	**11/1/01**	**11/1/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
2,4,5-T	0.0049 J	0.011 U	0.012 U	0.012 U	0.0034 J	0.011 U	0.0032 J
2,4,5-TP (Silvex)	0.011 U	0.011 U	0.012 U	0.012 U	0.0096 U	0.011 U	0.011 U
2,4-D	0.017 J	0.011 U	0.012 U	0.012 U	0.0096 U	0.011 U	0.011 U
2,4-DB	0.011 U	0.011 U	0.012 U	0.012 U	0.0096 U	0.011 U	0.011 U
Dalapon	0.086 U	0.089 U	0.09 U	0.09 U	0.076 U	0.086 U	0.088 U
Dicamba	0.026 U	0.027 U	0.028 U	0.028 U	0.023 U	0.026 U	0.027 U
Dichlorprop	0.13 U	0.14 U	0.14 U	0.14 U	0.12 U	0.13 U	0.14 U
Dinoseb	0.13 U	0.14 U	0.14 U	0.14 U	0.12 U	0.13 U	0.14 U
MCPA	2.6 U	2.7 U	2.8 U	2.8 U	2.3 U	2.6 U	2.7 U
MCPP	2.6 U	2.7 U	2.8 U	2.8 U	6.1 J	2.6 U	2.7 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T7-E1**	**CBS-CSB-T7-W1**	**CBS-CSB-T8-C1**	**CBS-CSB-T8-E1**	**CBS-CSB-T8-W1**	**CBS-CSB-T9-C1**	**CBS-CSB-T9-E1**
Sample date	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
2,4,5-T	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.0032 J	0.011 U
2,4,5-TP (Silvex)	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U
2,4-D	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U
2,4-DB	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.011 U
Dalapon	0.087 U	0.083 U	0.09 U	0.093 U	0.088 U	0.088 U	0.086 U
Dicamba	0.027 U	0.0047 J	0.028 U	0.028 U	0.027 U	0.027 U	0.0017 J
Dichlorprop	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13 U
Dinoseb	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13 U
MCPA	2.7 U	2.6 U	2.8 U	2.8 U	2.7 U	2.7 U	2.6 U
MCPP	2.7 U	4.6 J	2.8 U	2.8 U	2.7 U	2.7 U	2.6 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T9-W1	CBS-CSB-T10-C1	CBS-CSB-T10-E1	CBS-CSB-T10-W1	CBS-CSB-T11-C1	CBS-CSB-T11-C1-D	CBS-CSB-T11-E1
Sample date	11/8/01	11/8/01	11/8/01	11/8/01	11/19/01	11/19/01	11/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
2,4,5-T	0.011 U	0.012 U	0.011 U	0.011 U	0.003 J	0.01 J	0.01 J
2,4,5-TP (Silvex)	0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.002 J
2,4-D	0.011 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.01 U
2,4-DB	0.011 U	0.012 U	0.011 U	0.011 U	0.064	0.05 J	0.01 U
Dalapon	0.084 U	0.093 U	0.088 U	0.088 U	0.092 U	0.089 U	0.079 U
Dicamba	0.0053 J	0.028 U	0.027 U	0.0021 J	0.0031 J	0.027 U	0.0016 J
Dichlorprop	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.12 U
Dinoseb	0.13 U	0.14 U	0.14 U	0.14 U	0.7 U	0.68 U	0.12 U
MCPA	2.6 U	2.8 U	2.7 U	2.7 U	2.8 U	2.7 U	2.4 U
MCPP	2.4 J	2.8 U	2.7 U	2.7 U	2.8 U	2.7 U	2.4 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T11-W1	CBS-CSB-T12-C1	CBS-CSB-T12-E1	CBS-CSB-T12-W1	CBS-CSB-T13-C1	CBS-CSB-T13-E1	CBS-CSB-T13-W1
Sample date	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
2,4,5-T	0.01 U	0.012 J	0.0098 U	0.011 U	0.0039 J	0.0098 U	0.011 U
2,4,5-TP (Silvex)	0.01 U	0.012 U	0.0014 J	0.011 U	0.012 U	0.0098 U	0.011 U
2,4-D	0.01 U	0.012 U	0.0098 U	0.011 U	0.012 U	0.0098 U	0.011 U
2,4-DB	0.01 U	0.036 J	0.0098 U	0.011 U	0.012 U	0.0098 U	0.011 U
Dalapon	0.082 U	0.097 U	0.076 U	0.086 U	0.09 U	0.041 J	0.088 U
Dicamba	0.0028 J	0.03 U	0.024 U	0.026 U	0.028 U	0.024 U	0.027 U
Dichlorprop	0.13 U	0.15 U	0.12 U	0.13 U	0.14 U	0.12 U	0.14 U
Dinoseb	0.13 U	0.75 U	0.12 U	0.13 U	0.69 U	0.12 U	0.14 U
MCPA	2.5 U	3 U	2.4 U	2.6 U	2.8 U	2.4 U	2.7 U
MCPP	2.5 U	3 U	2.4 U	2.6 U	2.8 U	2.4 U	2.7 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T14-1**	**CBS-CSB-T15-1**	**CBS-CSB-T16-1**	**CBS-CSB-T17-C1**	**CBS-CSB-T17-E1**	**CBS-CSB-T17-E1D**	**CBS-CSB-T17-WI**
Sample date	**12/20/01**	**12/20/01**	**12/20/01**	**11/9/01**	**11/9/01**	**11/9/01**	**11/9/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
2,4,5-T	0.013 U	0.011 U	0.012 U	0.013 U	0.012 U	0.0076 J	0.002 J
2,4,5-TP (Silvex)	0.013 U	0.011 U	0.012 U	0.013 U	0.0019 J	0.012 U	0.012 U
2,4-D	0.013 U	0.011 U	0.017 J	0.013 U	0.012 U	0.012 U	0.012 U
2,4-DB	0.013 U	0.011 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U
Dalapon	0.1 U	0.086 U	0.094 U	0.1 U	0.094 U	0.09 U	0.092 U
Dicamba	0.031 U	0.026 U	0.029 U	0.032 U	0.029 U	0.028 U	0.028 U
Dichlorprop	0.15 U	0.13 U	0.14 U	0.16 U	0.14 U	0.14 U	0.14 U
Dinoseb	0.15 U	0.13 U	0.14 U	0.16 UJ	0.14 UJ	0.14 UJ	0.14 UJ
MCPA	3.1 U	2.6 U	2.9 U	3.2 U	2.9 U	2.8 U	2.8 U
MCPP	3.1 U	2.6 U	2.9 U	3.2 U	2.9 U	2.8 U	2.8 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**C**	**C**	**C**
Sample	**CBS-CSB-T18-C1**	**CBS-CSB-T18-E1**	**CBS-CSB-T18-W1**	**CBS-CSB-T18-W1D**	**CBS-CSC-T1-1**	**CBS-CSC-T2-1**	**CBS-CSC-T3-1**
Sample date	**11/9/01**	**11/9/01**	**11/9/01**	**11/9/01**	**12/13/01**	**12/13/01**	**12/13/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
2,4,5-T	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.013 U
2,4,5-TP (Silvex)	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.013 U
2,4-D	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.013 U
2,4-DB	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.013 U
Dalapon	0.088 U	0.09 U	0.089 U	0.088 U	0.089 U	0.093 U	0.1 U
Dicamba	0.004 J	0.028 U	0.027 U	0.027 U	0.027 U	0.028 U	0.031 U
Dichlorprop	0.14 U	0.14 U	0.14 U	0.14 U	0.0062 J	0.14 U	0.15 U
Dinoseb	0.14 UJ	0.14 UJ	0.14 UJ	0.14 UJ	0.14 U	0.14 U	0.15 U
MCPA	2.7 U	2.8 U	2.7 U	2.7 U	2.7 U	2.8 U	3.1 U
MCPP	2.7 U	2.8 U	2.7 U	2.7 U	2.7 U	2.8 U	3.1 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is est mated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**C**	**C**	**C**	**C**	**C**	**C**	**C**
Sample	**CBS-CSC-T4-1**	**CBS-CSC-T4-1-FD**	**CBS-CSC-T5-1**	**CBS-CSC-T6-1**	**CBS-CSC-T7-1**	**CBS-CSC-T8-1**	**CBS-CSC-T9-1**
Sample date	**12/13/01**	**12/13/01**	**12/13/01**	**12/13/01**	**12/13/01**	**12/13/01**	**12/13/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
2,4,5-T	0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.011 U
2,4,5-TP (Silvex)	0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.011 U
2,4-D	0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.011 U
2,4-DB	0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.011 U
Dalapon	0.097 U	0.098 U	0.1 U	0.1 U	0.096 U	0.097 U	0.088 U
Dicamba	0.03 U	0.03 U	0.031 U	0.032 U	0.029 U	0.0066 J	0.027 U
Dichlorprop	0.15 U	0.15 U	0.16 U	0.16 U	0.15 U	0.15 U	0.14 U
Dinoseb	0.15 U	0.15 U	0.16 U	0.16 U	0.15 U	0.15 U	0.14 U
MCPA	3 U	3 U	3.1 U	3.2 U	2.9 U	3 U	2.7 U
MCPP	3 U	3 U	3.1 U	3.2 U	2.9 U	3 U	2.7 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**D**	**D**	**D**	**D**	**D**	**D**	**E**
Sample	**CBS-CSD-T1-1**	**CBS-CSD-T2-1**	**CBS-CSD-T3-1**	**CBS-CSD-T4-1**	**CBS-CSD-T5-1**	**CBS-CSD-T6-1**	**CBS-CSE-T1-1**
Sample date	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/18/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
2,4,5-T	0.0054 J	0.012 U	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 U
2,4,5-TP (Silvex)	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 U
2,4-D	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 U
2,4-DB	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 U
Dalapon	0.097 U	0.05 J	0.093 U	0.097 U	0.089 U	0.094 UJ	0.097 U
Dicamba	0.03 U	0.03 U	0.0018 J	0.03 U	0.027 U	0.029 UJ	0.03 U
Dichlorprop	0.15 U	0.021 J	0.14 U	0.15 U	0.14 U	0.14 UJ	0.15 U
Dinoseb	0.15 U	0.15 U	0.14 U	0.15 U	0.14 U	0.14 UJ	0.15 U
MCPA	3 U	3 U	2.8 U	3 U	2.7 U	2.9 UJ	3 U
MCPP	3 U	3 U	2.8 U	3 U	2.7 U	2.9 UJ	3 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**E**	**E**	**E**	**E**	**E**	**E**	**E**
Sample	**CBS-CSE-T2-1**	**CBS-CSE-T3-1**	**CBS-CSE-T3-1-FD**	**CBS-CSE-T4-1**	**CBS-CSE-T5-1**	**CBS-CSE-T6-1**	**CBS-CSE-T7-1**
Sample date	**12/18/01**	**12/18/01**	**12/18/01**	**12/18/01**	**12/18/01**	**12/18/01**	**12/19/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
2,4,5-T	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
2,4,5-TP (Silvex)	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
2,4-D	0.011 U	0.012 U	0.012 U	0.012 U	0.035	0.012 U	0.012 U
2,4-DB	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dalapon	0.088 U	0.096 U	0.092 U	0.09 U	0.084 U	0.093 U	0.094 U
Dicamba	0.027 U	0.029 U	0.028 U	0.028 U	0.026 U	0.028 U	0.029 U
Dichlorprop	0.14 U	0.15 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U
Dinoseb	0.14 U	0.15 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U
MCPA	2.7 U	2.9 U	2.8 U	2.8 U	2.6 U	2.8 U	2.9 U
MCPP	2.7 U	2.9 U	2.8 U	2.8 U	2.6 U	2.8 U	2.9 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**E**	**E**	**E**	**E**	**E**	**E**	**E**
Sample	**CBS-CSE-T8-1**	**CBS-CSE-T9-1**	**CBS-CSE-T10-1**	**CBS-CSE-T11-1**	**CBS-CSE-T12-1**	**CBS-CSE-T13-2**	**CBS-CSE-T14-1**
Sample date	**12/19/01**	**12/19/01**	**12/19/01**	**12/19/01**	**12/19/01**	**2/14/02**	**12/18/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
2,4,5-T	0.013 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
2,4,5-TP (Silvex)	0.013 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
2,4-D	0.013 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
2,4-DB	0.013 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Dalapon	0.1 U	0.097 U	0.09 UJ	0.096 U	0.1 U	0.097 U	0.096 U
Dicamba	0.032 U	0.03 U	0.0025 J	0.029 U	0.031 U	0.03 U	0.029 U
Dichlorprop	0.16 U	0.15 U	0.14 U	0.15 U	0.15 U	0.15 U	0.15 U
Dinoseb	0.16 U	0.15 U	0.14 U	0.15 U	0.15 U	0.15 U	0.15 U
MCPA	3.2 U	3 U	2.8 U	2.9 U	3.1 U	3 UJ	2.9 U
MCPP	3.2 U	3 U	2.8 U	2.9 U	3.1 U	3 U	2.9 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**E**	**E**	**E**	**E**	**F**	**F**	**F**
Sample	**CBS-CSE-T15-1**	**CBS-CSE-T15-1-FD**	**CBS-CSE-T16-1**	**CBS-CSE-T17-1**	**CBS-CSF-T1-1**	**CBS-CSF-T2-1**	**CBS-CSF-T3-1**
Sample date	**12/18/01**	**12/18/01**	**12/21/01**	**12/21/01**	**12/21/01**	**12/11/01**	**12/11/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
2,4,5-T	0.01 U	0.011 U	0.017 UJ	0.014 U	0.014 U	0.012 U	0.013 U
2,4,5-TP (Silvex)	0.01 U	0.011 U	0.017 UJ	0.014 U	0.014 U	0.012 U	0.013 U
2,4-D	0.01 U	0.011 U	0.016 J	0.014 U	0.014 U	0.012 U	0.013 U
2,4-DB	0.01 U	0.011 U	0.017 UJ	0.014 U	0.014 U	0.012 U	0.013 U
Dalapon	0.082 U	0.083 U	0.13 UJ	0.11 U	0.11 U	0.096 U	0.1 U
Dicamba	0.025 U	0.026 U	0.041 UJ	0.035 U	0.033 U	0.029 U	0.031 U
Dichlorprop	0.13 U	0.13 U	0.2 UJ	0.18 U	0.17 U	0.15 U	0.15 U
Dinoseb	0.13 U	0.13 U	0.2 UJ	0.18 U	0.17 U	0.15 U	0.15 U
MCPA	2.5 U	2.6 U	4.1 UJ	3.5 U	3.3 U	2.9 U	3.1 U
MCPP	2.5 U	2.6 U	4.1 UJ	3.5 U	3.3 U	2.9 U	3.1 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**F**	**F**	**F**	**F**	**F**	**F**	**F**
Sample	**CBS-CSF-T4-1**	**CBS-CSF-T5-1**	**CBS-CSF-T6-1**	**CBS-CSF-T6-1-FD**	**CBS-CSF-T7-1**	**CBS-CSF-T8-1**	**CBS-CSF-T9-1**
Sample date	**12/11/01**	**1/8/02**	**1/16/02**	**1/16/02**	**1/16/02**	**1/23/02**	**1/23/02**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
2,4,5-T	0.011 U	0.012 U	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U
2,4,5-TP (Silvex)	0.011 U	0.012 U	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U
2,4-D	0.011 U	0.012 U	0.012 UJ	0.012 U	0.012 U	0.011 U	0.0084 J
2,4-DB	0.011 U	0.012 U	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U
Dalapon	0.089 U	0.09 U	0.097 UJ	0.093 U	0.09 U	0.089 U	0.097 U
Dicamba	0.027 U	0.0059 J	0.03 UJ	0.028 U	0.028 U	0.027 U	0.03 U
Dichlorprop	0.14 U	0.14 U	0.15 UJ	0.14 U	0.14 U	0.14 U	0.15 U
Dinoseb	0.14 U	0.14 U	0.15 UJ	0.14 U	0.14 U	0.14 U	0.15 U
MCPA	2.7 U	2.8 U	3 UJ	2.8 U	2.8 U	2.7 U	3 U
MCPP	2.7 U	2.8 U	3 UJ	2.8 U	2.8 U	2.7 U	3 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**F**	**F**	**F**	**F**	**F**	**F**	**F**
Sample	**CBS-CSF-T9-1-FD**	**CBS-CSF-T10-1**	**CBS-CSF-T11-1**	**CBS-CSF-T12-1**	**CBS-CSF-T13-1**	**CBS-CSF-T14-1**	**CBS-CSF-T15-1**
Sample date	**1/23/02**	**1/25/02**	**1/25/02**	**1/23/02**	**1/16/02**	**1/8/02**	**1/8/02**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
2,4,5-T	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 UJ
2,4,5-TP (Silvex)	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 UJ
2,4-D	0.011 U	0.011 U	0.0023 J	0.011 U	0.011 U	0.011 U	0.047 J
2,4-DB	0.011 U	0.011 U	0.012 UJ	0.011 U	0.011 U	0.011 U	0.012 UJ
Dalapon	0.086 U	0.084 U	0.09 U	0.088 U	0.087 U	0.088 U	0.093 UJ
Dicamba	0.026 U	0.026 U	0.0021 J	0.027 U	0.027 U	0.0021 J	0.01 J
Dichlorprop	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 UJ
Dinoseb	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 UJ
MCPA	2.6 U	2.6 U	2.8 U	2.7 U	2.7 U	2.7 U	2.8 UJ
MCPP	2.6 U	2.6 U	2.3 J	2.7 U	2.7 U	2.7 U	2.8 UJ

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**F**	**F**	**SITE M**	**SITE M**	**SITE M**	**SITE M**	**SITE M**
Sample	**CBS-CSF-T15-1-FD**	**CBS-CSF-T16-1**	**SED-M-S2 0-6**	**SED-M-S3-(0-6)**	**SED-M-S4-(0-6)**	**SED-M-S5 0-6**	**SED-M-S6-(0-6)**
Sample date	**1/8/02**	**2/6/02**	**6/22/01**	**7/10/01**	**8/1/01**	**6/22/01**	**7/10/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
2,4,5-T	0.011 U	0.012 U	0.011 U	0.011 U	0.0018 J	0.01 U	0.011 U
2,4,5-TP (Silvex)	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.01 U	0.011 U
2,4-D	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.01 U	0.011 U
2,4-DB	0.011 U	0.012 U	0.011 U	0.011 U	0.039 J	0.01 U	0.011 UJ
Dalapon	0.086 U	0.093 U	0.089 U	0.083 U	0.086 U	0.081 U	0.083 U
Dicamba	0.0025 J	0.028 U	0.027 U	0.026 U	0.026 U	0.025 U	0.026 U
Dichlorprop	0.13 U	0.14 U	0.14 U	0.13 U	0.13 U	0.12 U	0.13 U
Dinoseb	0.13 U	0.14 U	0.14 UJ	0.13 UJ	1.3 UJ	0.12 UJ	0.13 UJ
MCPA	2.6 U	2.8 U	2.7 U	2.6 U	2.6 U	2.5 U	2.6 U
MCPP	2.6 U	2.8 U	2.7 U	2.6 U	2.6 U	2.5 U	2.6 UJ

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Herbicides
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	SITE M	SITE M	SITE M	SITE M	SITE M
Sample	SED-M-S7-(0-6)	SED-M-S7-FD(0-6)	SED-M-S8 0-6	SED-M-S9-(0-6)	SED-M-S10 0-6
Sample date	8/1/01	8/1/01	6/22/01	7/10/01	6/22/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
2,4,5-T	0.011 U	0.011 U	0.012 U	0.01 U	0.063 U
2,4,5-TP (Silvex)	0.011 U	0.011 U	0.012 U	0.01 U	0.063 U
2,4-D	0.011 U	0.011 U	0.012 U	0.01 U	0.063 U
2,4-DB	0.066 J	0.038 J	0.012 U	0.01 U	0.063 U
Dalapon	0.083 U	0.084 UJ	0.097 U	0.08 U	R
Dicamba	0.0026 J	0.0026 J	0.0033 J	0.025 U	0.15 U
Dichlorprop	0.037 J	0.011 J	0.15 U	0.12 U	0.76 UJ
Dinoseb	1.3 UJ	1.3 UJ	0.15 UJ	0.12 UJ	R
MCPA	2.6 U	2.6 UJ	3 U	2.5 U	15 U
MCPP	2.6 U	2.6 U	3 U	2.5 U	7.8 J

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

PCBs

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T0-C1	CBS-CSB-T1-C1	CBS-CSB-T1-E1	CBS-CSB-T1-W1	CBS-CSB-T2-C1	CBS-CSB-T2-E1	CBS-CSB-T2-W1
Sample date	11/1/01	10/31/01	10/31/01	10/31/01	10/31/01	10/31/01	10/31/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Decachlorobiphenyl	1.3	0.025 U	0.015 J	0.023 J	0.026 UJ	0.017 J	0.023 UJ
Dichlorobiphenyl	0.3	0.0035 J	0.0032 J	0.0088	0.0052 UJ	0.0046 UJ	0.0044 UJ
Heptachlorobiphenyl	4	0.015 U	0.16	0.13	0.016 UJ	0.019 J	0.013 UJ
Hexachlorobiphenyl	4.8	0.0071 J	0.26	0.18	0.011 UJ	0.04 J	0.0089 UJ
Monochlorobiphenyl	0.024 U	0.005 U	0.0048 U	0.0046 U	0.0052 UJ	0.0046 UJ	0.0044 UJ
Nonachlorobiphenyl	0.074 U	0.025 U	0.024 U	0.024 U	0.026 UJ	0.024 UJ	0.023 UJ
Octachlorobiphenyl	1.1	0.015 U	0.042	0.036	0.016 UJ	0.0047 J	0.013 UJ
Pentachlorobiphenyl	12	0.024	0.6	0.34	0.011 UJ	0.15 J	0.0089 UJ
Tetrachlorobiphenyl	5.5	0.0088 J	0.5 J	0.42	0.011 UJ	0.018 J	0.0089 UJ
Trichlorobiphenyl	0.73	0.0018 J	0.073 J	0.082	0.0021 J	0.0046 UJ	0.0044 UJ

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T3-C1**	**CBS-CSB-T3-E1**	**CBS-CSB-T3-W1**	**CBS-CSB-T4-C1**	**CBS-CSB-T4-E1**	**CBS-CSB-T4-W1**	**CBS-CSB-T5-C1**
Sample date	**10/31/01**	**10/31/01**	**10/31/01**	**11/1/01**	**11/1/01**	**11/1/01**	**11/1/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Decachlorobiphenyl	1.4 U	1 U	0.023 UJ	R	0.01 J	0.025 UJ	0.0053 J
Dichlorobiphenyl	0.27	0.2 U	0.025 J	0.0022 J	0.0046 UJ	0.0049 UJ	0.0048 U
Heptachlorobiphenyl	0.86 U	0.63 U	0.014 UJ	R	0.016 J	0.015 UJ	0.015 U
Hexachlorobiphenyl	0.14	0.83	0.0034 J	R	0.054 J	0.01 UJ	0.011
Monochlorobiphenyl	0.28 U	0.2 U	0.0045 UJ	R	0.0046 UJ	0.0049 UJ	0.0048 U
Nonachlorobiphenyl	1.4 U	1 U	0.023 UJ	R	0.023 UJ	0.025 UJ	0.024 U
Octachlorobiphenyl	0.86 U	0.63 U	0.014 UJ	R	0.031 J	0.015 UJ	0.015 U
Pentachlorobiphenyl	0.77	18	0.031 J	0.015 J	0.15 J	0.0013 J	0.042
Tetrachlorobiphenyl	3.2	51	0.053 J	0.025 J	0.056 J	0.0016 J	0.027
Trichlorobiphenyl	2	15	0.12 J	0.0045 J	0.002 J	0.0032 J	0.024

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T5-E1	CBS-CSB-T5-W1	CBS-CSB-T6-C1	CBS-CSB-T6-C1-D	CBS-CSB-T6-E1	CBS-CSB-T6-W1	CBS-CSB-T7-C1
Sample date	11/1/01	11/1/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Decachlorobiphenyl	0.025 J	0.023 U	0.0043 J	0.023 UJ	0.018 J	0.022 UJ	0.022 UJ
Dichlorobiphenyl	0.029 J	0.0045 U	0.0046 U	0.0046 UJ	0.0028 J	0.0043 UJ	0.0044 UJ
Heptachlorobiphenyl	0.04 J	0.014 U	0.014 U	0.014 UJ	0.014 J	0.013 UJ	0.014 UJ
Hexachlorobiphenyl	0.15 J	0.0092 U	0.0093 U	0.0014 J	0.038 J	0.0088 UJ	0.0021 J
Monochlorobiphenyl	0.0087 UJ	0.0045 U	0.0046 U	0.0046 UJ	0.0038 UJ	0.0043 UJ	0.0044 UJ
Nonachlorobiphenyl	0.044 UJ	0.023 U	0.023 U	0.023 UJ	0.019 UJ	0.022 UJ	0.022 UJ
Octachlorobiphenyl	0.013 J	0.014 U	0.014 U	0.014 UJ	0.0045 J	0.013 UJ	0.014 UJ
Pentachlorobiphenyl	0.84 J	0.0092 U	0.0064 J	0.0071 J	0.24 J	0.0088 UJ	0.02 J
Tetrachlorobiphenyl	1 J	0.0092 U	0.013	0.0096 J	0.37 J	0.0088 UJ	0.028 J
Trichlorobiphenyl	0.48 J	0.0045 U	0.0053	0.0028 J	0.074 J	0.0018 J	0.0054 J

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T7-E1**	**CBS-CSB-T7-W1**	**CBS-CSB-T8-C1**	**CBS-CSB-T8-E1**	**CBS-CSB-T8-W1**	**CBS-CSB-T9-C1**	**CBS-CSB-T9-E1**
Sample date	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Decachlorobiphenyl	0.022 UJ	0.021 UJ	0.009 J	0.024 UJ	0.022 UJ	0.022 UJ	0.0028 J
Dichlorobiphenyl	0.0044 UJ	0.0042 UJ	0.0036 J	0.0047 UJ	0.0044 UJ	0.0044 UJ	0.0043 UJ
Heptachlorobiphenyl	0.013 UJ	0.0029 J	0.0048 J	0.014 UJ	0.014 UJ	0.014 UJ	0.013 UJ
Hexachlorobiphenyl	0.0015 J	0.0092 J	0.019 J	0.0096 UJ	0.0023 J	0.009 UJ	0.0021 J
Monochlorobiphenyl	0.0044 UJ	0.0042 UJ	0.0046 UJ	0.0047 UJ	0.0044 UJ	0.0044 UJ	0.0043 UJ
Nonachlorobiphenyl	0.022 UJ	0.021 UJ	0.023 UJ	0.024 UJ	0.022 UJ	0.022 UJ	0.022 UJ
Octachlorobiphenyl	0.013 UJ	0.013 UJ	0.014 UJ	0.014 UJ	0.014 UJ	0.014 UJ	0.013 UJ
Pentachlorobiphenyl	0.0051 J	0.074 J	0.11 J	0.0096 UJ	0.017 J	0.009 UJ	0.0088 J
Tetrachlorobiphenyl	0.0089 UJ	0.061 J	0.15 J	0.0096 UJ	0.029 J	0.009 UJ	0.0088 UJ
Trichlorobiphenyl	0.0044 UJ	0.0081 J	0.022 J	0.0047 UJ	0.0045 J	0.0044 UJ	0.0043 UJ

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T9-W1	CBS-CSB-T10-C1	CBS-CSB-T10-E1	CBS-CSB-T10-W1	CBS-CSB-T11-C1	CBS-CSB-T11-C1-D	CBS-CSB-T11-E1
Sample date	11/8/01	11/8/01	11/8/01	11/8/01	11/19/01	11/19/01	11/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Decachlorobiphenyl	0.0027 J	0.024 U	0.0041 J	0.022 U	0.041 J	0.055 J	0.008 J
Dichlorobiphenyl	0.0043 U	0.0047 U	0.0044 UJ	0.0044 U	0.0038 J	0.0055 J	0.004 UJ
Heptachlorobiphenyl	0.0022 J	0.014 U	0.014 UJ	0.014 U	0.02 J	0.046 J	0.012 UJ
Hexachlorobiphenyl	0.0084 J	0.0024 J	0.0085 J	0.0063 J	0.041 J	0.051 J	0.0097 J
Monochlorobiphenyl	0.0043 U	0.0047 U	0.0044 UJ	0.0044 U	0.0046 UJ	0.0045 UJ	0.004 UJ
Nonachlorobiphenyl	0.022 U	0.024 U	0.022 UJ	0.022 U	0.015 J	0.02 J	0.0051 J
Octachlorobiphenyl	0.013 U	0.014 U	0.014 UJ	0.014 U	0.0068 J	0.015 J	0.012 UJ
Pentachlorobiphenyl	0.043	0.014	0.041 J	0.025	0.19 J	0.23 J	0.034 J
Tetrachlorobiphenyl	0.064	0.0096 U	0.018 J	0.026	0.17 J	0.49 J	0.02 J
Trichlorobiphenyl	0.0069	0.0047 U	0.0014 J	0.0035 J	0.032 J	0.14 J	0.0043 J

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T11-W1**	**CBS-CSB-T12-C1**	**CBS-CSB-T12-E1**	**CBS-CSB-T12-W1**	**CBS-CSB-T13-C1**	**CBS-CSB-T13-E1**	**CBS-CSB-T13-W1**
Sample date	**11/19/01**	**11/19/01**	**11/19/01**	**11/19/01**	**11/19/01**	**11/19/01**	**11/19/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Decachlorobiphenyl	0.0088 J	0.025 UJ	0.01 J	0.0056 J	0.023 UJ	0.02 UJ	0.022 UJ
Dichlorobiphenyl	0.0042 UJ	0.0075 J	0.0039 UJ	0.0043 UJ	0.0046 UJ	0.0039 UJ	0.0044 UJ
Heptachlorobiphenyl	0.015 J	0.015 UJ	0.012 UJ	0.013 UJ	0.014 UJ	0.012 UJ	0.014 UJ
Hexachlorobiphenyl	0.012 J	0.01 UJ	0.015 J	0.015 J	0.0093 UJ	0.0046 J	0.004 J
Monochlorobiphenyl	0.0042 UJ	0.0049 UJ	0.0039 UJ	0.0043 UJ	0.0046 UJ	0.0039 UJ	0.0044 UJ
Nonachlorobiphenyl	0.021 UJ	0.025 UJ	0.0063 J	0.022 UJ	0.023 UJ	0.02 UJ	0.022 UJ
Octachlorobiphenyl	0.0034 J	0.015 UJ	0.0011 J	0.013 UJ	0.014 UJ	0.012 UJ	0.014 UJ
Pentachlorobiphenyl	0.11 J	0.0014 J	0.044 J	0.035 J	0.0093 UJ	0.014 J	0.013 J
Tetrachlorobiphenyl	0.13 J	0.01 UJ	0.046 J	0.087 J	0.0093 UJ	0.0093 J	0.019 J
Trichlorobiphenyl	0.02 J	0.023 J	0.007 J	0.017 J	0.0046 UJ	0.0016 J	0.0028 J

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T14-1	CBS-CSB-T15-1	CBS-CSB-T16-1	CBS-CSB-T17-C1	CBS-CSB-T17-E1	CBS-CSB-T17-E1D	CBS-CSB-T17-WI
Sample date	12/20/01	12/20/01	12/20/01	11/9/01	11/9/01	11/9/01	11/9/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Decachlorobiphenyl	0.026 U	0.0083 J	0.0074 J	0.027 U	0.016 J	0.051 J	0.024 U
Dichlorobiphenyl	0.0051 U	0.0043 U	0.0048 U	0.0053 U	0.0048 UJ	0.014 J	0.0046 U
Heptachlorobiphenyl	0.015 U	0.0026 J	0.0038 J	0.016 U	0.019 J	0.081 J	0.014 U
Hexachlorobiphenyl	0.01 U	0.0044 J	0.012	0.011 U	0.045 J	0.11 J	0.0094 U
Monochlorobiphenyl	0.0051 U	0.0043 U	0.0048 U	0.0053 U	0.0048 UJ	0.0022 J	0.0046 U
Nonachlorobiphenyl	0.026 U	0.0028 J	0.024 U	0.027 U	0.024 UJ	0.023 U	0.024 U
Octachlorobiphenyl	0.015 U	0.013 U	0.014 U	0.016 U	0.0051 J	0.023 J	0.014 U
Pentachlorobiphenyl	0.01 U	0.042	0.078	0.011 U	0.17 J	0.68 J	0.0094 U
Tetrachlorobiphenyl	0.01 U	0.036	0.016	0.011 U	0.085 J	0.21 J	0.0094 U
Trichlorobiphenyl	0.0051 U	0.0043 U	0.0028 J	0.0053 U	0.018 J	0.049 J	0.0046 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**C**	**C**	**C**
Sample	**CBS-CSB-T18-C1**	**CBS-CSB-T18-E1**	**CBS-CSB-T18-W1**	**CBS-CSB-T18-W1D**	**CBS-CSC-T1-1**	**CBS-CSC-T2-1**	**CBS-CSC-T3-1**
Sample date	**11/9/01**	**11/9/01**	**11/9/01**	**11/9/01**	**12/13/01**	**12/13/01**	**12/13/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Decachlorobiphenyl	0.022 UJ	0.023 U	0.023 U	0.022 UJ	0.023 U	0.029	0.026 U
Dichlorobiphenyl	0.0044 UJ	0.0046 U	0.0045 U	0.0044 UJ	0.0045 U	0.0079	0.0051 U
Heptachlorobiphenyl	0.014 UJ	0.014 UJ	0.014 U	0.014 UJ	0.014 U	0.018	0.015 U
Hexachlorobiphenyl	0.009 UJ	0.0093 UJ	0.0092 U	0.009 UJ	0.0092 U	0.038	0.01 U
Monochlorobiphenyl	0.0044 UJ	0.0046 U	0.0045 U	0.0044 UJ	0.0045 U	0.0014 J	0.0051 U
Nonachlorobiphenyl	0.022 UJ	0.023 U	0.023 U	0.022 UJ	0.023 U	0.011 J	0.026 U
Octachlorobiphenyl	0.014 UJ	0.014 UJ	0.014 U	0.014 UJ	0.014 U	0.011 J	0.015 U
Pentachlorobiphenyl	0.009 UJ	0.0093 U	0.0092 U	0.009 UJ	0.0011 J	0.027	0.0029 J
Tetrachlorobiphenyl	0.009 UJ	0.0093 U	0.0092 U	0.009 UJ	0.0092 U	0.03	0.01 U
Trichlorobiphenyl	0.0044 UJ	0.0046 U	0.0045 U	0.0044 UJ	0.0045 U	0.0049	0.0051 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	C	C	C	C	C	C	C
Sample	CBS-CSC-T4-1	CBS-CSC-T4-1-FD	CBS-CSC-T5-1	CBS-CSC-T6-1	CBS-CSC-T7-1	CBS-CSC-T8-1	CBS-CSC-T9-1
Sample date	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Decachlorobiphenyl	0.025 U	0.0089 J	0.026 U	0.021 J	0.024 U	0.025 U	0.022 U
Dichlorobiphenyl	0.0049 U	0.005 U	0.0052 U	0.0052 U	0.0048 U	0.0049 U	0.0044 U
Heptachlorobiphenyl	0.015 U	0.015 U	0.016 U	0.0036 J	0.015 U	0.015 U	0.014 U
Hexachlorobiphenyl	0.0034 J	0.015	0.01 U	0.01 J	0.0098 U	0.0073 J	0.009 U
Monochlorobiphenyl	0.0049 U	0.005 U	0.0052 U	0.0052 U	0.0048 U	0.0049 U	0.0044 U
Nonachlorobiphenyl	0.025 U	0.025 U	0.026 U	0.0052 J	0.024 U	0.025 U	0.022 U
Octachlorobiphenyl	0.015 U	0.015 U	0.016 U	0.016 U	0.015 U	0.015 U	0.014 U
Pentachlorobiphenyl	0.0059 J	0.032	0.01 U	0.024	0.0098 U	0.017	0.009 U
Tetrachlorobiphenyl	0.01 U	0.0068 J	0.01 U	0.0068 J	0.0098 U	0.0023 J	0.009 U
Trichlorobiphenyl	0.0049 U	0.005 U	0.0052 U	0.0052 U	0.0048 U	0.0049 U	0.0044 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**D**	**D**	**D**	**D**	**D**	**D**	**E**
Sample	**CBS-CSD-T1-1**	**CBS-CSD-T2-1**	**CBS-CSD-T3-1**	**CBS-CSD-T4-1**	**CBS-CSD-T5-1**	**CBS-CSD-T6-1**	**CBS-CSE-T1-1**
Sample date	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/18/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Decachlorobiphenyl	0.025 U	0.059	0.004 J	0.025 U	0.023 U	0.19	0.0074 J
Dichlorobiphenyl	0.0049 U	0.005 U	0.0047 U	0.0049 U	0.0045 U	0.0048 U	0.0049 U
Heptachlorobiphenyl	0.015 U	0.026	0.014 U	0.015 U	0.014 U	0.19	0.015 U
Hexachlorobiphenyl	0.01 U	0.063	0.0015 J	0.0033 J	0.0027 J	0.62	0.0067 J
Monochlorobiphenyl	0.0049 U	0.0039 J	0.0047 U	0.0049 U	0.0045 U	0.0048 U	0.0049 U
Nonachlorobiphenyl	0.025 U	0.016 J	0.024 U	0.025 U	0.023 U	0.039	0.025 U
Octachlorobiphenyl	0.015 U	0.0099 J	0.014 U	0.015 U	0.014 U	0.05	0.015 U
Pentachlorobiphenyl	0.01 U	0.06	0.0044 J	0.0057 J	0.0047 J	1	0.0091 J
Tetrachlorobiphenyl	0.01 U	0.033	0.0096 U	0.01 U	0.0092 U	0.34	0.01 U
Trichlorobiphenyl	0.0049 U	0.021	0.0047 U	0.0049 U	0.0045 U	0.0082	0.0049 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	E	E	E	E	E	E	E
Sample	CBS-CSE-T2-1	CBS-CSE-T3-1	CBS-CSE-T3-1-FD	CBS-CSE-T4-1	CBS-CSE-T5-1	CBS-CSE-T6-1	CBS-CSE-T7-1
Sample date	12/18/01	12/18/01	12/18/01	12/18/01	12/18/01	12/18/01	12/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Decachlorobiphenyl	0.022 U	0.024 U	0.024 U	0.023 U	0.022 U	0.0084 J	0.024 U
Dichlorobiphenyl	0.0044 U	0.0048 U	0.0046 U	0.0046 U	0.0043 U	0.0047 U	0.0048 U
Heptachlorobiphenyl	0.014 U	0.015 U	0.014 U	0.014 U	0.013 U	0.014 U	0.014 U
Hexachlorobiphenyl	0.0095	0.0098 U	0.0094 U	0.0093 U	0.0013 J	0.018	0.0097 U
Monochlorobiphenyl	0.0044 U	0.0048 U	0.0046 U	0.0046 U	0.0043 U	0.0047 U	0.0048 U
Nonachlorobiphenyl	0.022 U	0.024 U	0.024 U	0.023 U	0.022 U	0.024 U	0.024 U
Octachlorobiphenyl	0.014 U	0.015 U	0.014 U	0.014 U	0.013 U	0.014 U	0.014 U
Pentachlorobiphenyl	0.018	0.0044 J	0.0025 J	0.0093 U	0.0011 J	0.046	0.0097 U
Tetrachlorobiphenyl	0.0024 J	0.0098 U	0.0094 U	0.0093 U	0.0087 U	0.012	0.0097 U
Trichlorobiphenyl	0.0044 U	0.0048 U	0.0046 U	0.0046 U	0.0043 U	0.0011 J	0.0048 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**E**	**E**	**E**	**E**	**E**	**E**	**E**
Sample	**CBS-CSE-T8-1**	**CBS-CSE-T9-1**	**CBS-CSE-T10-1**	**CBS-CSE-T11-1**	**CBS-CSE-T12-1**	**CBS-CSE-T13-2**	**CBS-CSE-T14-1**
Sample date	**12/19/01**	**12/19/01**	**12/19/01**	**12/19/01**	**12/19/01**	**2/14/02**	**12/18/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Decachlorobiphenyl	0.0062 J	0.025 U	0.023 UJ	0.0079 J	0.026 U	0.064	0.024 U
Dichlorobiphenyl	0.0052 U	0.0049 U	0.0046 UJ	0.0048 U	0.0051 U	0.0049 U	0.0048 U
Heptachlorobiphenyl	0.016 U	0.015 U	0.014 UJ	0.015 U	0.015 U	0.041	0.015 U
Hexachlorobiphenyl	0.0077 J	0.01 U	0.0093 UJ	0.01	0.01 U	0.24	0.0098 U
Monochlorobiphenyl	0.0052 U	0.0049 U	0.0046 UJ	0.0048 U	0.0051 U	0.0049 U	0.0048 U
Nonachlorobiphenyl	0.026 U	0.025 U	0.023 UJ	0.024 U	0.026 U	0.035	0.024 U
Octachlorobiphenyl	0.016 U	0.015 U	0.014 UJ	0.015 U	0.015 U	0.016	0.015 U
Pentachlorobiphenyl	0.015	0.01 U	0.0093 UJ	0.018	0.01 U	0.38 J	0.0098 U
Tetrachlorobiphenyl	0.011 U	0.01 U	0.0093 UJ	0.0098 U	0.01 U	0.14	0.0098 U
Trichlorobiphenyl	0.0052 U	0.0049 U	0.0046 UJ	0.0048 U	0.0051 U	0.0011 J	0.0048 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**E**	**E**	**E**	**E**	**F**	**F**	**F**
Sample	**CBS-CSE-T15-1**	**CBS-CSE-T15-1-FD**	**CBS-CSE-T16-1**	**CBS-CSE-T17-1**	**CBS-CSF-T1-1**	**CBS-CSF-T2-1**	**CBS-CSF-T3-1**
Sample date	**12/18/01**	**12/18/01**	**12/21/01**	**12/21/01**	**12/21/01**	**12/11/01**	**12/11/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Decachlorobiphenyl	0.021 U	0.021 U	0.18	0.017 J	0.028 U	0.024 U	0.032
Dichlorobiphenyl	0.0042 U	0.0042 U	0.0057 J	0.0058 U	0.0055 U	0.0048 U	0.0051 U
Heptachlorobiphenyl	0.013 U	0.013 U	0.064 J	0.0059 J	0.017 U	0.015 U	0.016
Hexachlorobiphenyl	0.0085 U	0.0086 U	0.082 J	0.012	0.011 U	0.0098 U	0.07
Monochlorobiphenyl	0.0042 U	0.0042 U	0.0067 UJ	0.0058 U	0.0055 U	0.0048 U	0.0056
Nonachlorobiphenyl	0.021 U	0.021 U	0.094	0.0039 J	0.028 U	0.024 U	0.013 J
Octachlorobiphenyl	0.013 U	0.013 U	0.032	0.018 U	0.017 U	0.015 U	0.0062 J
Pentachlorobiphenyl	0.0085 U	0.0086 U	0.57 J	0.061	0.011 U	0.0098 U	0.13
Tetrachlorobiphenyl	0.0085 U	0.0086 U	0.16 J	0.0036 J	0.011 U	0.0098 U	0.077
Trichlorobiphenyl	0.0042 U	0.0042 U	0.064 J	0.0058 U	0.0055 U	0.0048 U	0.0071

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F	F	F
Sample	**CBS-CSF-T4-1**	**CBS-CSF-T5-1**	**CBS-CSF-T6-1**	**CBS-CSF-T6-1-FD**	**CBS-CSF-T7-1**	**CBS-CSF-T8-1**	**CBS-CSF-T9-1**
Sample date	**12/11/01**	**1/8/02**	**1/16/02**	**1/16/02**	**1/16/02**	**1/23/02**	**1/23/02**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Decachlorobiphenyl	0.023 U	0.023 U	0.025 U	0.024 U	0.023 U	0.023 U	0.0031 J
Dichlorobiphenyl	0.0045 U	0.0046 U	0.0049 U	0.0047 U	0.0046 U	0.0045 U	0.0049 U
Heptachlorobiphenyl	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.015 U
Hexachlorobiphenyl	0.0092 U	0.0093 U	0.0047 J	0.0079 J	0.0049 J	0.0092 U	0.0034 J
Monochlorobiphenyl	0.0045 U	0.0046 U	0.0049 U	0.0047 U	0.0046 U	0.0045 U	0.0049 U
Nonachlorobiphenyl	0.023 U	0.023 U	0.025 U	0.024 U	0.023 U	0.023 U	0.025 U
Octachlorobiphenyl	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.015 U
Pentachlorobiphenyl	0.0092 U	0.0093 U	0.0087 J	0.017	0.0091 J	0.0092 U	0.0032 J
Tetrachlorobiphenyl	0.0092 U	0.0093 U	0.002 J	0.0079 J	0.0093 U	0.0092 U	0.01 U
Trichlorobiphenyl	0.0045 U	0.001 J	0.0049 U	0.0047 U	0.0046 U	0.0045 U	0.0049 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F	F	F
Sample	CBS-CSF-T9-1-FD	CBS-CSF-T10-1	CBS-CSF-T11-1	CBS-CSF-T12-1	CBS-CSF-T13-1	CBS-CSF-T14-1	CBS-CSF-T15-1
Sample date	1/23/02	1/25/02	1/25/02	1/23/02	1/16/02	1/8/02	1/8/02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Decachlorobiphenyl	0.0033 J	0.022 U	0.023 U	0.022 U	0.022 U	0.0061 J	0.0062 J
Dichlorobiphenyl	0.0043 U	0.0043 U	0.0046 U	0.0044 U	0.0044 U	0.0044 U	0.0047 U
Heptachlorobiphenyl	0.013 U	0.013 U	0.014 U	0.014 U	0.013 U	0.014 U	0.014 U
Hexachlorobiphenyl	0.0033 J	0.0087 U	0.0093 U	0.009 U	0.0089 U	0.0079 J	0.0065 J
Monochlorobiphenyl	0.0043 U	0.0043 U	0.0046 U	0.0044 U	0.0044 U	0.0044 U	0.0047 U
Nonachlorobiphenyl	0.022 U	0.022 U	0.023 U	0.022 U	0.022 U	0.022 U	0.024 U
Octachlorobiphenyl	0.013 U	0.013 U	0.014 U	0.014 U	0.013 U	0.014 U	0.014 U
Pentachlorobiphenyl	0.0014 J	0.0087 U	0.0093 U	0.009 U	0.0089 U	0.011	0.0058 J
Tetrachlorobiphenyl	0.0088 U	0.0087 U	0.0093 U	0.009 U	0.0089 U	0.009 U	0.0096 U
Trichlorobiphenyl	0.0043 U	0.0043 U	0.0046 U	0.0044 U	0.0044 U	0.0044 U	0.0047 U

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	SITE M	SITE M	SITE M	SITE M	SITE M
Sample	CBS-CSF-T15-1-FD	CBS-CSF-T16-1	SED-M-S2 0-6	SED-M-S3-(0-6)	SED-M-S4-(0-6)	SED-M-S5 0-6	SED-M-S6-(0-6)
Sample date	1/8/02	2/6/02	6/22/01	7/10/01	8/1/01	6/22/01	7/10/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Decachlorobiphenyl	0.01 J	0.024 U	0.024	0.28	0.15 J	0.03	0.035
Dichlorobiphenyl	0.0043 U	0.0047 U	0.0045 U	0.16	0.038	0.0041 U	0.0049
Heptachlorobiphenyl	0.013 U	0.014 U	0.013 J	0.078	0.23 J	0.054	0.1 J
Hexachlorobiphenyl	0.0067 J	0.0096 U	0.065	0.088	0.045 J	0.11	0.14 J
Monochlorobiphenyl	0.0043 U	0.0047 U	0.0045 U	0.066	0.0043 U	0.0041 U	0.0042 U
Nonachlorobiphenyl	0.0033 J	0.024 U	0.023 U	0.17	0.041	0.011 J	0.022
Octachlorobiphenyl	0.013 U	0.014 U	0.014 U	0.065	0.079 J	0.015	0.037
Pentachlorobiphenyl	0.0039 J	0.0096 U	0.22	0.096	0.93	0.3	0.47
Tetrachlorobiphenyl	0.0088 U	0.0096 U	0.17	0.13	2	0.4	0.86
Trichlorobiphenyl	0.0043 U	0.0047 U	0.04	0.16	0.81	0.083	0.055 J

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - PCBs
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**SITE M**	**SITE M**	**SITE M**	**SITE M**	**SITE M**
Sample	***SED-M-S7-(0-6)***	***SED-M-S7-FD(0-6)***	***SED-M-S8 0-6***	***SED-M-S9-(0-6)***	***SED-M-S10 0-6***
Sample date	**8/1/01**	**8/1/01**	**6/22/01**	**7/10/01**	**6/22/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:					
Decachlorobiphenyl	0.2 J	0.15 J	0.1	0.14	0.52
Dichlorobiphenyl	0.085 U	0.086 U	0.041	0.0033 J	0.12
Heptachlorobiphenyl	0.46	0.26	0.11	0.23	1.1
Hexachlorobiphenyl	0.48	0.36	0.11	0.29	0.52
Monochlorobiphenyl	0.085 U	0.086 U	0.029	0.0041 U	0.068
Nonachlorobiphenyl	0.067 J	0.023 J	0.057	0.052	0.13 J
Octachlorobiphenyl	0.16 J	0.12 J	0.027	0.061	0.14 J
Pentachlorobiphenyl	3.1	2.4	0.67	0.95	15
Tetrachlorobiphenyl	3.8	2.7	0.28	0.57	8.6
Trichlorobiphenyl	1.7	1.1	0.13	0.06	0.94

Notes:
J - Detected, estimated.
U - Nondetected.

UJ - Nondetected, detection limit is estimated.
R - Rejected.

Dioxin

Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T0-C1	CBS-CSB-T1-C1	CBS-CSB-T1-E1	CBS-CSB-T1-W1	CBS-CSB-T2-C1	CBS-CSB-T2-E1	CBS-CSB-T2-W1
Sample date	11/1/01	10/31/01	10/31/01	10/31/01	10/31/01	10/31/01	10/31/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,2,3,4,6,7,8,9-OCDD	2.49	0.0021 J	0.025	0.0879	0.0015 J	0.0208	0.00032 J
1,2,3,4,6,7,8,9-OCDF	0.517	0.0007 J	0.0053 J	0.0226	0.00017 J	0.0042 J	0.00006 J
1,2,3,4,6,7,8-HpCDD	0.21	0.00021 J	0.0021 J	0.0071	0.00005 U	0.002 J	0.00005 U
1,2,3,4,6,7,8-HpCDF	0.0686	0.00008 J	0.00067 J	0.0025 J	0.00003 U	0.00079 J	0.00003 U
1,2,3,4,7,8,9-HpCDF	0.0056	0.00003 U	0.00006 J	0.00015 J	0.00004 U	0.00003 U	0.00003 U
1,2,3,4,7,8-HxCDD	0.0015 J	0.00003 U	0.00003 U	0.00004 U	0.00003 U	0.00002 U	0.00003 U
1,2,3,4,7,8-HxCDF	0.0063	0.00002 U	0.00003 J	0.00002 U	0.00002 U	0.00002 U	0.00002 U
1,2,3,6,7,8-HxCDD	0.0065	0.00004 U	0.00007 J	0.00017 J	0.00004 U	0.00007 J	0.00004 U
1,2,3,6,7,8-HxCDF	0.0029 J	0.00002 U	0.00002 U	0.00002 U	0.00003 U	0.00002 U	0.00002 U
1,2,3,7,8,9-HxCDD	0.0025 J	0.00003 U	0.00003 J	0.00008 J	0.00003 U	0.00002 U	0.00003 U
1,2,3,7,8,9-HxCDF	0.0008 U	0.00002 U	0.00002 U	0.00003 U	0.00003 U	0.00002 U	0.00003 U
1,2,3,7,8-PeCDD	0.0015 J	0.00004 U	0.00004 U	0.00004 U	0.00005 U	0.00004 U	0.00005 U
1,2,3,7,8-PeCDF	0.0001 U	0.00003 U	0.00002 U	0.00003 U	0.00003 U	0.00002 U	0.00003 U
2,3,4,6,7,8-HxCDF	0.0007 U	0.00003 U	0.00002 U	0.00003 U	0.00003 U	0.00002 U	0.00003 U
2,3,4,7,8-PeCDF	0.0001 U	0.00003 U	0.00002 U	0.00003 U	0.00003 U	0.00002 U	0.00003 U
2,3,7,8-TCDD	0.0001 U	0.00003 U	0.00003 U	0.00003 U	0.00004 U	0.00002 U	0.00003 U
2,3,7,8-TCDF	0.00009 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T3-C1**	**CBS-CSB-T3-E1**	**CBS-CSB-T3-W1**	**CBS-CSB-T4-C1**	**CBS-CSB-T4-E1**	**CBS-CSB-T4-W1**	**CBS-CSB-T5-C1**
Sample date	**10/31/01**	**10/31/01**	**10/31/01**	**11/1/01**	**11/1/01**	**11/1/01**	**11/1/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.0316	0.483	0.0034 J	0.003 J	0.0073	0.00018 J	0.00072 J
1,2,3,4,6,7,8,9-OCDF	0.0032 J	0.039	0.00062 J	0.00068 J	0.0012 J	0.00006 J	0.00019 J
1,2,3,4,6,7,8-HpCDD	0.0021 J	0.0584	0.00027 J	0.00023 J	0.00055 J	0.00003 U	0.00004 U
1,2,3,4,6,7,8-HpCDF	0.0011 J	0.0097	0.00007 U	0.00011 J	0.00026 J	0.00002 U	0.00003 U
1,2,3,4,7,8,9-HpCDF	0.00013 J	0.00009 U	0.00008 U	0.00004 U	0.00002 U	0.00002 U	0.00003 U
1,2,3,4,7,8-HxCDD	0.00006 U	0.00048 J	0.00007 U	0.00004 U	0.00002 U	0.00002 U	0.00003 U
1,2,3,4,7,8-HxCDF	0.00074 J	0.00033 J	0.00005 U	0.00003 U	0.00001 U	0.00001 U	0.00002 U
1,2,3,6,7,8-HxCDD	0.00013 J	0.0015 J	0.00009 U	0.00004 U	0.00002 U	0.00002 U	0.00003 U
1,2,3,6,7,8-HxCDF	0.0003 J	0.00006 U	0.00006 U	0.00002 U	0.00001 U	0.00001 U	0.00002 U
1,2,3,7,8,9-HxCDD	0.00014 J	0.0016 J	0.00008 U	0.00004 U	0.00002 U	0.00002 U	0.00003 U
1,2,3,7,8,9-HxCDF	0.00004 U	0.00007 U	0.00006 U	0.00003 U	0.00002 U	0.00002 U	0.00003 U
1,2,3,7,8-PeCDD	0.00021 J	0.00028 J	0.00007 U	0.00005 U	0.00003 U	0.00003 U	0.00004 U
1,2,3,7,8-PeCDF	0.00009 J	0.00011 J	0.00005 U	0.00003 U	0.00002 U	0.00002 U	0.00002 U
2,3,4,6,7,8-HxCDF	0.00004 U	0.00007 U	0.00006 U	0.00003 U	0.00002 U	0.00002 U	0.00002 U
2,3,4,7,8-PeCDF	0.00004 U	0.00031 J	0.00005 U	0.00003 U	0.00002 U	0.00002 U	0.00003 U
2,3,7,8-TCDD	0.00005 U	0.00006 U	0.00005 U	0.00003 U	0.00002 U	0.00002 U	0.00002 U
2,3,7,8-TCDF	0.00003 U	0.00063 J	0.00004 U	0.00002 U	0.00001 U	0.00001 U	0.00002 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T5-E1	CBS-CSB-T5-W1	CBS-CSB-T6-C1	CBS-CSB-T6-C1-D	CBS-CSB-T6-E1	CBS-CSB-T6-W1	CBS-CSB-T7-C1
Sample date	11/1/01	11/1/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.0611	0.00023 J	0.014	0.011	0.0075	0.0011 J	0 00069 J
1,2,3,4,6,7,8,9-OCDF	0.0228	0.00007 U	0.0042 J	0.0046 J	0.00079 J	0.00039 J	0 00014 J
1,2,3,4,6,7,8-HpCDD	0.0054	0.00004 U	0.0012 J	0.00091 J	0.00067 J	0.00013 J	0.00007 U
1,2,3,4,6,7,8-HpCDF	0.0032 J	0.00002 U	0.00068 J	0.0006 J	0.00023 J	0.00006 J	0 00003 J
1,2,3,4,7,8,9-HpCDF	0.00012 J	0.00003 U	0.00006 U	0.00007 U	0.00003 U	0.00005 U	0.00003 U
1,2,3,4,7,8-HxCDD	0.00002 U	0.00002 U	0.00007 U	0.00008 U	0.00003 U	0.00005 U	0.00004 U
1,2,3,4,7,8-HxCDF	0.00008 J	0.00002 U	0.00005 U	0.00006 U	0.00003 U	0.00004 U	0.00003 U
1,2,3,6,7,8-HxCDD	0.0002 J	0.00003 U	0.00008 U	0.0001 U	0.00003 J	0.00006 U	0.00005 U
1,2,3,6,7,8-HxCDF	0.00002 U	0.00002 U	0.00005 U	0.00006 U	0.00003 U	0.00004 U	0.00003 U
1,2,3,7,8,9-HxCDD	0.00006 J	0.00002 U	0.00007 U	0.00008 U	0.00003 J	0.00005 U	0.00004 U
1,2,3,7,8,9-HxCDF	0.00002 U	0.00002 U	0.00005 U	0.00007 U	0.00003 U	0.00005 U	0.00003 U
1,2,3,7,8-PeCDD	0.00003 U	0.00003 U	0.0001 U	0.0001 U	0.00008 U	0.00008 U	0.00008 U
1,2,3,7,8-PeCDF	0.00002 U	0.00002 U	0.00009 U	0.0001 U	0.00005 U	0.00005 U	0.00005 U
2,3,4,6,7,8-HxCDF	0.00002 U	0.00002 U	0.00006 U	0.00007 U	0.00003 U	0.00005 U	0 00003 U
2,3,4,7,8-PeCDF	0.00002 U	0.00002 U	0.0001 U	0.0001 U	0.00005 U	0.00005 U	0 00005 U
2,3,7,8-TCDD	0.00002 U	0.00002 U	0.00009 U	0.00009 U	0.00005 U	0.00005 U	0 00006 U
2,3,7,8-TCDF	0.00004 J	0.00002 U	0.00007 U	0.00009 U	0.00004 U	0.00004 U	0 00004 U

Notes:
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Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T7-E1	CBS-CSB-T7-W1	CBS-CSB-T8-C1	CBS-CSB-T8-E1	CBS-CSB-T8-W1	CBS-CSB-T9-C1	CBS-CSB-T9-E1
Sample date	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.003 J	0.0166 J	0.00054 J	0.0029 J	0.0071	0.00017 J	0.0054 J
1,2,3,4,6,7,8,9-OCDF	0.00024 J	0.0013 J	0.0002 J	0.00046 J	0.00063 J	0.00004 J	0.0014 J
1,2,3,4,6,7,8-HpCDD	0.00011 J	0.0012 J	0.00008 U	0.00018 J	0.00065 J	0.00002 U	0.00052 J
1,2,3,4,6,7,8-HpCDF	0.00006 J	0.00038 J	0.00004 J	0.00011 J	0.00023 J	0.000009 U	0.00036 J
1,2,3,4,7,8,9-HpCDF	0.00004 U	0.00004 U	0.00004 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U
1,2,3,4,7,8-HxCDD	0.00004 U	0.00004 U	0.00005 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U
1,2,3,4,7,8-HxCDF	0.00003 U	0.00003 U	0.00003 U	0.000007 U	0.000008 U	0.000007 U	0.000008 U
1,2,3,6,7,8-HxCDD	0.00005 U	0.00004 J	0.00006 U	0.00001 U	0.00003 J	0.00001 U	0.00001 U
1,2,3,6,7,8-HxCDF	0.00003 U	0.00003 U	0.00003 U	0.000007 U	0.000007 U	0.000006 U	0.000008 U
1,2,3,7,8,9-HxCDD	0.00004 U	0.00004 U	0.00005 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U
1,2,3,7,8,9-HxCDF	0.00003 U	0.00003 U	0.00003 U	0.000008 U	0.000009 U	0.000007 U	0.000009 U
1,2,3,7,8-PeCDD	0.00009 U	0.00007 U	0.00009 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U
1,2,3,7,8-PeCDF	0.00006 U	0.00004 U	0.00006 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U
2,3,4,6,7,8-HxCDF	0.00004 U	0.00004 U	0.00004 U	0.000008 U	0.000009 U	0.000008 U	0.00001 U
2,3,4,7,8-PeCDF	0.00006 U	0.00004 U	0.00006 U	0.00002 U	0.00002 U	0.00001 U	0.00002 U
2,3,7,8-TCDD	0.00006 U	0.00004 U	0.00006 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U
2,3,7,8-TCDF	0.00004 U	0.00003 U	0.00004 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U

Notes:
J - Detected, estimated.
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Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T9-W1	CBS-CSB-T10-C1	CBS-CSB-T10-E1	CBS-CSB-T10-W1	CBS-CSB-T11-C1	CBS-CSB-T11-C1-D	CBS-CSB-T11-E1
Sample date	11/8/01	11/8/01	11/8/01	11/8/01	11/19/01	11/19/01	11/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.0092	0.0011 J	0.0237	0.0138	0.0298	0.117	0.0072
1,2,3,4,6,7,8,9-OCDF	0.0011 J	0.00054 J	0.0103	0.0042 J	0.0094	0.0587	0.002 J
1,2,3,4,6,7,8-HpCDD	0.00093 J	0.0001 J	0.0025 J	0.0015 J	0.0027 J	0.0145	0.00064 J
1,2,3,4,6,7,8-HpCDF	0.00034 J	0.00009 J	0.0017 J	0.00097 J	0.0013 J	0.0079	0.0005 J
1,2,3,4,7,8,9-HpCDF	0.00001 U	0.00001 U	0.00007 J	0.00002 U	0.00003 U	0.00042 J	0.00003 U
1,2,3,4,7,8-HxCDD	0.00001 U	0.00001 U	0.00002 U	0.00002 U	0.00003 U	0.00002 U	0.00003 U
1,2,3,4,7,8-HxCDF	0.000007 U	0.000007 U	0.00004 J	0.00002 J	0.00002 U	0.00015 J	0.00002 U
1,2,3,6,7,8-HxCDD	0.00003 J	0.00001 U	0.00009 J	0.00006 J	0.00009 J	0.00034 J	0.00004 U
1,2,3,6,7,8-HxCDF	0.000007 U	0.000007 U	0.000009 U	0.00001 U	0.00002 U	0.00002 U	0.00002 U
1,2,3,7,8,9-HxCDD	0.00002 J	0.00001 U	0.00002 U	0.00004 J	0.00003 U	0.00005 J	0.00003 U
1,2,3,7,8,9-HxCDF	0.000008 U	0.000008 U	0.00001 U	0.00001 U	0.00002 U	0.00001 U	0.00002 U
1,2,3,7,8-PeCDD	0.00002 U	0.00002 U	0.00003 U	0.00003 U	0.00004 U	0.00003 U	0.00004 U
1,2,3,7,8-PeCDF	0.00001 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00003 U
2,3,4,6,7,8-HxCDF	0.000008 U	0.000008 U	0.00001 U	0.00001 U	0.00002 U	0.00001 U	0.00002 U
2,3,4,7,8-PeCDF	0.00002 U	0.00002 U	0.00002 U	0.00003 U	0.00003 U	0.00002 U	0.00003 U
2,3,7,8-TCDD	0.00001 U	0.00001 U	0.00002 U	0.00002 U	0.00002 U	0.00001 U	0.00002 U
2,3,7,8-TCDF	0.00001 U	0.00001 U	0.00001 U	0.00002 U	0.00002 U	0.00006 J	0.00002 U

Notes:
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Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T11-W1	CBS-CSB-T12-C1	CBS-CSB-T12-E1	CBS-CSB-T12-W1	CBS-CSB-T13-C1	CBS-CSB-T13-E1	CBS-CSB-T13-W1
Sample date	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.0159	0.00084 J	0.0101	0.012	0.0011 J	0.0023 J	0.0034 J
1,2,3,4,6,7,8,9-OCDF	0.0017 J	0.00048 J	0.0029 J	0.0018 J	0.0003 J	0.00036 J	0.00063 J
1,2,3,4,6,7,8-HpCDD	0.0016 J	0.0003 J	0.00086 J	0.001 J	0.00008 J	0.00013 J	0.0003 J
1,2,3,4,6,7,8-HpCDF	0.00044 J	0.00017 J	0.00064 J	0.00036 J	0.00004 J	0.00009 J	0.00016 J
1,2,3,4,7,8,9-HpCDF	0.00003 U	0.00037 J	0.00003 U	0.00001 U	0.00001 U	0.00001 U	0.00002 U
1,2,3,4,7,8-HxCDD	0.00003 U	0.00004 U	0.00004 J	0.00003 J	0.00001 U	0.00001 U	0.00001 U
1,2,3,4,7,8-HxCDF	0.00002 U	0.00017 J	0.00002 U	0.000006 U	0.000007 U	0.000008 U	0.00001 U
1,2,3,6,7,8-HxCDD	0.00006 J	0.00005 U	0.00003 U	0.00002 J	0.00001 U	0.00001 U	0.00002 U
1,2,3,6,7,8-HxCDF	0.00002 U	0.00004 U	0.00002 U	0.000006 U	0.000007 U	0.000007 U	0.000009 U
1,2,3,7,8,9-HxCDD	0.00003 U	0.00015 J	0.00002 U	0.00003 J	0.00001 U	0.00001 U	0.00001 U
1,2,3,7,8,9-HxCDF	0.00002 U	0.00003 U	0.00002 U	0.000007 U	0.000008 U	0.000009 U	0.00001 U
1,2,3,7,8-PeCDD	0.00004 U	0.00009 J	0.00003 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U
1,2,3,7,8-PeCDF	0.00003 U	0.00008 J	0.00002 U	0.00001 U	0.00001 U	0.00001 U	0.00002 U
2,3,4,6,7,8-HxCDF	0.00002 U	0.00003 U	0.00002 U	0.000007 U	0.000008 U	0.000008 U	0.00001 U
2,3,4,7,8-PeCDF	0.00003 U	0.00014 J	0.00003 U	0.00001 U	0.00001 U	0.00001 U	0.00002 U
2,3,7,8-TCDD	0.00002 U	0.00002 U	0.00002 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U
2,3,7,8-TCDF	0.00002 U	0.00018 J	0.00002 J	0.000008 U	0.000008 U	0.000009 U	0.00001 U

Notes:
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Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T14-1	CBS-CSB-T15-1	CBS-CSB-T16-1	CBS-CSB-T17-C1	CBS-CSB-T17-E1	CBS-CSB-T17-E1D	CBS-CSB-T17-WI
Sample date	12/20/01	12/20/01	12/20/01	11/9/01	11/9/01	11/9/01	11/9/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.0023 J	0.0107	0.298 J	0.00074 J	0.41	0.0832	0.00051 J
1,2,3,4,6,7,8,9-OCDF	0.00036 U	0.0024 J	0.115	0.0001 J	0.238	0.0311	0.00001 U
1,2,3,4,6 7,8-HpCDD	0.00023 J	0.0011 J	0.0282	0.00003 U	0.0392	0.0072	0 000008 U
1,2,3,4,6 7,8-HpCDF	0.00009 J	0.00037 J	0.0155	0.00002 U	0.0215	0.0037	0 000005 U
1,2,3,4,7 8,9-HpCDF	0.00002 U	0.00003 U	0.00095 J	0.00002 U	0.0005 U	0.0002 U	0 000006 U
1,2,3,4,7,8-HxCDD	0.00003 U	0.00003 U	0.00002 U	0.00002 U	0.0003 U	0.0001 U	0 000005 U
1,2,3,4,7,8-HxCDF	0.00001 U	0.00002 U	0.00041 J	0.00001 U	0.0002 U	0.00009 U	0 000004 U
1,2,3,6,7,8-HxCDD	0.00003 U	0.00003 U	0.00099 J	0.00002 U	0.0116 J	0.0002 U	0 000006 U
1,2,3,6,7,8-HxCDF	0.00002 U	0.00002 U	0.00013 J	0.00001 U	0.0003 U	0.0001 U	0 000004 U
1,2,3,7,8,9-HxCDD	0.00003 U	0.00003 U	0.00017 J	0.00002 U	0.0004 U	0.0002 U	0 000005 U
1,2,3,7,8,9-HxCDF	0.00002 U	0.00002 U	0.00002 U	0.00001 U	0.0003 U	0.0001 U	0 000004 U
1,2,3,7,8-PeCDD	0.00003 U	0.00004 U	0.00058 J	0.00002 U	0.0002 U	0.0001 U	0 000009 U
1,2,3,7,8-PeCDF	0.00002 U	0.00003 U	0.0014 J	0.00001 U	0.0001 U	0.00008 U	0 000006 U
2,3,4,6,7,8-HxCDF	0.00002 U	0.00002 U	0.00018 J	0.00001 U	0.0003 U	0.0001 U	0.000004 U
2,3,4,7,8-PeCDF	0.00003 U	0.00003 U	0.00019 J	0.00002 U	0.0001 U	0.00008 U	0.000008 U
2,3,7,8-TCDD	0.00002 U	0.00002 U	0.00002 U	0.00001 U	0.0001 U	0.00008 U	0.000006 U
2,3,7,8-TCDF	0.00002 U	0.00002 U	0.00018 J	0.00001 U	0.00007 U	0.00005 U	0.000005 U

Notes:
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Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**C**	**C**	**C**
Sample	**CBS-CSB-T18-C1**	**CBS-CSB-T18-E1**	**CBS-CSB-T18-W1**	**CBS-CSB-T18-W1D**	**CBS-CSC-T1-1**	**CBS-CSC-T2-1**	**CBS-CSC-T3-1**
Sample date	**11/9/01**	**11/9/01**	**11/9/01**	**11/9/01**	**12/13/01**	**12/13/01**	**12/13/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.00046 J	0.0018 J	0.0019 J	0.0011 J	0.00074 J	0.0081	0.0006 J
1,2,3,4,6,7,8,9-OCDF	0.00008 J	0.00034 J	0.0003 U	0.0003 U	0.00014 J	0.0027 J	0.00006 J
1,2,3,4,6,7,8-HpCDD	0.00003 J	0.0001 UJ	0.0002 U	0.0001 U	0.00005 J	0.00055 J	0.00004 J
1,2,3,4,6,7,8-HpCDF	0.00002 J	0.00009 U	0.0001 U	0.0001 U	0.00003 J	0.00036 J	0.00002 J
1,2,3,4,7,8,9-HpCDF	0.000006 U	0.0001 U	0.0001 U	0.0001 U	0.00001 U	0.00001 U	0.00001 U
1,2,3,4,7,8-HxCDD	0.000005 U	0.00007 U	0.00009 U	0.00007 U	0.00001 U	0.00001 U	0.000009 U
1,2,3,4,7,8-HxCDF	0.000004 U	0.00005 U	0.00006 U	0.00006 U	0.000006 U	0.00001 J	0.000006 U
1,2,3,6,7,8-HxCDD	0.000006 U	0.0001 U	0.0001 U	0.0001 U	0.00001 U	0.00002 J	0.00001 U
1,2,3,6,7,8-HxCDF	0.000004 U	0.00006 U	0.00006 U	0.00006 U	0.000006 U	0.000006 U	0.000005 U
1,2,3,7,8,9-HxCDD	0.000005 U	0.00009 U	0.0001 U	0.0001 U	0.00001 U	0.00001 U	0.00001 U
1,2,3,7,8,9-HxCDF	0.000004 U	0.00006 U	0.00007 U	0.00007 U	0.000007 U	0.000007 U	0.000006 U
1,2,3,7,8-PeCDD	0.000008 U	0.00006 U	0.00008 U	0.00007 U	0.00001 U	0.00002 U	0.00001 U
1,2,3,7,8-PeCDF	0.000006 U	0.00004 U	0.00005 U	0.00004 U	0.00001 U	0.00001 U	0.00001 U
2,3,4,6,7,8-HxCDF	0.000004 U	0.00006 U	0.00007 U	0.00006 U	0.000007 U	0.000007 U	0.000006 U
2,3,4,7,8-PeCDF	0.000008 U	0.00004 UJ	0.00005 U	0.00004 U	0.00001 U	0.00001 U	0.00001 U
2,3,7,8-TCDD	0.000005 U	0.00003 U	0.00004 U	0.00004 U	0.000008 U	0.00001 U	0.000008 U
2,3,7,8-TCDF	0.000005 U	0.00002 U	0.00003 U	0.00003 U	0.000009 U	0.00001 U	0.000008 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	C	C	C	C	C	C	C
Sample	CBS-CSC-T4-1	CBS-CSC-T4-1-FD	CBS-CSC-T5-1	CBS-CSC-T6-1	CBS-CSC-T7-1	CBS-CSC-T8-1	CBS-CSC-T9-1
Sample date	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01	12/13/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.0235	0.0011 J	0.0012 J	0.0105	0.00069 J	0.0025 J	0.0031 J
1,2,3,4,6,7,8,9-OCDF	0.0112	0.00041 J	0.0003 J	0.0025 J	0.00008 J	0.001 J	0.00054 J
1,2,3,4,6,7,8-HpCDD	0.0023 J	0.0001 J	0.00009 J	0.00064 J	0.00002 U	0.00022 J	0.00018 J
1,2,3,4,6,7,8-HpCDF	0.0023 J	0.00005 J	0.00006 J	0.00034 J	0.00002 J	0.00013 J	0.00008 J
1,2,3,4,7,8,9-HpCDF	0.00005 J	0.00002 U	0.00001 U	0.00001 U	0.00002 U	0.00002 U	0.00001 U
1,2,3,4,7,8-HxCDD	0.00001 U	0.00002 U	0.00002 U	0.00001 U	0.00002 U	0.00002 U	0.00001 U
1,2,3,4,7,8-HxCDF	0.00003 J	0.00001 U	0.00001 U	0.00002 J	0.00001 U	0.00001 U	0.000007 U
1,2,3,6,7,8-HxCDD	0.00006 J	0.00002 U	0.00002 U	0.00003 J	0.00002 U	0.00002 U	0.00001 U
1,2,3,6,7,8-HxCDF	0.00001 J	0.00001 U	0.000008 U	0.000007 U	0.00001 U	0.000009 U	0.000006 U
1,2,3,7,8,9-HxCDD	0.00003 J	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00001 U
1,2,3,7,8,9-HxCDF	0.000007 U	0.00001 U	0.00001 U	0.000009 U	0.00001 U	0.00001 U	0.000008 U
1,2,3,7,8-PeCDD	0.00002 U	0.00003 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U
1,2,3,7,8-PeCDF	0.00001 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00001 U
2,3,4,6,7,8-HxCDF	0.00002 J	0.00001 U	0.00001 U	0.000008 U	0.00001 U	0.00001 U	0.000008 U
2,3,4,7,8-PeCDF	0.00001 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00001 U
2,3,7,8-TCDD	0.00001 U	0.00002 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U
2,3,7,8-TCDF	0.00002 J	0.00002 U	0.00001 U	0.00002 J	0.00001 U	0.00001 U	0.00001 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**D**	**D**	**D**	**D**	**D**	**D**	**E**
Sample	**CBS-CSD-T1-1**	**CBS-CSD-T2-1**	**CBS-CSD-T3-1**	**CBS-CSD-T4-1**	**CBS-CSD-T5-1**	**CBS-CSD-T6-1**	**CBS-CSE-T1-1**
Sample date	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/18/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.0033 J	0.0136	0.0014 J	0.0011 J	0.0037 J	0.312 J	0.00074 J
1,2,3,4,6,7,8,9-OCDF	0.00047 J	0.0089	0.00031 J	0.00044 J	0.0016 J	0.174 J	0.00017 J
1,2,3,4,6,7,8-HpCDD	0.00017 J	0.0012 J	0.00009 J	0.0001 J	0.00029 J	0.0277	0.00007 J
1,2,3,4,6,7,8-HpCDF	0.0001 J	0.0013 J	0.00002 U	0.00009 J	0.00026 J	0.0226	0.00002 U
1,2,3,4,7,8,9-HpCDF	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.0011 J	0.00002 U
1,2,3,4,7,8-HxCDD	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.0001 J	0.00002 U
1,2,3,4,7,8-HxCDF	0.00001 UJ	0.00001 UJ	0.00002 UJ	0.00001 UJ	0.00001 UJ	0.00048 J	0.00002 U
1,2,3,6,7,8-HxCDD	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00099 J	0.00002 U
1,2,3,6,7,8-HxCDF	0.00002 UJ	0.00001 UJ	0.00002 UJ	0.00002 UJ	0.00001 UJ	0.00012 J	0.00002 U
1,2,3,7,8,9-HxCDD	0.00002 U	0.00006 J	0.00002 U	0.00002 U	0.00002 U	0.00029 J	0.00002 U
1,2,3,7,8,9-HxCDF	0.00001 UJ	0.00002 UJ	0.00002 UJ	0.00002 UJ	0.00001 UJ	0.0001 J	0.00002 U
1,2,3,7,8-PeCDD	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00003 U
1,2,3,7,8-PeCDF	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00038 J	0.00002 U
2,3,4,6,7,8-HxCDF	0.00001 UJ	0.00002 UJ	0.00002 UJ	0.00002 UJ	0.00001 UJ	0.00031 J	0.00002 U
2,3,4,7,8-PeCDF	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00009 J	0.00002 U
2,3,7,8-TCDD	0.00001 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U	0.00002 U
2,3,7,8-TCDF	0.00001 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U	0.0002 J	0.00001 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	E	E	E	E	E	E	E
Sample	CBS-CSE-T2-1	CBS-CSE-T3-1	CBS-CSE-T3-1-FD	CBS-CSE-T4-1	CBS-CSE-T5-1	CBS-CSE-T6-1	CBS-CSE-T7-1
Sample date	12/18/01	12/18/01	12/18/01	12/18/01	12/18/01	12/18/01	12/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.0035 J	0.0014 J	0.0018 J	0.001 J	0.00051 J	0.0028 J	0.0052 J
1,2,3,4,6,7,8,9-OCDF	0.00098 J	0.00065 J	0.00064 J	0.00011 J	0.00013 J	0.0014 J	0.0013 J
1,2,3,4,6,7,8-HpCDD	0.00031 J	0.00016 J	0.00014 J	0.00006 J	0.00005 U	0.00026 J	0.00043 J
1,2,3,4,6,7,8-HpCDF	0.0002 J	0.00009 J	0.00014 J	0.00003 U	0.00005 U	0.00019 J	0.00019 J
1,2,3,4,7,8,9-HpCDF	0.00002 U	0.00002 U	0.00003 U	0.00003 U	0.00005 U	0.000006 U	0.00003 U
1,2,3,4,7,8-HxCDD	0.00002 U	0.00002 U	0.00002 U	0.00003 U	0.00004 U	0.000007 U	0.00002 U
1,2,3,4,7,8-HxCDF	0.00001 U	0.00001 U	0.00002 U	0.00002 U	0.00003 U	0.000004 U	0.00002 U
1,2,3,6,7,8-HxCDD	0.00002 U	0.00002 U	0.00003 U	0.00004 U	0.00004 U	0.00001 J	0.00003 U
1,2,3,6,7,8-HxCDF	0.00002 U	0.00001 U	0.00002 U	0.00003 U	0.00004 U	0.000004 U	0.00002 U
1,2,3,7,8,9-HxCDD	0.00002 U	0.00002 U	0.00003 U	0.00003 U	0.00004 U	0.000007 U	0.00003 U
1,2,3,7,8,9-HxCDF	0.00002 U	0.00001 U	0.00002 U	0.00003 U	0.00004 U	0.000005 U	0.00002 U
1,2,3,7,8-PeCDD	0.00003 U	0.00002 U	0.00003 U	0.00004 U	0.00005 U	0.00001 U	0.00003 U
1,2,3,7,8-PeCDF	0.00002 U	0.00002 U	0.00003 U	0.00003 U	0.00004 U	0.000007 U	0.00002 U
2,3,4,6,7,8-HxCDF	0.00002 U	0.00001 U	0.00002 U	0.00003 U	0.00003 U	0.000005 U	0.00002 U
2,3,4,7,8-PeCDF	0.00002 U	0.00002 U	0.00003 U	0.00003 U	0.00004 U	0.000007 U	0.00003 U
2,3,7,8-TCDD	0.00002 U	0.00001 U	0.00002 U	0.00002 U	0.00003 U	0.000007 U	0.00002 U
2,3,7,8-TCDF	0.00001 U	0.00001 U	0.00002 U	0.00002 U	0.00003 U	0.000006 U	0.00002 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**E**	**E**	**E**	**E**	**E**	**E**	**E**
Sample	**CBS-CSE-T8-1**	**CBS-CSE-T9-1**	**CBS-CSE-T10-1**	**CBS-CSE-T11-1**	**CBS-CSE-T12-1**	**CBS-CSE-T13-2**	**CBS-CSE-T14-1**
Sample date	**12/19/01**	**12/19/01**	**12/19/01**	**12/19/01**	**12/19/01**	**2/14/02**	**12/18/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.0031 J	0.00032 U	0.00019 U	0.0023 J	0.00026 U	0.0038 J	0.0026 J
1,2,3,4,6,7,8,9-OCDF	0.0013 J	0.00005 U	0.00008 U	0.00099 J	0.00006 U	0.0015 J	0.0011 J
1,2,3,4,6,7,8-HpCDD	0.00023 J	0.00003 U	0.00006 U	0.00023 J	0.00004 U	0.0003 J	0.00024 J
1,2,3,4,6,7,8-HpCDF	0.00016 J	0.00002 U	0.00004 U	0.00015 J	0.00003 U	0.00022 J	0.00019 J
1,2,3,4,7,8,9-HpCDF	0.00002 U	0.00003 U	0.00004 U	0.00003 U	0.00003 U	0.000007 U	0.000007 U
1,2,3,4,7,8-HxCDD	0.00002 U	0.00002 U	0.00004 U	0.00003 U	0.00003 U	0.000007 U	0.000007 U
1,2,3,4,7,8-HxCDF	0.00001 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.000005 U	0.000005 U
1,2,3,6,7,8-HxCDD	0.00002 U	0.00003 U	0.00004 U	0.00003 U	0.00003 U	0.00001 J	0.00001 J
1,2,3,6,7,8-HxCDF	0.00002 U	0.00002 U	0.00003 U	0.00002 U	0.00002 U	0.000004 U	0.000005 U
1,2,3,7,8,9-HxCDD	0.00002 U	0.00003 U	0.00005 U	0.00003 U	0.00003 U	0.000007 U	0.000008 U
1,2,3,7,8,9-HxCDF	0.00002 U	0.00002 U	0.00003 U	0.00002 U	0.00002 U	0.000005 U	0.000005 U
1,2,3,7,8-PeCDD	0.00003 U	0.00003 U	0.00005 U	0.00004 U	0.00003 U	0.00001 U	0.00001 U
1,2,3,7,8-PeCDF	0.00002 U	0.00002 U	0.00004 U	0.00003 U	0.00003 U	0.000008 U	0.000008 U
2,3,4,6,7,8-HxCDF	0.00002 U	0.00002 U	0.00003 U	0.00002 U	0.00002 U	0.000005 U	0.000005 U
2,3,4,7,8-PeCDF	0.00003 U	0.00003 U	0.00004 U	0.00003 U	0.00003 U	0.000008 U	0.000008 U
2,3,7,8-TCDD	0.00002 U	0.00002 U	0.00003 U	0.00002 U	0.00002 U	0.000008 U	0.000007 U
2,3,7,8-TCDF	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.000007 U	0.000007 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	E	E	E	E	F	F	F
Sample	CBS-CSE-T15-1	CBS-CSE-T15-1-FD	CBS-CSE-T16-1	CBS-CSE-T17-1	CBS-CSF-T1-1	CBS-CSF-T2-1	CBS-CSF-T3-1
Sample date	12/18/01	12/18/01	12/21/01	12/21/01	12/21/01	12/11/01	12/11/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.00062 J	0.0006 J	0.037	0.0474	0.0011 J	0.00058 J	0.0074
1,2,3,4,6,7,8,9-OCDF	0.00009 J	0.00012 J	0.0166	0.0149	0.00038 U	0.00013 J	0.0025 J
1,2,3,4,6,7,8-HpCDD	0.00005 J	0.00004 J	0.0029 J	0.0045	0.0001 J	0.00001 U	0.00061 J
1,2,3,4,6,7,8-HpCDF	0.00002 J	0.00003 J	0.0017 J	0.0021 J	0.00005 J	0.00001 U	0.00037 J
1,2,3,4,7,8,9-HpCDF	0.000006 U	0.000005 U	0.0001 J	0.0001 J	0.00001 U	0.00001 U	0.00001 U
1,2,3,4,7,8-HxCDD	0.000007 U	0.000006 U	0.00002 U	0.00001 U	0.00001 U	0.00001 U	0.00001 U
1,2,3,4,7,8-HxCDF	0.000004 U	0.000004 U	0.00005 J	0.00005 J	0.000009 U	0.00001 UJ	0.00001 UJ
1,2,3,6,7,8-HxCDD	0.000006 U	0.000006 U	0.00009 J	0.00012 J	0.00001 U	0.00001 U	0.00001 U
1,2,3,6,7,8-HxCDF	0.000004 U	0.000003 U	0.00003 J	0.00004 J	0.000008 U	0.00001 UJ	0.00001 UJ
1,2,3,7,8,9-HxCDD	0.000007 U	0.000006 U	0.00002 U	0.00011 J	0.00001 U	0.00001 U	0.00001 U
1,2,3,7,8,9-HxCDF	0.000004 U	0.000004 U	0.00001 U	0.00001 U	0.00001 U	0.00001 UJ	0.00001 UJ
1,2,3,7,8-PeCDD	0.00001 U	0.000008 U	0.00002 U	0.00004 J	0.00002 U	0.00001 U	0.00001 U
1,2,3,7,8-PeCDF	0.000008 U	0.000007 U	0.00002 U	0.00001 U	0.00002 U	0.00001 U	0.00001 U
2,3,4,6,7,8-HxCDF	0.000004 U	0.000004 U	0.00001 U	0.00001 U	0.00001 U	0.00001 UJ	0.00001 UJ
2,3,4,7,8-PeCDF	0.000008 U	0.000007 U	0.00002 U	0.00001 U	0.00002 U	0.00001 U	0.00001 U
2,3,7,8-TCDD	0.000007 U	0.000006 U	0.00002 U	0.00001 U	0.00001 U	0.000009 U	0.000008 U
2,3,7,8-TCDF	0.000007 U	0.000006 U	0.00004 J	0.00005 J	0.00001 U	0.000007 U	0.000007 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F	F	F
Sample	CBS-CSF-T4-1	CBS-CSF-T5-1	CBS-CSF-T6-1	CBS-CSF-T6-1-FD	CBS-CSF-T7-1	CBS-CSF-T8-1	CBS-CSF-T9-1
Sample date	12/11/01	1/8/02	1/16/02	1/16/02	1/16/02	1/23/02	1/23/02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.00084 J	0.0059 J	0.0017 J	0.0011 J	0.00066 J	0.00031 J	0.00069 J
1,2,3,4,6,7,8,9-OCDF	0.00003 U	0.0031 J	0.00018 J	0.00023 J	0.00014 J	0.00009 UJ	0.00028 J
1,2,3,4,6,7,8-HpCDD	0.00002 U	0.0015 J	0.00009 J	0.00006 J	0.00008 J	0.00005 U	0.00007 J
1,2,3,4,6,7,8-HpCDF	0.00002 U	0.00084 J	0.00003 U	0.00003 U	0.00002 U	0.00004 U	0.00004 J
1,2,3,4,7,8,9-HpCDF	0.00002 U	0.00027 J	0.00003 U	0.00003 U	0.00002 U	0.00004 U	0.000008 U
1,2,3,4,7,8-HxCDD	0.00002 U	0.00018 J	0.00003 U	0.00003 U	0.00002 U	0.00004 U	0.00001 U
1,2,3,4,7,8-HxCDF	0.00002 UJ	0.00064 J	0.00002 U	0.00002 U	0.00002 U	0.00003 U	0.000006 U
1,2,3,6,7,8-HxCDD	0.00002 U	0.00041 J	0.00003 U	0.00003 U	0.00003 U	0.00005 U	0.00001 U
1,2,3,6,7,8-HxCDF	0.00002 UJ	0.00026 U	0.00002 U	0.00002 U	0.00002 U	0.00003 U	0.000006 U
1,2,3,7,8,9-HxCDD	0.00002 U	0.00055 J	0.00003 U	0.00003 U	0.00003 U	0.00005 U	0.00001 U
1,2,3,7,8,9-HxCDF	0.00002 UJ	0.00038 J	0.00002 U	0.00002 U	0.00002 U	0.00003 U	0.000006 U
1,2,3,7,8-PeCDD	0.00002 U	0.00025 J	0.00004 U	0.00003 U	0.00003 U	0.00005 U	0.00001 U
1,2,3,7,8-PeCDF	0.00002 U	0.0003 J	0.00003 U	0.00003 U	0.00003 U	0.00004 U	0.00001 U
2,3,4,6,7,8-HxCDF	0.00002 UJ	0.00026 J	0.00002 U	0.00002 U	0.00002 U	0.00003 U	0.000006 U
2,3,4,7,8-PeCDF	0.00002 U	0.00035 J	0.00003 U	0.00003 U	0.00003 U	0.00004 U	0.00001 U
2,3,7,8-TCDD	0.00001 U	0.00006 U	0.00002 U	0.00002 U	0.00002 U	0.00003 U	0.00001 U
2,3,7,8-TCDF	0.00001 U	0.00075 J	0.00002 U	0.00002 U	0.00002 U	0.00003 U	0.00001 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F	F	F
Sample	CBS-CSF-T9-1-FD	CBS-CSF-T10-1	CBS-CSF-T11-1	CBS-CSF-T12-1	CBS-CSF-T13-1	CBS-CSF-T14-1	CBS-CSF-T15-1
Sample date	1/23/02	1/25/02	1/25/02	1/23/02	1/16/02	1/8/02	1/8/02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.00083 J	0.00037 J	0.0011 J	0.00087 J	0.00014 J	0.0092	0.008
1,2,3,4,6,7,8,9-OCDF	0.00031 U	0.0001 J	0.00015 J	0.00019 U	0.00004 U	0.0076	0.0046 J
1,2,3,4,6,7,8-HpCDD	0.00008 J	0.00006 J	0.00008 J	0.00011 J	0.00003 U	0.0011 J	0.00063 J
1,2,3,4,6,7,8-HpCDF	0.00005 J	0.00002 U	0.00003 U	0.00006 J	0.00002 U	0.00093 J	0.00061 J
1,2,3,4,7,8,9-HpCDF	0.000009 U	0.00002 U	0.00003 U	0.00004 U	0.00002 U	0.0001 J	0.00002 UJ
1,2,3,4,7,8-HxCDD	0.00001 U	0.00002 U	0.00003 U	0.00004 U	0.00002 U	0.00005 J	0.00002 U
1,2,3,4,7,8-HxCDF	0.000006 U	0.00001 U	0.00002 U	0.00002 U	0.00002 U	0.00017 UJ	0.00005 U
1,2,3,6,7,8-HxCDD	0.00001 U	0.00002 U	0.00003 U	0.00004 U	0.00002 U	0.00014 J	0.00005 J
1,2,3,6,7,8-HxCDF	0.000006 U	0.00001 U	0.00002 U	0.00002 U	0.00002 U	0.00008 UJ	0.00002 U
1,2,3,7,8,9-HxCDD	0.00001 U	0.00002 U	0.00003 U	0.00004 U	0.00002 U	0.00014 J	0.00006 J
1,2,3,7,8,9-HxCDF	0.000006 U	0.00002 U	0.00002 U	0.00003 U	0.00002 U	0.00002 UJ	0.00002 UJ
1,2,3,7,8-PeCDD	0.00001 U	0.00003 U	0.00004 U	0.00005 U	0.00003 U	0.00008 J	0.00002 U
1,2,3,7,8-PeCDF	0.00001 U	0.00002 U	0.00003 U	0.00004 U	0.00002 U	0.00008 J	0.00002 U
2,3,4,6,7,8-HxCDF	0.000006 U	0.00002 U	0.00002 U	0.00003 U	0.00002 U	0.00002 UJ	0.00002 UJ
2,3,4,7,8-PeCDF	0.00001 U	0.00002 U	0.00003 U	0.00004 U	0.00002 U	0.0001 J	0.00002 U
2,3,7,8-TCDD	0.00001 U	0.00002 U	0.00002 U	0.00003 U	0.00002 U	0.00001 U	0.00001 U
2,3,7,8-TCDF	0.000009 U	0.00001 U	0.00002 U	0.00003 U	0.00002 U	0.00017 J	0.00005 J

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**F**	**F**	**SITE M**	**SITE M**	**SITE M**	**SITE M**	**SITE M**
Sample	**CBS-CSF-T15-1-FD**	**CBS-CSF-T16-1**	**SED-M-S2 0-6**	**SED-M-S3-(0-6)**	**SED-M-S4-(0-6)**	**SED-M-S5 0-6**	**SED-M-S6-(0-6)**
Sample date	**1/8/02**	**2/6/02**	**6/22/01**	**7/10/01**	**8/1/01**	**6/22/01**	**7/10/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
1,2,3,4,6,7,8,9-OCDD	0.0067	0.0022 J	0.0347	0.135	0.339 J	0.11	0.0407 J
1,2,3,4,6,7,8,9-OCDF	0.0043 J	0.00007 U	0.0134	0.032	0.153 J	0.0533	0.005 J
1,2,3,4,6,7,8-HpCDD	0.00065 J	0.00005 U	0.0043	0.0102	0.0278	0.0142	0.004 J
1,2,3,4,6,7,8-HpCDF	0.00068 J	0.00004 U	0.0023 J	0.0038	0.0153	0.0116	0.00085 J
1,2,3,4,7,8,9-HpCDF	0.00003 UJ	0.00004 U	0.00011 J	0.00004 U	0.00088 J	0.00054 J	0.00005 U
1,2,3,4,7,8-HxCDD	0.00002 U	0.00004 U	0.00002 U	0.00003 U	0.00004 U	0.00003 U	0.00004 U
1,2,3,4,7,8-HxCDF	0.00008 U	0.00002 U	0.000009 U	0.00013 J	0.00003 U	0.00038 J	0.00003 U
1,2,3,6,7,8-HxCDD	0.00004 J	0.00004 U	0.00014 J	0.00028 J	0.00091 J	0.00059 J	0.00015 J
1,2,3,6,7,8-HxCDF	0.00002 U	0.00002 U	0.000009 U	0.00002 U	0.00003 U	0.00015 J	0.00003 U
1,2,3,7,8,9-HxCDD	0.00006 J	0.00004 U	0.00009 J	0.00003 U	0.00029 J	0.00023 J	0.00004 U
1,2,3,7,8,9-HxCDF	0.00002 UJ	0.00003 U	0.00001 U	0.00003 U	0.00004 U	0.00002 U	0.00003 U
1,2,3,7,8-PeCDD	0.00002 U	0.00004 U	0.00002 U	0.00004 U	0.00006 U	0.00003 U	0.00006 U
1,2,3,7,8-PeCDF	0.00002 U	0.00003 U	0.00001 U	0.00001 U	0.00002 U	0.00001 U	0.00002 U
2,3,4,6,7,8-HxCDF	0.00002 UJ	0.00003 U	0.00001 U	0.00003 U	0.00003 U	0.00014 J	0.00003 U
2,3,4,7,8-PeCDF	0.00002 U	0.00003 U	0.00001 U	0.00002 U	0.00003 U	0.00006 J	0.00003 U
2,3,7,8-TCDD	0.00001 U	0.00002 U	0.00001 U	0.00002 U	0.00003 U	0.00002 U	0.00003 U
2,3,7,8-TCDF	0.00004 J	0.00002 U	0.00001 U	0.00001 U	0.00002 U	0.00008 J	0.00002 U

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Dioxins
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	SITE M	SITE M	SITE M	SITE M	SITE M
Sample	SED-M-S7-(0-6)	SED-M-S7-FD(0-6)	SED-M-S8 0-6	SED-M-S9-(0-6)	SED-M-S10 0-6
Sample date	8/1/01	8/1/01	6/22/01	7/10/01	6/22/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:					
1,2,3,4,6,7,8,9-OCDD	0.44 J	0.455 J	0.172	0.142	1.36
1,2,3,4,6,7,8,9-OCDF	0.12	0.129 J	0.139	0.0677	0.88
1,2,3,4,6,7,8-HpCDD	0.0399	0.0413	0.0243	0.0211	0.25
1,2,3,4,6,7,8-HpCDF	0.0141	0.0148	0.017	0.0085	0.0886
1,2,3,4,7,8,9-HpCDF	0.0012 J	0.0011 J	0.0011 J	0.00055 J	0.0072
1,2,3,4,7,8-HxCDD	0.00009 U	0.00009 U	0.00004 U	0.00003 U	0.0002 U
1,2,3,4,7,8-HxCDF	0.00006 U	0.00006 U	0.00047 J	0.00022 J	0.0043
1,2,3,6,7,8-HxCDD	0.0014 J	0.0014 J	0.00094 J	0.00056 J	0.0059
1,2,3,6,7,8-HxCDF	0.00006 U	0.00006 U	0.00002 U	0.00002 U	0.00079 J
1,2,3,7,8,9-HxCDD	0.00089 J	0.00081 J	0.00004 U	0.00013 J	0.00084 J
1,2,3,7,8,9-HxCDF	0.00007 U	0.00007 U	0.00003 U	0.00003 U	0.0002 U
1,2,3,7,8-PeCDD	0.0001 U	0.0001 U	0.00003 U	0.00004 U	0.0002 U
1,2,3,7,8-PeCDF	0.00004 U	0.00004 U	0.00001 U	0.00002 U	0.00062 J
2,3,4,6,7,8-HxCDF	0.00006 U	0.00006 U	0.00019 J	0.00003 U	0.00059 J
2,3,4,7,8-PeCDF	0.00005 U	0.00005 U	0.00002 U	0.00002 U	0.00036 J
2,3,7,8-TCDD	0.00006 U	0.00006 U	0.00002 U	0.00002 U	0.00008 U
2,3,7,8-TCDF	0.00004 U	0.00004 U	0.00009 J	0.00002 U	0.0009 J

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Metals

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T0-C1	CBS-CSB-T1-C1	CBS-CSB-T1-E1	CBS-CSB-T1-W1	CBS-CSB-T2-C1	CBS-CSB-T2-E1	CBS-CSB-T2-W1
Sample date	11/1/01	10/31/01	10/31/01	10/31/01	10/31/01	10/31/01	10/31/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Aluminum	5800	12000	18000	10000	11000	4400	11000
Antimony	3.9 J	2.8 UJ	2.7 UJ	2.5 UJ	2.9 UJ	2.5 UJ	2.7 UJ
Arsenic	14	5.5	3.6	4.8	23	12	2.7
Barium	1500	280	210	310	390	300	250
Beryllium	0.5	0.82	1.2	0.74	0.36 U	0.17 U	0.78
Cadmium	11	0.43	7.4	19	37	4.1	0.34
Calcium	21000	11000 J	9000 J	13000 J	5500 J	2700 J	12000 J
Chromium	28 J	18	25	31	170	180	36
Cobalt	23	7.4	16	14	2.7	3.6	8
Copper	10000 J	23	130	310	150	2000	17
Cyanide	0.81	0.76 U	0.74 U	0.69 U	0.79 U	0.69 U	0.67 U
Iron	28000 J	18000	21000	14000	12000	10000	12000
Lead	700	48 J	36 J	44 J	130 J	260 J	12 J
Magnesium	5100 J	6700 J	5100 J	6900 J	1600 J	820 J	6300 J
Manganese	250 J	190	300	160	71	50	140
Mercury	0.82 J	0.045 J	0.16 J	0.23 J	0.19 J	0.24 J	0.015 U
Molybdenum	1.4	0.66 U	1.5	1.5	1.3 U	0.85 U	0.7 U
Nickel	600	21	500	420	190	260	54
Potassium	1200 J	2200 J	2600 J	2000 J	1900 J	1200 J	1700 J
Selenium	1.3 UJ	1.4 UJ	1.3 UJ	1.3 UJ	1.4 UJ	1.3 UJ	1.3 UJ
Silver	9	1.4 U	0.27	0.41	1.4 U	1.3 U	1.3 U
Sodium	670	340	410	370	460	89	200
Thallium	1.3	1.4 U	0.98	0.76	1.4 U	1.3 U	1.3 U
Tin	54	6.9 U	6.7 U	6.3 U	7.2 U	470	6.7 U
Vanadium	21	30	42	31	24	12	29
Zinc	6800	220	2600	2700	2300	1200	490

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T3-C1**	**CBS-CSB-T3-E1**	**CBS-CSB-T3-W1**	**CBS-CSB-T4-C1**	**CBS-CSB-T4-E1**	**CBS-CSB-T4-W1**	**CBS-CSB-T5-C1**
Sample date	**10/31/01**	**10/31/01**	**10/31/01**	**11/1/01**	**11/1/01**	**11/1/01**	**11/1/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Aluminum	1500	2100	7900	20000	9100	1200	13000
Antimony	2.6 J	2.4 J	2.3 UJ	3 UJ	2.3 UJ	2.7 UJ	2.5 UJ
Arsenic	44	6	5	7.4	5	14	10
Barium	310	320	260	300	270	380	250
Beryllium	0.63 U	0.1 U	0.86	1.3	0.42	0.11 U	1.2
Cadmium	0.78 U	0.58 U	10	2	4.8	0.75	1.4
Calcium	2100 J	1500 J	6200 J	5200	3900	520	4800
Chromium	5.7	29	24	60 J	77 J	4.6 J	29 J
Cobalt	1.9	0.64	5.9	14	12	8.4	10
Copper	390	38	180	47 J	440 J	30 J	26 J
Cyanide	0.86 U	0.63 U	0.68 U	1	0.69 U	0.75 U	0.74 U
Iron	440	1800	11000	22000 J	13000 J	1200 J	19000 J
Lead	75 J	400 J	13 J	28	66	77	20
Magnesium	100 J	360 J	4700 J	4200 J	2100 J	94 J	4200 J
Manganese	4	7.1	73	130 J	160 J	6.4 J	110 J
Mercury	0.11 J	0.27 J	0.038 J	0.068 J	0.099 J	0.014 J	0.054 J
Molybdenum	2.8	2.6	0.53 U	0.89 U	0.75 U	0.79 U	0.83 U
Nickel	23	1.9	130	190	280	130	180
Potassium	1100 J	780 J	1800 J	3200 J	1800 J	790 J	3000 J
Selenium	1.6 UJ	1.2 UJ	1.1 UJ	1.5 UJ	1.2 UJ	1.4 UJ	1.2 UJ
Silver	1.6 U	0.71	1.1 U	1.5 U	1.2 U	1.4 U	1.2 U
Sodium	220	87	160	290	130	200	190
Thallium	1.6 U	1.2 U	1.1 U	1.5 U	1.2 U	1.4 U	1.2 U
Tin	7.8 U	11	5.7 U	7.5 U	5.8 U	6.8 U	6.1 U
Vanadium	4.4	5.2	23	47	25	3.8	32
Zinc	20	21	2000	7000	2100	58	3300

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, *detection limit is* estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T5-E1**	**CBS-CSB-T5-W1**	**CBS-CSB-T6-C1**	**CBS-CSB-T6-C1-D**	**CBS-CSB-T6-E1**	**CBS-CSB-T6-W1**	**CBS-CSB-T7-C1**
Sample date	**11/1/01**	**11/1/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Aluminum	12000	7300	15000	16000	9400	10000	5800
Antimony	2.4 UJ	2.5 UJ	2.8 UJ	2.8 UJ	2.1 UJ	4.8 UJ	2.3 UJ
Arsenic	6.4	4.5	10	12	8.7	3.9	4.4
Barium	270	350	280	310	260	390	180
Beryllium	0.59	0.58	0.93	0.66	0.42	0.68	0.39
Cadmium	6.1	0.23	11	14	4.4	5.1	0.31
Calcium	3900	12000	5300	5500	3800	5100	11000
Chromium	39 J	13 J	66 J	140 J	82 J	38 J	10 J
Cobalt	8.5	11	6.1	5.1	15	6	7.4
Copper	250 J	14 J	100	120	570	38	14
Cyanide	0.66 U	0.55 U	0.68 U	0.69 U	0.58 U	0.66 U	0.66 U
Iron	15000 J	13000 J	17000	17000	12000	22000	16000
Lead	52	9.6	54 J	95 J	67 J	64 J	7.4 J
Magnesium	2900 J	6400 J	3300 J	3200 J	2400 J	3400 J	5500 J
Manganese	130 J	160 J	120	95	200	94	190
Mercury	0.049 J	0.024 J	0.2 J	0.21 J	0.15 J	0.055 J	0.022 J
Molybdenum	0.71 U	0.8 U	0.83	0.54	0.79	0.43	0.87
Nickel	250	32	180	190	220	22	16
Potassium	1800 J	2400 J	2100	2100	1600	1900	1900
Selenium	1.2 UJ	1.2 UJ	1.4 UJ	1.1 UJ	0.86 UJ	2.1 UJ	0.9 UJ
Silver	1.2 U	1.2 U	1.4 U	1.4 U	0.23	1.2 U	1.1 U
Sodium	140	230	160	170	130	210	200
Thallium	1.2 U	1.2 U	0.99 U	0.87 U	0.71 U	1.2 U	1.1 U
Tin	6 U	6.2 U	6.9 U	6.9 U	5.3 U	5.6	5.6 U
Vanadium	26	24	42	39	23	29	18
Zinc	2200	390	2100	2400	1500	2600	210

Notes:
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U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T7-E1	CBS-CSB-T7-W1	CBS-CSB-T8-C1	CBS-CSB-T8-E1	CBS-CSB-T8-W1	CBS-CSB-T9-C1	CBS-CSB-T9-E1
Sample date	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01	11/8/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Aluminum	14000	4400	4200	17000	9600	7400	11000
Antimony	4.8 UJ	2.6 UJ	12 UJ	5.2 UJ	2.3 UJ	2.7 UJ	2.4 UJ
Arsenic	8.8	5.1	3.3	18	16	5	5.1
Barium	220	180	99	360	260	160	260
Beryllium	0.84	0.19	0 32	0.75	0.42	0.47	0.59
Cadmium	22	3.1	0.58 U	29	4.4	0.25	10
Calcium	5100	2000	9900	5100	3400	10000	3500
Chromium	44 J	83 J	7.6 J	76 J	44 J	13 J	180 J
Cobalt	8.4	4.7	5.9	5.5	5.5	11	4.3
Copper	140	500	6.2	470	910	15	230
Cyanide	0.66 U	0.63 U	0.68 U	0.7 U	0.66 U	0.68 U	0.66 U
Iron	16000	5900	8700	21000	12000	16000	10000
Lead	55 J	55 J	5.5 J	84 J	43 J	9.3 J	76 J
Magnesium	3600 J	1400 J	6300 J	3500 J	2700 J	6200 J	2300 J
Manganese	130	59	63	99	80	170	70
Mercury	0.094 J	0.12 J	0.013 J	0.073 J	0.15 J	0.026 J	0.077 J
Molybdenum	0.85	0.28	0.54	0.96	0.54	0.83	0.34
Nickel	190	110	26	210	180	23	200
Potassium	1900	1200	1000	2200	1700	2100	1600
Selenium	1.4 UJ	1.3 UJ	5.8 UJ	2.6 UJ	1.1 UJ	0.94 UJ	1 UJ
Silver	1.2 U	1.3 U	1.2 U	1.3 U	0.24	1.4 U	1.2 U
Sodium	210	130	190	190	160	210	160
Thallium	1.2 U	1.3 U	1.2 U	1.1 U	1.1 U	1.4 U	1.2 U
Tin	6.1 U	6.4 U	5.8 U	6.2	5.6 U	6.8 U	6 U
Vanadium	32	13	12	42	28	22	27
Zinc	2900	710	5400	3400	1000	300	1900

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T9-W1	CBS-CSB-T10-C1	CBS-CSB-T10-E1	CBS-CSB-T10-W1	CBS-CSB-T11-C1	CBS-CSB-T11-C1-D	CBS-CSB-T11-E1
Sample date	11/8/01	11/8/01	11/8/01	11/8/01	11/19/01	11/19/01	11/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Aluminum	9900	7300	5800	9700	7000	6700	11000
Antimony	2.4 UJ	2.6 UJ	2.5 UJ	2.7 UJ	13 UJ	12 UJ	2.2 UJ
Arsenic	7.3	5.5	13	15	9.9	9.8	8.8
Barium	220	270	340	270	310	280	340
Beryllium	0.46	0.46	0.26	0.65	0.59 U	0.56 U	0.47 U
Cadmium	4.9	1.1	16	8.8	57	51	9.5
Calcium	3800	17000	3400	3700	7000	9200	3600
Chromium	52 J	13 J	130 J	27 J	14	14	89
Cobalt	13	7.2	3	16	13	16	4.9
Copper	500	150	440	410	340	230	230
Cyanide	0.64 U	0.71 U	0.68 U	0.68 U	0.68 U	0.68 U	0.6 U
Iron	12000	16000	10000	13000	11000	11000	11000
Lead	53 J	22 J	80 J	27 J	30	26	57
Magnesium	2700 J	6500 J	1200 J	2900 J	5100	6400	2200
Manganese	130	280	39	170	85	110	76
Mercury	0.29 J	0.024 J	0.16 J	0.084 J	0.035 J	0.8 J	0.12 J
Molybdenum	0.75	1.2	0.96	0.9	1	1.7	0.67 U
Nickel	230	28	140	280	450	560	190
Potassium	1700	1800	1400	1700	1500	1500	1500
Selenium	0.58 UJ	0.64 UJ	1 UJ	0.8 UJ	5.9	6.2 U	1.1 U
Silver	1.2 U	1.3 U	1.2 U	1.4 U	0.28	0.42	1.1 U
Sodium	130	200	180	170	180	180	150
Thallium	1.2 U	0.84 U	1.2 U	0.91 U	1.5 U	1.2 U	0.88 U
Tin	5.9 U	6.5 U	6.1 U	6.8 U	6.4 U	6.2 U	5.5 U
Vanadium	24	23	21	33	22	22	30
Zinc	1500	320	1900	1700	11000	9900	2100

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T11-W1	CBS-CSB-T12-C1	CBS-CSB-T12-E1	CBS-CSB-T12-W1	CBS-CSB-T13-C1	CBS-CSB-T13-E1	CBS-CSB-T13-W1
Sample date	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Aluminum	7500	6700	8000	11000	8200	8600	7900
Antimony	2.3 UJ	14 UJ	0.9 UJ	2.2 UJ	2.5 UJ	2.1 UJ	2.7 UJ
Arsenic	15	27	4.4	6.8	6.4	7.4	8.7
Barium	170	470	360	220	230	200	270
Beryllium	0.49 U	0.46 U	0.37 U	0.81	0.65 U	0.58 U	0.58 U
Cadmium	4	42	3.3	4.4	2.8	4.6	3.9
Calcium	2900	5700	2600	3800	14000	3100	3500
Chromium	58	140	48	80	13	21	74
Cobalt	7.2	11	4.9	7.9	9.7	6.4	8.1
Copper	560	89	280	620	30	170	240
Cyanide	0.63 U	1.1	0.58 U	0.64 U	0.67 U	0.59 U	0.67 U
Iron	10000	15000	9000	15000	21000	11000	12000
Lead	48	190	80	29	19	21	63
Magnesium	2200	2700	1600	3400	6900	2500	2900
Manganese	81	140	54	80	530	76	94
Mercury	0.12 J	0.84 J	0.14 J	0.1 J	0.031 J	0.061 J	0.096 J
Molybdenum	0.49 U	1.5	0.64 U	0.34 U	0.71 U	0.56 U	0.64 U
Nickel	250	630	330	400	29	340	240
Potassium	1500	1700	1200	1900	1800	1300	1700
Selenium	1.2 U	6.8 U	1.2 U	0.7	1.3 U	1.1 U	1.4 U
Silver	1.2 U	0.33	1.2 U	1.1 U	1.3 U	1.1 U	1.4 U
Sodium	130	170	110	130	190	110	140
Thallium	1.2 U	1 U	0.73 U	0.78 U	2.1 U	1.1 U	0.92 U
Tin	5.8 U	7.4	5.2	5.5 U	6.3 U	5.3 U	6.8 U
Vanadium	20	25	24	23	24	26	24
Zinc	1300	6600	1500	2100	660	1700	1900

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	B	B	B
Sample	CBS-CSB-T14-1	CBS-CSB-T15-1	CBS-CSB-T16-1	CBS-CSB-T17-C1	CBS-CSB-T17-E1	CBS-CSB-T17-E1D	CBS-CSB-T17-WI
Sample date	12/20/01	12/20/01	12/20/01	11/9/01	11/9/01	11/9/01	11/9/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Aluminum	10000	6300	7400	14000	13000	9900	8400
Antimony	2.8 U	2.2 U	0.71	2.9 UJ	5.8 UJ	4.6 UJ	2.6 UJ
Arsenic	5.3	7.4	11	16	14	14	5.2
Barium	230	260	350	230	330	360	200
Beryllium	0.77	0.51	0.52	0.82 J	0.86 J	0.58 J	0.54 J
Cadmium	2.8	5.2	2.8	0.68 J	8.1	16	0.4 J
Calcium	8200	5600	6600	6300	7200	7100	9900
Chromium	17	43	27	19	56	55	14
Cobalt	11	5.6	9.3	14	11	9.6	6.9
Copper	33	370	1500	29	470	750	17
Cyanide	0.76 U	0.66 U	0.72 U	0.79 U	0.7 U	0.69 U	0.7 U
Iron	16000	11000	13000	18000	18000	19000	16000
Lead	15	71	100	27	96	150	10
Magnesium	6000	3200	3600	3900	4600	3800	6400
Manganese	130	110	99	120	150	160	170
Mercury	0.032 J	0.064 J	0.12 J	0.072 J	0.2 J	0.34 J	0.028 J
Molybdenum	1.4 UJ	0.5 J	0.97 U	2.1	1.1	1.1	1.2
Nickel	130	180	170	89 J	200 J	300 J	17 J
Potassium	2100	1300	1500	2400	2300	1700	1800
Selenium	1.4 U	1.1 U	1.2 U	1 UJ	2.9 UJ	2.3 UJ	1.3 UJ
Silver	1.4 U	1.1 U	1.3	1.5 U	0.3	0.62	1.3 U
Sodium	270	180	300	150	150	140	160
Thallium	1.4 U	1.9 U	1.4 U	1.5 U	1.4 U	1.2 U	1.3 U
Tin	7 U	5.5 U	7.3	7.3 U	8.8	13	6.4 U
Vanadium	29	19	22	36	36	28	24
Zinc	2700	1200	3800	1300 J	3200 J	3000 J	120 J

Notes:
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UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	B	B	B	B	C	C	C
Sample	CBS-CSB-T18-C1	CBS-CSB-T18-E1	CBS-CSB-T18-W1	CBS-CSB-T18-W1D	CBS-CSC-T1-1	CBS-CSC-T2-1	CBS-CSC-T3-1
Sample date	11/9/01	11/9/01	11/9/01	11/9/01	12/13/01	12/13/01	12/13/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Aluminum	8500	13000	12000	20000	10000	9200	13000
Antimony	2.5 UJ	2.3 UJ	2.5 UJ	2.7 UJ	2.5 U	2.6 U	5.6 U
Arsenic	4.1	11	10	9.8	14	13	14
Barium	190	270	220	310	250	220	250
Beryllium	0.54 J	0.8 J	0.81 J	1 J	0.8	0.68	0.74
Cadmium	0.38 J	11	12	14	14 J	11 J	18 J
Calcium	14000	2200	3700	4900	10000	5500	6100
Chromium	14	26	99	77	27	110	21
Cobalt	8.4	6.8	5.7	7.5	8.9	7.4	14
Copper	17	49	37	60	81 J	160 J	120 J
Cyanide	0.68 U	0.69 U	0.68 U	0.67 U	0.67 U	0.71 U	0.74 U
Iron	19000	12000	14000	19000	19000	15000	20000
Lead	11	26	30	59	22	65	28
Magnesium	6900	2800	3000	4000	5100	3200	3800
Manganese	370	75	83	110	200	160	200
Mercury	0.029 J	0.029 J	0.051 J	0.055 J	0.046 J	0.06 J	0.048 J
Molybdenum	0.85 U	1.3	0.76 U	0.75 U	1.3 U	1 U	1.5 U
Nickel	28 J	210 J	65 J	94 J	200 J	260 J	570
Potassium	1700	1800	1900	2500	1800	1700	2100
Selenium	0.65 UJ	1.1 UJ	0.87 UJ	1.7 UJ	0.9 U	1.8 U	2.8 U
Silver	1.2 U	1.2 U	1.2 U	1.4 U	1.2 U	1.3 U	1.4 U
Sodium	150	140	120	140	120	110	110
Thallium	0.81 UJ	1.2 U	1.2 U	0.99 UJ	1.2 U	1.3 U	1.4 U
Tin	6.1 U	5.8 U	6.2 U	6.8 U	6.2 U	6.5 U	7 U
Vanadium	25	33	34	40	30	27	37
Zinc	300 J	1900 J	1800 J	2500 J	1800 J	1900 J	3200 J

Notes:
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U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**C**	**C**	**C**	**C**	**C**	**C**	**C**
Sample	**CBS-CSC-T4-1**	**CBS-CSC-T4-1-FD**	**CBS-CSC-T5-1**	**CBS-CSC-T6-1**	**CBS-CSC-T7-1**	**CBS-CSC-T8-1**	**CBS-CSC-T9-1**
Sample date	**12/13/01**	**12/13/01**	**12/13/01**	**12/13/01**	**12/13/01**	**12/13/01**	**12/13/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Aluminum	11000	11000	13000	11000	11000	11000	8100
Antimony	2.5 U	2.8 U	0.79	5.3 U	5.9 U	3 U	2.7 U
Arsenic	4.7	9.5	3	12	7	11	6.2
Barium	260	230	240	330	270	240	200
Beryllium	0.78	0.82	0.94	0.79	0.92	0.82	0.96
Cadmium	1.5 J	8.4 J	1.6 J	14 J	24 J	17 J	15 J
Calcium	13000	8500	14000	7700	6100	6500	3600
Chromium	18	30	20	42	22	41	18
Cobalt	9.4	9.4	9.6	9.1	12	9.3	5
Copper	50 J	200 J	40 J	250 J	53 J	100 J	53 J
Cyanide	0.72 U	0.76 U	0.77 U	0.76 U	0.71 U	0.74 U	0.64 U
Iron	18000	17000	21000	20000	17000	17000	12000
Lead	17	45	18	140	32	33	20
Magnesium	6600	4700	6700	4000	4400	4200	2800
Manganese	320	220	390	140	140	120	79
Mercury	0.073 J	0.13 J	0.074 J	0.31 J	0.094 J	0.05 J	0.077 J
Molybdenum	0.78 U	1.2 U	1.1 U	1.4 U	1.6 U	1.6 U	1.5 U
Nickel	55 J	200 J	60 J	170	400	330	250 J
Potassium	1900	1800	2300	1800	2000	1900	1400
Selenium	0.76 U	0.87 U	0.97 U	2 U	2.2 U	1.1 U	0.78 U
Silver	1.2 U	1.4 U	1.6 U	1.3 U	1.5 U	1.5 U	1.4 U
Sodium	170	140	200	120	100	110	90
Thallium	1.1 U	1.4 U	1.2 U	0.78 U	1.5 U	0.87 U	1.4 U
Tin	6.2 U	6.9 U	7.8 U	7.5	7.4 U	7.5 U	6.8 U
Vanadium	28	28	34	32	36 J	32	23
Zinc	280 J	1500 J	340 J	3000 J	3400 J	2700 J	2000 J

Notes:
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UJ - Nondetected, detection limit is estimated.
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Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**D**	**D**	**D**	**D**	**D**	**D**	**E**
Sample	**CBS-CSD-T1-1**	**CBS-CSD-T2-1**	**CBS-CSD-T3-1**	**CBS-CSD-T4-1**	**CBS-CSD-T5-1**	**CBS-CSD-T6-1**	**CBS-CSE-T1-1**
Sample date	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/18/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Aluminum	9300	8300	12000	14000	12000	9800	9800
Antimony	12 U	14 U	2.9 U	6 U	2.7 U	5.3 U	2.7 UJ
Arsenic	11	18	8.7	15	5.7	10	8.8
Barium	240	320	250	290	200	570	230
Beryllium	0.89	0.65	0.94	0.99	0.66	0.9	0.78
Cadmium	14 J	40 J	15 J	28 J	8.5 J	13 J	13 J
Calcium	5900	5500	5600	5200	4000	25000	6600
Chromium	44	55	57	46	41	53	57 J
Cobalt	12	11	11	9.2	6	7.6	6.9
Copper	79 J	130 J	84 J	230 J	190 J	1600 J	380 J
Cyanide	0.72 UJ	0.74 UJ	0.71 UJ	0.72 UJ	0.67 UJ	0.7 UJ	0.72 U
Iron	16000	18000	17000	20000	14000	18000	17000
Lead	39	150	36	61	23	280	58 J
Magnesium	3300	3700	4100	3600	2900	5000	3800
Manganese	110	100	190	150	110	160	120
Mercury	0.14 J	0.11 J	0.07 J	0.71 J	0.065 J	0.33 J	0.11 J
Molybdenum	1.1 U	4.7	1 U	1.5 U	0.96 U	7	0.55 U
Nickel	90	180 J	250	410 J	260 J	530 J	260
Potassium	1600	1700	2100	2100	1600	1700	1900 J
Selenium	2.8	6.9 U	1 U	3 U	1.4 U	1.7 U	0.71 U
Silver	1.2 U	1.4 U	1.4 U	1.5 U	1.4 U	1.5	1.4 U
Sodium	120	120	160	180	140	330	310
Thallium	0.94 U	0.85 U	1.1 U	1.5 U	1.4 U	1.3 U	1.7 U
Tin	6.2 U	6.6	7.1 U	7.5 U	6.8 U	11	6.8 U
Vanadium	32	26	34	36	33	28	29
Zinc	6400 J	8200 J	2000 J	3100 J	1800 J	3100 J	2900

Notes:
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UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**E**	**E**	**E**	**E**	**E**	**E**	**E**
Sample	**CBS-CSE-T2-1**	**CBS-CSE-T3-1**	**CBS-CSE-T3-1-FD**	**CBS-CSE-T4-1**	**CBS-CSE-T5-1**	**CBS-CSE-T6-1**	**CBS-CSE-T7-1**
Sample date	**12/18/01**	**12/18/01**	**12/18/01**	**12/18/01**	**12/18/01**	**12/18/01**	**12/19/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Aluminum	7000	11000	9200	8700	5500	11000	12000
Antimony	0.75 J	2.7 UJ	2.3 UJ	2.5 UJ	2.4 UJ	2.6 UJ	2.9 UJ
Arsenic	8.5	14	12	7.4	2.8	7.1	7.1
Barium	170	220	190	220	200	240	220
Beryllium	0.39	0.73	0.67	0.8	0.31	0.84	0.89
Cadmium	11 J	21 J	18 J	16 J	10 J	22 J	33 J
Calcium	3500	4800	4200	5300	3300	6900	7100 J
Chromium	120 J	120 J	100 J	29 J	170 J	60 J	19
Cobalt	3.2	6.8	5.9	6.6	4.3	8.1	8.7
Copper	480 J	92 J	90 J	240 J	64	170 J	510
Cyanide	0.64 U	0.73 U	0.68 U	0.68 U	0.63 U	0.74 U	2.6
Iron	8700	16000	13000	14000	7500	19000	19000
Lead	130 J	52 J	57 J	39 J	89 J	50 J	29 J
Magnesium	1500	3200	2700	3300	1900	4400	3900
Manganese	61	130	100	110	95	140	150
Mercury	0.25 J	0.076 J	0.11 J	0.083 J	0.094 J	0.25 J	0.12
Molybdenum	0.35 U	0.58 U	0.39 U	0.39 U	1.2 U	1.3 U	0.54 UJ
Nickel	190	220	180	220	120	170	310 J
Potassium	1300 J	1900 J	1700 J	1600 J	1400 J	2200 J	2400 J
Selenium	0.83 U	1.3 U	1.2 U	1.3 U	1.2 U	1.3 U	1.4 U
Silver	1.4 U	1.3 U	1.2 U	1.3 U	1.2 U	1.3 U	1.4 U
Sodium	190	250	210	290	190	240	250
Thallium	1.2 U	0.91 U	1 U	1.6 U	1.4 U	1.2 U	1.2 U
Tin	6.8 U	6.7 U	5.9 U	6.3 U	5.9 U	6.5 U	7.2 U
Vanadium	18	32	30	27	18	31	35
Zinc	1300	2300	2000	2600	1600	2600	2900

Notes:
J - Detected, estimated.
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UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	E	E	E	E	E	E	E
Sample	CBS-CSE-T8-1	CBS-CSE-T9-1	CBS-CSE-T10-1	CBS-CSE-T11-1	CBS-CSE-T12-1	CBS-CSE-T13-2	CBS-CSE-T14-1
Sample date	12/19/01	12/19/01	12/19/01	12/19/01	12/19/01	2/14/02	12/18/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Aluminum	11000	11000	7300	11000	14000	10000	12000
Antimony	2.6 UJ	2.7 UJ	0.98 J	2.9 UJ	2.8 UJ	1 U	2.7 UJ
Arsenic	3.4 U	7.1	9.4	6.9	5.5	5.6	6.8
Barium	240	240	280	250	260	220	250
Beryllium	0.77	0.81	0.55	0.81	1.1	0.79	0.92
Cadmium	3.7 J	16 J	15 J	4.6 J	12 J	3.1	5.6 J
Calcium	13000 J	5900 J	12000 J	12000 J	8500 J	12000	7300
Chromium	18	18	19	19	21	18	19 J
Cobalt	8.3	8.9	7.8	9	11	8.2	13
Copper	25	39	300	88	33	94	40 J
Cyanide	0.79 U	0.75 U	0.69 U	0.72 U	0.8 U	0.75 U	0.77 U
Iron	18000	22000	16000	21000	24000	20000	20000
Lead	17 J	26 J	170 J	33 J	28 J	44	25 J
Magnesium	6900	4200	5600	6100	5300	6500	5300
Manganese	260	150	200	240	210	210	170
Mercury	0.34	0.6	0.6	0.46	0.69	0.84	0.28 J
Molybdenum	0.29 UJ	0.7 UJ	0.37 UJ	0.46 UJ	0.21 UJ	1.3 U	0.23 U
Nickel	44 J	160 J	170 J	67 J	120 J	52	140
Potassium	2300 J	2500 J	1700 J	2400 J	2900 J	2200	2600 J
Selenium	1.3 U	1.4 U	1.4 U	1.5 U	1.4 U	1.4 U	1.3 U
Silver	1.3 U	1.4 U	0.61	1.5 U	1.4 U	1.4 UJ	1.3 U
Sodium	190	220	280	240	280	160	200
Thallium	1.3 U	1.4 U	1.4 U	1.5 U	1.1 U	0.88	1.8 U
Tin	6.6 U	6.8 U	6.7	7.4 U	7 U	6.8 U	6.7 U
Vanadium	30	32	25	31	37	31	34
Zinc	490	1900	2500	690	1300	320	830

Notes:
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U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**E**	**E**	**E**	**E**	**F**	**F**	**F**
Sample	**CBS-CSE-T15-1**	**CBS-CSE-T15-1-FD**	**CBS-CSE-T16-1**	**CBS-CSE-T17-1**	**CBS-CSF-T1-1**	**CBS-CSF-T2-1**	**CBS-CSF-T3-1**
Sample date	**12/18/01**	**12/18/01**	**12/21/01**	**12/21/01**	**12/21/01**	**12/11/01**	**12/11/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:							
Aluminum	7300	6800	12000 J	10000	9500	11000	12000
Antimony	2.5 UJ	2.3 UJ	4.7 J	3.2 U	3 U	2.7 UJ	2.8 UJ
Arsenic	6.5	6.9	20 J	13	8.6	13	9
Barium	160	140	640 J	270	270	330	290
Beryllium	0.57	0.52	0.91 J	0.74	0.65	0.82	0.89
Cadmium	2.7 J	3.6 J	38 J	16	0.77	4.4	3.2
Calcium	6800	6400	8800 J	13000	17000	15000 J	16000 J
Chromium	14 J	14 J	56 J	37	16	19	23
Cobalt	7.1	5.9	9.5 J	11	9.4	12	9.4
Copper	24 J	25 J	4300 J	350	73	45	27
Cyanide	0.65 U	0.63 U	1 UJ	0.88 U	1.2	0.71 U	0.76 U
Iron	14000	15000	27000 J	20000	19000	26000	24000
Lead	24 J	20 J	400 J	120	21	29	24
Magnesium	3900	3600	4600 J	6600	8200	6900	6500
Manganese	180	220	210 J	300	410	550	460
Mercury	0.25 J	0.19 J	1.6 J	0.27 J	0.12 J	0.074	0.63
Molybdenum	1.3 U	0.22 U	1.5 J	0.46 J	0.37 J	1.3 U	1.2 U
Nickel	56	61	600 J	200	93	95	36
Potassium	1700 J	1500 J	2300 J	2100	2300	2300	2300
Selenium	1.3 U	1.2 U	2 UJ	1.6 U	1.5 U	1.5 U	0.82 U
Silver	1.3 U	1.2 U	9.8 J	0.64	1.5 U	1.3 U	1.4 U
Sodium	170	170	390 J	270	290	220	170 U
Thallium	1.1 U	1.3 U	1.3 U	0.93 U	1.5 U	1.7 U	1.6 U
Tin	6.3 U	5.8 U	31 J	11	7.6 U	3 U	2.9 U
Vanadium	23	21	39 J	31	25	31	34
Zinc	560	690	5900 J	2100	530	1100 J	1200 J

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F	F	F
Sample	CBS-CSF-T4-1	CBS-CSF-T5-1	CBS-CSF-T6-1	CBS-CSF-T6-1-FD	CBS-CSF-T7-1	CBS-CSF-T8-1	CBS-CSF-T9-1
Sample date	12/11/01	1/8/02	1/16/02	1/16/02	1/16/02	1/23/02	1/23/02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Aluminum	11000	6400	13000	11000	9100	8900	12000
Antimony	2.5 UJ	25 UJ	5.4 UJ	2.6 UJ	2.8 UJ	2.5 UJ	3 UJ
Arsenic	7.9	19	7.5 J	11	8.6	11	12
Barium	260	270	290	200	200	160	190
Beryllium	0.78	0.49 U	0.89	0.71	0.66	0.65	0.77
Cadmium	2.8	57 J	70	27	25	20	14
Calcium	14000 J	10000	8300	8900	7700	5900	6000
Chromium	21	29	39	16	14	14	19
Cobalt	8.4	13	16	9.5	8.8	8	9
Copper	24	190 J	280	84	80	99 J	120 J
Cyanide	0.66 U	0.67 U	0.74 J	8.4 J	0.67 UJ	0.68 U	0.72 U
Iron	21000	41000	21000	20000	16000	18000	19000
Lead	21	450 J	45	29	27	28	53
Magnesium	5800	4500	5900	6000	5200	4200	4100
Manganese	400	890 J	290	320	210	200 J	350 J
Mercury	0.038	0.82 J	0.14 J	0.095 J	0.086 J	0.09	0.32
Molybdenum	1 U	2.2	0.9 UJ	0.95 UJ	1.2 UJ	1.4 U	0.98 U
Nickel	32	630 J	250	210	160	150	110
Potassium	2000	1300 J	2300 J	1800 J	1400 J	1500	1900
Selenium	1.1 U	9.3 U	2.4 UJ	1.3 UJ	1.2 UJ	1.2 U	1.4 U
Silver	1.2 U	0.79	1.4 U	1.3 U	1.4 U	1.2 U	1.5 U
Sodium	150	130	160	140	120	120	130
Thallium	1.6 U	3.2 U	1.2 U	1.6 U	1.4 U	1.1 UJ	1.5 UJ
Tin	1.9 U	17	6.8 U	6.5 U	6.9 U	6.2 U	7.5 U
Vanadium	30	26	30	30	25	26	30
Zinc	1100 J	15000	3200	2500	1600	1500	1400

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	F	F	F	F	F
Sample	CBS-CSF-T9-1-FD	CBS-CSF-T10-1	CBS-CSF-T11-1	CBS-CSF-T12-1	CBS-CSF-T13-1	CBS-CSF-T14-1	CBS-CSF-T15-1
Sample date	1/23/02	1/25/02	1/25/02	1/23/02	1/16/02	1/8/02	1/8/02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Aluminum	9700	5100	10000	8100	5900	8500	9900
Antimony	0.62 J	2.4 UJ	2.5 UJ	2.7 UJ	2.4 UJ	0.66 J	2.9 UJ
Arsenic	10	8.2	9.7	12	4.1	14	9.7
Barium	160	160	200	240	170	200	180
Beryllium	0.65	0.47	0.72	0.56	0.38	0.65 U	0.85 U
Cadmium	11	23	35	38	6.9	28 J	27 J
Calcium	4900	8400	7300	6400	14000	6100	5700
Chromium	16	9.7	16	13	9.3	16	17
Cobalt	7.1	6.1	10	7.9	5.6	9	8.5
Copper	110 J	180 J	110 J	92 J	23	150 J	260 J
Cyanide	0.64 U	0.63 U	0.67 U	0.66 U	0.66 UJ	0.65 U	0.71 U
Iron	17000	13000	18000	16000	11000	21000	18000
Lead	50	41	23	18	7.5	100 J	61 J
Magnesium	3300	5300	5200	4400	6100	4200	4100
Manganese	260 J	170 J	240 J	190 J	180	350 J	330 J
Mercury	0.29	0.11	0.093	0.031	0.018 J	0.32 J	0.16 J
Molybdenum	0.85 U	0.87 U	0.79 U	1.4 U	0.8 UJ	0.95 U	0.62 U
Nickel	100	94	300	270	68	230 J	210 J
Potassium	1500	1000	1700	1300	1100 J	1400 J	1500 J
Selenium	1.3 U	1 U	1.8	1.4 U	0.76 U	0.99 U	1.4 U
Silver	1.2 U	1.2 U	1.3 U	1.4 U	1.2 U	1.2 U	1.4 U
Sodium	99	120	110	110	140	110	100
Thallium	0.89 UJ	0.73 UJ	1.1 UJ	1.4 UJ	1.2 U	0.99 U	1.5 U
Tin	6 U	5.9 U	6.3 U	6.8 U	6.1 U	6.1 U	7.1 U
Vanadium	26	19	29	27	17	25	25
Zinc	1200	1200	2400	2400	400	1700	2000

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	F	F	SITE M	SITE M	SITE M	SITE M	SITE M
Sample	CBS-CSF-T15-1-FD	CBS-CSF-T16-1	SED-M-S2 0-6	SED-M-S3-(0-6)	SED-M-S4-(0-6)	SED-M-S5 0-6	SED-M-S6-(0-6)
Sample date	1/8/02	2/6/02	6/22/01	7/10/01	8/1/01	6/22/01	7/10/01
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
Aluminum	5000	6000	3800	2600	7500 J	3200	2100
Antimony	2.4 UJ	1.2 U	2.7 UJ	3.4	2.6 UJ	2.5 UJ	0.59
Arsenic	4.6	5.8 U	3.2	2.9	9.3	4.6	3.4
Barium	160	160	190 J	250	380 J	130 J	68
Beryllium	1.2	0.57 U	0.28	0.2	0.55	0.25	0.17
Cadmium	12 J	0.71 U	2.3 J	3.8	2.5 J	4.8 J	0.68
Calcium	5500	9400	10000	4500	16000 J	4000	3800
Chromium	8.9	11	12 J	9.4	17 J	16 J	8
Cobalt	4.9	6.3	4.8	5	8.5	4.2	4.3
Copper	750 J	20	230	610 J	600 J	770	110 J
Cyanide	0.63 U	0.68 U	1.3 U	1.3 UJ	1.3 U	1.2 U	1.2 UJ
Iron	9900	13000	7700	6700	15000 J	8000	6600
Lead	13 J	15	19	99	63 J	27	19
Magnesium	3900	4200	4000 J	2100 J	6500	2500 J	2200 J
Manganese	85 J	290	86 J	69	360 J	73 J	63
Mercury	0.17 J	0.04 J	0.026 J	0.061	0.22	0.062 J	0.05
Molybdenum	0.38 U	0.5 U	0.45 U	0.23	1 U	0.74 U	0.34
Nickel	130 J	15	150	500	120 J	260	110
Potassium	890 J	940	850 J	570	1500 J	680 J	450
Selenium	0.61 U	1.4 UJ	1.4 U	1.2 UJ	0.85 U	1.3 U	1.2 UJ
Silver	1.2 U	1.4 UJ	1.4 U	0.88	0.47	0.37	1.2 U
Sodium	92	140	86	260	130	63 U	100
Thallium	1.2 U	1.4 U	1.4 UJ	1.2 UJ	1.3 U	1.3 UJ	1.2 UJ
Tin	6 U	7.1 U	6.8 U	5.8	5.9	6.2 U	5.8 U
Vanadium	14	19	11	9	23	9.1	9
Zinc	950	59	1400	4000	800 J	1200	310

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 2-6
Creek Bottom Soil Validated Data - Inorganics
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**SITE M**	**SITE M**	**SITE M**	**SITE M**	**SITE M**
Sample	**SED-M-S7-(0-6)**	**SED-M-S7-FD(0-6)**	**SED-M-S8 0-6**	**SED-M-S9-(0-6)**	**SED-M-S10 0-6**
Sample date	**8/1/01**	**8/1/01**	**6/22/01**	**7/10/01**	**6/22/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte:					
Aluminum	4300 J	4200 J	4900	2100	4400
Antimony	11 J	2.6 J	3 J	1	15 UJ
Arsenic	30	20	5	4.4	7.7
Barium	870 J	450 J	410 J	170	1800 J
Beryllium	0.34	0.37	0.36	0.16	0.32
Cadmium	21 J	13 J	2.2 J	1.2	9.8 J
Calcium	9000 J	9000	7200	3400	10000
Chromium	73 J	37 J	19 J	7.2	23 J
Cobalt	30	17 J	5.7	3.2	15
Copper	5200 J	2900 J	920	750 J	4900
Cyanide	0.9	1.3 U	1.5 U	1.2 UJ	0.99
Iron	17000 J	15000 J	10000	6300	18000
Lead	250 J	180 J	82	37	270
Magnesium	2700	2900	3600 J	1800 J	4000 J
Manganese	130 J	130 J	95 J	71	150 J
Mercury	0.25	0.33	0.092 J	0.031	0.3 J
Molybdenum	3.8	2.5	0.59 U	1.2 U	1.1 U
Nickel	1700 J	840 J	300	110	1500
Potassium	810 J	800 J	1100 J	430	930 J
Selenium	2.7 U	1.7 U	1.3 U	1.2 UJ	7.6 U
Silver	3.1	1.7	3.5	0.47	5.6
Sodium	140	95	89	130	150
Thallium	1.3 U	1.3 U	1.5 UJ	1.2 UJ	1.5 UJ
Tin	21	19	7.5 U	6.2 U	18
Vanadium	17	19	15	8.7	16
Zinc	6400 J	3300 J	2500	740	12000

Notes:
J - Detected, estimated.
U - Nondetected.
UJ - Nondetected, detection limit is estimated.
R - Rejected.

Table 7

Table 2 - 7

Creek Bottom Soil Total Concentration Data

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T0-C1**	**CBS-CSB-T1-C1**	**CBS-CSB-T1-E1**	**CBS-CSB-T1-W1**	**CBS-CSB-T2-C1**	**CBS-CSB-T2-E1**	**CBS-CSB-T2-W1**	**CBS-CSB-T3-C1**
Sample date	**11/1/01**	**10/31/01**	**10/31/01**	**10/31/01**	**10/31/01**	**10/31/01**	**10/31/01**	**10/31/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:								
Industry Specific Metals								
Copper	10000	23	130	310	150	2000	17	390
Lead	700	48	36	44	130	260	12	75
Nickel	600	21	500	420	190	260	54	23
Zinc	6800	220	2600	2700	2300	1200	490	20
Total Organics (a)								
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.0045127	0.00000318	0.00004433	0.00013355	0.000000167	0.0000374	0.000000038	0.00038228
Total Polychlorinated biphenyls (PCBs)	29.73	0.0452	1.6532	1.2198	0.0021	0.2487	ND	6.38
Total Pesticides	0.88	0.00058	0.029	0.137	ND	0.0104	ND	ND
Total Herbicides	ND	0.0019	ND	ND	ND	ND	0.0017	ND
Total Semivolatile Organic Compounds (SVOCs)	46.303	0.071	0.015	0.387	ND	0.013	ND	170.042
Total Volatile Organic Compounds (VOCs)	18.88	0.9962	0.0035	0.0253	0.387	0.0118	0.0682	38.3178

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T3-E1**	**CBS-CSB-T3-W1**	**CBS-CSB-T4-C1**	**CBS-CSB-T4-E1**	**CBS-CSB-T4-W1**	**CBS-CSB-T5-C1**	**CBS-CSB-T5-E1**	**CBS-CSB-T5-W1**
Sample date	**10/31/01**	**10/31/01**	**11/1/01**	**11/1/01**	**11/1/01**	**11/1/01**	**11/1/01**	**11/1/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:								
Industry Specific Metals								
Copper	38	180	47	440	30	26	250	14
Lead	400	13	28	66	77	20	52	9.6
Nickel	1.9	130	190	280	130	180	250	32
Zinc	21	2000	7000	2100	58	3300	2200	390
Total Organics (a)								
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.0016277	0.000003102	0.000003768	0.00000895	0.000000024	0.000000091	0.00013359	0.000000023
Total Polychlorinated biphenyls (PCBs)	84.83	0.2324	0.0467	0.319	0.0061	0.1093	2.577	ND
Total Pesticides	ND	0.00124	0.0014	0.0032	ND	0.00034	0.146	0.00103
Total Herbicides	ND	0.0336	0.0292	ND	0.75	0.003	0.0219	ND
Total Semivolatile Organic Compounds (SVOCs)	210.833	0.126	0.658	0.335	2.39	ND	1.865	0.073
Total Volatile Organic Compounds (VOCs)	1.6409	0.0263	0.6047	0.1145	1.1013	0.6014	0.1101	1.6749

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T6-C1**	**CBS-CSB-T6-C1-D**	**CBS-CSB-T6-E1**	**CBS-CSB-T6-W1**	**CBS-CSB-T7-C1**	**CBS-CSB-T7-E1**	**CBS-CSB-T7-W1**
Sample date	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:							
Industry Specific Metals							
Copper	100	120	570	38	14	140	500
Lead	54	95	67	64	7.4	55	55
Nickel	180	190	220	22	16	190	110
Zinc	2100	2400	1500	2600	210	2900	710
Total Organics (a)							
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.00002062	0.00001666	0.000015829	0.000002049	0.000000383	0.000002024	0.00002159
Total Polychlorinated biphenyls (PCBs)	0.029	0.0209	0.7613	0.0018	0.0555	0.0066	0.1552
Total Pesticides	0.00041	0.0023	0.00355	0.00032	ND	0.00991	0.0256
Total Herbicides	ND	ND	6.1034	ND	0.0032	ND	4.6047
Total Semivolatile Organic Compounds (SVOCs)	0.0044	0.005	0.28	0.1343	0.061	0.0025	0.017
Total Volatile Organic Compounds (VOCs)	0.059	0.0363	0.019	0.55	0.256	0.0493	ND

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T8-C1**	**CBS-CSB-T8-E1**	**CBS-CSB-T8-W1**	**CBS-CSB-T9-C1**	**CBS-CSB-T9-E1**	**CBS-CSB-T9-W1**	**CBS-CSB-T10-C1**
Sample date	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**	**11/8/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:							
Industry Specific Metals							
Copper	6.2	470	910	15	230	500	150
Lead	5.5	84	43	9.3	76	53	22
Nickel	26	210	180	23	200	230	28
Zinc	5400	3400	1000	300	1900	1500	320
Total Organics (a)							
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.000000474	0.000003236	0.000012573	0.000000021	0.00000948	0.00001873	0.000002064
Total Polychlorinated biphenyls (PCBs)	0.3184	ND	0.0528	ND	0.0137	0.1272	0.0164
Total Pesticides	0.06827	0.00096	0.01745	0.00062	0.0053	0.02336	0.003
Total Herbicides	ND	ND	ND	0.0032	0.0017	2.4053	ND
Total Semivolatile Organic Compounds (SVOCs)	0.039	0.0021	0.0049	ND	0.0019	0.013	0.1239
Total Volatile Organic Compounds (VOCs)	0.1291	0.0947	0.025	0.5747	0.0505	0.031	0.635

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T10-E1**	**CBS-CSB-T10-W1**	**CBS-CSB-T11-C1**	**CBS-CSB-T11-C1-D**	**CBS-CSB-T11-E1**	**CBS-CSB-T11-W1**	**CBS-CSB-T12-C1**
Sample date	**11/8/01**	**11/8/01**	**11/19/01**	**11/19/01**	**11/19/01**	**11/19/01**	**11/19/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:							
Industry Specific Metals							
Copper	440	410	340	230	230	560	89
Lead	80	27	30	26	57	48	190
Nickel	140	280	450	560	190	250	630
Zinc	1900	1700	11000	9900	2100	1300	6600
Total Organics (a)							
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.0000591	0.0000385	0.00005292	0.00030577	0.00001232	0.00002816	0.000222532
Total Polychlorinated biphenyls (PCBs)	0.073	0.0608	0.5196	1.0525	0.0811	0.2992	0.0319
Total Pesticides	0.03175	0.0168	0.00133	0.00764	0.0016	0.00664	0.00041
Total Herbicides	ND	0.0021	0.0701	0.06	0.0036	0.0028	0.048
Total Semivolatile Organic Compounds (SVOCs)	0.0055	0.0073	0.056	0.026	0.009	0.031	8.4376
Total Volatile Organic Compounds (VOCs)	0.011	0.029	0.1593	0.233	0.0936	0.057	0.571

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T12-E1**	**CBS-CSB-T12-W1**	**CBS-CSB-T13-C1**	**CBS-CSB-T13-E1**	**CBS-CSB-T13-W1**	**CBS-CSB-T14-1**	**CBS-CSB-T15-1**
Sample date	**11/19/01**	**11/19/01**	**11/19/01**	**11/19/01**	**11/19/01**	**12/20/01**	**12/20/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:							
Industry Specific Metals							
Copper	280	620	30	170	240	33	370
Lead	80	29	19	21	63	15	71
Nickel	330	400	29	340	240	130	180
Zinc	1500	2100	660	1700	1900	2700	1200
Total Organics (a)							
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.0000223	0.00002298	0.00000134	0.000002466	0.000005003	0.00000343	0.00001601
Total Polychlorinated biphenyls (PCBs)	0.1294	0.1596	ND	0.0295	0.0388	ND	0.0961
Total Pesticides	0.002497	0.01008	0.00073	0.00055	0.00132	ND	0.01
Total Herbicides	0.0014	ND	0.0039	0.041	ND	ND	ND
Total Semivolatile Organic Compounds (SVOCs)	0.007	0.021	0.077	0.01	0.0037	0.0025	0.0056
Total Volatile Organic Compounds (VOCs)	0.0079	0.072	0.1765	0.013	0.23	0.1005	0.0178

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Sample	**CBS-CSB-T16-1**	**CBS-CSB-T17-C1**	**CBS-CSB-T17-E1**	**CBS-CSB-T17-E1D**	**CBS-CSB-T17-WI**	**CBS-CSB-T18-C1**	**CBS-CSB-T18-E1**
Sample date	**12/20/01**	**11/9/01**	**11/9/01**	**11/9/01**	**11/9/01**	**11/9/01**	**11/9/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:							
Industry Specific Metals							
Copper	1500	29	470	750	17	17	49
Lead	100	27	96	150	10	11	26
Nickel	170	89	200	300	17	28	210
Zinc	3800	1300	3200	3000	120	300	1900
Total Organics (a)							
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.0014388	0.000000084	0.0018318	0.00012043	0.000000051	0.000000554	0.000000214
Total Polychlorinated Biphenyls (PCBs)	0.12	ND	0.3581	1.2202	ND	ND	ND
Total Pesticides	0.18	ND	0.208	0.21	ND	ND	ND
Total Herbicides	0.017	ND	0.0019	0.0076	0.002	0.004	ND
Total Semivolatile Organic Compounds (SVOCs)	2.945	0.891	0.381	0.166	0.098	0.074	0.0597
Total Volatile Organic Compounds (VOCs)	0.1552	0.539	0.1734	0.3568	0.1518	2.9514	0.053

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**B**	**B**	**C**	**C**	**C**	**C**	**C**	**C**
Sample	**CBS-CSB-T18-W1**	**CBS-CSB-T18-W1D**	**CBS-CSC-T1-1**	**CBS-CSC-T2-1**	**CBS-CSC-T3-1**	**CBS-CSC-T4-1**	**CBS-CSC-T4-1-FD**	**CBS-CSC-T5-1**
Sample date	**11/9/01**	**11/9/01**	**12/13/01**	**12/13/01**	**12/13/01**	**12/13/01**	**12/13/01**	**12/13/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:								
Industry Specific Metals								
Copper	37	60	81	160	120	50	200	40
Lead	30	59	22	65	28	17	45	18
Nickel	65	94	200	260	570	55	200	60
Zinc	1800	2500	1800	1900	3200	280	1500	340
Total Organics (a)								
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.00000019	0.00000011	0.000000888	0.00001318	0.000000666	0.00006697	0.000001651	0.00000165
Total Polychlorinated biphenyls (PCBs)	ND	ND	0.0011	0.1782	0.0029	0.0093	0.0627	ND
Total Pesticides	ND	ND	0.0025	0.03609	0.0012	0.00457	0.00911	0.00046
Total Herbicides	ND	ND	0.0062	ND	ND	ND	ND	ND
Total Semivolatile Organic Compounds (SVOCs)	0.078	0.078	ND	0.0288	0.003	0.0038	0.004	ND
Total Volatile Organic Compounds (VOCs)	0.0964	0.1874	0.2395	0.1656	0.046	0.0432	0.023	0.0119

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by *human health toxicity equivalent factor.*

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**C**	**C**	**C**	**C**	**D**	**D**	**D**	**D**
Sample	**CBS-CSC-T6-1**	**CBS-CSC-T7-1**	**CBS-CSC-T8-1**	**CBS-CSC-T9-1**	**CBS-CSD-T1-1**	**CBS-CSD-T2-1**	**CBS-CSD-T3-1**	**CBS-CSD-T4-1**
Sample date	**12/13/01**	**12/13/01**	**12/13/01**	**12/13/01**	**12/12/01**	**12/12/01**	**12/12/01**	**12/12/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:								
Industry Specific Metals								
Copper	250	53	100	53	79	130	84	230
Lead	140	32	33	20	39	150	36	61
Nickel	170	400	330	250	90	180	250	410
Zinc	3000	3400	2700	2000	6400	8200	2000	3100
Total Organics (a)								
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.0000181	0.000000277	0.00000385	0.000002964	0.000003077	0.00003325	0.000001071	0.000002054
Total Polychlorinated biphenyls (PCBs)	0.0706	ND	0.0266	ND	ND	0.2918	0.0099	0.009
Total Pesticides	0.0098	0.0013	0.00909	ND	0.00388	0.01453	0.0021	0.00676
Total Herbicides	ND	ND	0.0066	ND	0.0054	0.071	0.0018	ND
Total Semivolatile Organic Compounds (SVOCs)	0.079	0.0017	0.002	0.0016	0.2022	0.382	0.0024	0.7133
Total Volatile Organic Compounds (VOCs)	0.8125	0.0453	0.022	0.0178	0.1623	0.0057	0.0289	0.0106

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**D**	**D**	**E**	**E**	**E**	**E**	**E**	**E**
Sample	**CBS-CSD-T5-1**	**CBS-CSD-T6-1**	**CBS-CSE-T1-1**	**CBS-CSE-T2-1**	**CBS-CSE-T3-1**	**CBS-CSE-T3-1-FD**	**CBS-CSE-T4-1**	**CBS-CSE-T5-1**
Sample date	**12/12/01**	**12/12/01**	**12/18/01**	**12/18/01**	**12/18/01**	**12/18/01**	**12/18/01**	**12/18/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:								
Industry Specific Metals								
Copper	190	1600	380	480	92	90	240	64
Lead	23	280	58	130	52	57	39	89
Nickel	260	530	260	190	220	180	220	120
Zinc	1800	3100	2900	1300	2300	2000	2600	1600
Total Organics (a)								
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.00000603	0.0008856	0.000000791	0.000005548	0.000002705	0.000003044	0.000000711	0.000000064
Total Polychlorinated biphenyls (PCBs)	0.0074	2.4372	0.0232	0.0299	0.0044	0.0025	ND	0.0024
Total Pesticides	0.0128	1.0914	0.00261	0.00266	0.00217	0.00096	0.00119	0.00019
Total Herbicides	ND	ND	ND	ND	ND	ND	ND	0.035
Total Semivolatile Organic Compounds (SVOCs)	ND	1.428	0.0033	0.002	ND	ND	ND	0.0022
Total Volatile Organic Compounds (VOCs)	ND	0.0144	0.0941	ND	0.03	ND	0.0699	0.02

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**
Sample	**CBS-CSE-T6-1**	**CBS-CSE-T7-1**	**CBS-CSE-T8-1**	**CBS-CSE-T9-1**	**CBS-CSE-T10-1**	**CBS-CSE-T11-1**	**CBS-CSE-T12-1**	**CBS-CSE-T13-2**
Sample date	**12/18/01**	**12/19/01**	**12/19/01**	**12/19/01**	**12/19/01**	**12/19/01**	**12/19/01**	**2/14/02**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:								
Industry Specific Metals								
Copper	170	510	25	39	300	88	33	94
Lead	50	29	17	26	170	33	28	44
Nickel	170	310	44	160	170	67	120	52
Zinc	2600	2900	490	1900	2500	690	1300	320
Total Organics (a)								
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.00000592	0.00000685	0.00000434	ND	ND	0.000004129	ND	0.00000673
Total Polychlorinated biphenyls (PCBs)	0.0855	ND	0.0289	ND	ND	0.0359	ND	0.9171
Total Pesticides	0.0234	0.00155	0.00138	0.00172	0.00063	0.00259	0.00017	0.027
Total Herbicides	ND	ND	ND	ND	0.0025	ND	ND	ND
Total Semivolatile Organic Compounds (SVOCs)	0.0016	ND	ND	ND	ND	0.21	ND	0.747
Total Volatile Organic Compounds (VOCs)	ND	ND	0.106	0.0018	0.027	0.0022	0.0733	0.0436

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**E**	**E**	**E**	**E**	**E**	**F**	**F**	**F**
Sample	**CBS-CSE-T14-1**	**CBS-CSE-T15-1**	**CBS-CSE-T15-1-FD**	**CBS-CSE-T16-1**	**CBS-CSE-T17-1**	**CBS-CSF-T1-1**	**CBS-CSF-T2-1**	**CBS-CSF-T3-1**
Sample date	**12/18/01**	**12/18/01**	**12/18/01**	**12/21/01**	**12/21/01**	**12/21/01**	**12/11/01**	**12/11/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:								
Industry Specific Metals								
Copper	40	24	25	4300	350	73	45	27
Lead	25	24	20	400	120	21	29	24
Nickel	140	56	61	600	200	93	95	36
Zinc	830	560	690	5900	2100	530	1100	1200
Total Organics (a)								
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.00000567	0.000000771	0.000000772	0.00007336	0.00010523	0.00000161	0.000000071	0.00001079
Total Polychlorinated biphenyls (PCBs)	ND	ND	ND	1.2517	0.1034	ND	ND	0.3569
Total Pesticides	0.00152	ND	0.0006	0.0513	0.0888	0.00071	0.00029	0.03203
Total Herbicides	ND	ND	ND	0.016	ND	ND	ND	ND
Total Semivolatile Organic Compounds (SVOCs)	ND	0.074	0.023	4.563	1.71	ND	0.132	1.628
Total Volatile Organic Compounds (VOCs)	0.0231	0.0149	0.012	0.2629	0.0382	0.0509	0.0258	0.017

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**
Sample	**CBS-CSF-T4-1**	**CBS-CSF-T5-1**	**CBS-CSF-T6-1**	**CBS-CSF-T6-1-FD**	**CBS-CSF-T7-1**	**CBS-CSF-T8-1**	**CBS-CSF-T9-1**	**CBS-CSF-T9-1-FD**
Sample date	**12/11/01**	**1/8/02**	**1/16/02**	**1/16/02**	**1/16/02**	**1/23/02**	**1/23/02**	**1/23/02**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:								
Industry Specific Metals								
Copper	24	190	280	84	80	99	120	110
Lead	21	450	45	29	27	28	53	50
Nickel	32	630	250	210	160	150	110	100
Zinc	1100	15000	3200	2500	1600	1500	1400	1200
Total Organics (a)								
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.000000084	0.000769	0.000001088	0.000000733	0.00000088	0.000000031	0.000001197	0.000001383
Total Polychlorinated biphenyls (PCBs)	ND	0.001	0.0154	0.0328	0.014	ND	0.0097	0.008
Total Pesticides	ND	ND	0.0078	0.001	0.0046	0.00054	0.0019	0.00302
Total Herbicides	ND	0.0059	ND	ND	ND	ND	0.0084	ND
Total Semivolatile Organic Compounds (SVOCs)	ND	0.337	0.1974	ND	0.0031	0.0023	0.002	0.0018
Total Volatile Organic Compounds (VOCs)	0.018	0.074	0.0664	0.086	0.061	0.0385	ND	ND

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**
Sample	**CBS-CSF-T10-1**	**CBS-CSF-T11-1**	**CBS-CSF-T12-1**	**CBS-CSF-T13-1**	**CBS-CSF-T14-1**	**CBS-CSF-T15-1**	**CBS-CSF-T15-1-FD**	**CBS-CSF-T16-1**
Sample date	**1/25/02**	**1/25/02**	**1/23/02**	**1/16/02**	**1/8/02**	**1/8/02**	**1/8/02**	**2/6/02**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:								
Industry Specific Metals								
Copper	180	110	92	23	150	260	750	20
Lead	41	23	18	7.5	100	61	13	15
Nickel	94	300	270	68	230	210	130	15
Zinc	1200	2400	2400	400	1700	2000	950	59
Total Organics (a)								
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.000000647	0.000000925	0.000001787	0.000000014	0.00020698	0.00002966	0.0000284	0.00000022
Total Polychlorinated biphenyls (PCBs)	ND	ND	ND	ND	0.025	0.0185	0.0239	ND
Total Pesticides	0.0008	0.00118	0.00162	ND	ND	ND	ND	0.00626
Total Herbicides	ND	2.3044	ND	ND	0.0021	0.057	0.0025	ND
Total Semivolatile Organic Compounds (SVOCs)	ND	0.0015	ND	ND	1.211	0.4963	0.4002	ND
Total Volatile Organic Compounds (VOCs)	ND	ND	0.0077	ND	0.068	0.0192	ND	0.0576

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**SITE M**	**SITE M**	**SITE M**	**SITE M**	**SITE M**	**SITE M**	**SITE M**	**SITE M**
Sample	**SED-M-S2 0-6**	**SED-M-S3-(0-6)**	**SED-M-S4-(0-6)**	**SED-M-S5 0-6**	**SED-M-S6-(0-6)**	**SED-M-S7-(0-6)**	**SED-M-S7-FD(0-6)**	**SED-M-S8 0-6**
Sample date	**6/22/01**	**7/10/01**	**8/1/01**	**6/22/01**	**7/10/01**	**8/1/01**	**8/1/01**	**6/22/01**
Units	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Analyte or group:								
Industry Specific Metals								
Copper	230	610	600	770	110	5200	2900	920
Lead	19	99	63	27	19	250	180	82
Nickel	150	500	120	260	110	1700	840	300
Zinc	1400	4000	800	1200	310	6400	3300	2500
Total Organics (a)								
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.00009491	0.0001977	0.000609	0.00046673	0.00006807	0.000837	0.0008514	0.0006241
Total Polychlorinated biphenyls (PCBs)	0.532	1.293	4.323	1.003	1.7239	9.967	7.113	1.554
Total Pesticides	0.08129	0.0283	ND	0.1471	0.0154	ND	ND	0.4819
Total Herbicides	ND	ND	0.0408	ND	ND	0.1056	0.0516	0.0033
Total Semivolatile Organic Compounds (SVOCs)	0.014	4.693	1.11	0.4899	0.745	7.014	6.647	1.65
Total Volatile Organic Compounds (VOCs)	0.0352	0.9579	1.915	0.0677	0.3885	1.2997	1.3632	1.2252

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Table 2-7
Total Concentration Data
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/Cost Analysis

Creek segment	**SITE M**	**SITE M**
Sample	**SED-M-S9-(0-6)**	**SED-M-S10 0-6**
Sample date	**7/10/01**	**6/22/01**
Units	**mg/kg**	**mg/kg**
Analyte or group:		
Industry Specific Metals		
Copper	750	4900
Lead	37	270
Nickel	110	1500
Zinc	740	12000
Total Organics (a)		
Total Dioxin Toxicity Equivalent Quotient (TEQ) (b)	0.00041347	0.005225
Total Polychlorinated biphenyls (PCBs)	2.3563	27.138
Total Pesticides	0.039	3.15
Total Herbicides	ND	7.8
Total Semivolatile Organic Compounds (SVOCs)	0.755	13.74
Total Volatile Organic Compounds (VOCs)	0.0193	0.1591

Notes:
ND - Not Detected.
(a) Totals represent the sum of all detected constituents in each analytical group.
(b) Sum of dioxin congeners after multilication by human health toxicity equivalent factor.

Section 3.0

3.0 Identification of Remedial Action Objectives

The following Remedial Action Objectives (RAOs) were identified for the Final Remedial Action in Dead Creek:

- Prevent or abate actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances, pollutants or contaminants;
- Prevent or abate actual or potential contamination of surface water, groundwater and ecosystems;
- Achieve acceptable chemical-specific contaminant levels, or range of levels, for all applicable exposure routes; and
- Mitigate or abate other situations or factors that may pose threats to public health, welfare or the environment.

To achieve these RAOs, the Final Dead Creek Remedy should focus on protecting the health and welfare of residents living on or near the creek channel, protecting workers who perform invasive activities in the channel and abating or preventing adverse ecological impacts resulting from exposure to impacted creek bottom soils or surface water in contact with these soils. Site-specific, risk-based concentrations can be derived for constituents detected in creek bottom soils to identify those portions of the channel that pose unacceptable actual or potential risks to humans or ecosystems. Isolating creek bottom soils with concentrations above acceptable risk-based levels by installing a liner or by excavating and transferring them to the on-site containment cell will protect public health and environment.

For these reasons, the goal of the Dead Creek Final Remedy is to protect residents, workers and the aquatic ecosystem by isolating or removing impacted creek bottom soils with concentrations above acceptable, site-specific, risk-based concentrations and, thereby, abating or preventing:

- Exposure of human populations, animals or the food chain to contaminants;
- Contamination of surface water, groundwater and ecosystems;
- Chemical-specific contamination for all applicable exposure routes; and
- Threats to public health, welfare or the environment.

Quarterly surface water quality monitoring for Zinc and annual fish tissue monitoring for PCBs are appropriate performance measures for these Dead Creek Final Remedy objectives.

3.1 Determination of Remedial Action Objectives

Implementation of institutional controls, surface water quality monitoring and isolation and/or removal of impacted creek bottom soils, as discussed in Sections 5.2.2 and 5.2.3, will achieve these Remedial Action Objectives. Implementation of a Final Remedial Action for Dead Creek will prevent or abate actual or potential human and ecosystem exposure to hazardous substances, pollutants and contaminants and actual or potential contamination of surface water. It will achieve chemical-specific contaminant levels in Dead Creek surface water. Other situations or factors that may pose threats to public health, welfare or the environment will be prevented or abated both short term and long term by implementation of a Final Remedial Action. Aquifer restoration, which will be evaluated on a regional basis upon completion of the Sauget Area 2 RI/FS, is not within the scope of the Dead Creek Final Remedy.

3.2 Determination of Remedial Action Schedule

Barring unforeseen difficulties regulatory approvals, site access, availability of labor, equipment and materials, public acceptance or off-site treatment and disposal capacity, design and construction of channel liners or excavation of impacted creek bottom soils could be completed in a six-month period.

3.3 Identification of ARARs

Chemical-specific, location-specific and action-specific ARARs that are considered applicable, relevant and appropriate or to-be-considered are identified in this section. Compliance of identified remedial alternatives with ARARs is discussed in Detailed Analysis of Alternatives Sections 5.1.2, 5.2.2 and 5.3.2

3.3.1 Chemical-Specific ARARs

Chemical-specific ARARs define acceptable concentrations and are used to establish preliminary remediation goals. Chemical-specific ARARs include RCRA and Toxic Substances Control Act (TSCA) provisions for management of hazardous waste. Part 742 of Title 35 of the Illinois Administrative Code "sets forth procedures for evaluating the risk to human health posed by environmental conditions and developing remediation objectives that achieve acceptable risk levels." Although not specifically an ARAR, 35 IAC Part 742 may be considered in that it helps to ensure protectiveness and is otherwise appropriate for use in evaluating effectiveness of removal action alternatives. Relevance and applicability of chemical-specific ARARs are summarized in the following table. State regulations highlighted with an asterisk are only applicable or relevant and appropriate to the extent that they are more stringent than federal requirements.

ARAR	Description	Applicability
40 CFR 261 (35 IAC 721)	Methods for identifying hazardous waste	Relevant and Appropriate
40 CFR 268 (35 IAC 728)	Rules regarding disposal, including land disposal restrictions, for specified hazardous wastes	Relevant and Appropriate
40 CFR 761	Rules governing management, disposal and cleanup of PCB-containing wastes	Relevant and Appropriate
40 CFR 766	Testing procedures for dioxin	Relevant and Appropriate

3.3.2 Location-Specific ARARs

Location-specific ARARs set restrictions on activities within certain locations such as floodplains or wetlands. Brief descriptions of the relevance and appropriateness of location-specific ARARs are summarized in the following table.

ARAR	Description	Applicability
40 CFR 264.18	Standards for hazardous waste management activities in specific locations such as 100-year floodplains	Relevant and Appropriate
40 CFR 6	Procedures for evaluating actions to avoid	Applicable

	adversely impacting floodplains, endangered species, wetlands and other protected resources	
33 CFR 323 **40 CFR 230**	Restrictions on discharge of fill material into wetlands	Relevant and Appropriate

3.3.3 Action-Specific ARARs

Action-specific ARARs set controls for particular treatment and disposal activities related to the management of hazardous waste. Brief descriptions of the relevance and appropriateness of action-specific ARARs are summarized in the following table. State regulations highlighted with an asterisk are only applicable or relevant and appropriate to the extent that they are more stringent than federal requirements.

ARAR	Description	Applicability
40 CFR 262 **40 CFR 263** (35 IAC 722) (35 IAC 723)	Rules regarding generation and transportation of hazardous waste	Relevant and Appropriate to Excavation but not to Channel Liner
40 CFR 761	Rules governing management, disposal and cleanup of PCB-containing wastes	Relevant and Appropriate
29 CFR 1910.120	Employee safety standards for hazardous waste/ emergency response work	Applicable
29 CFR 1926	Employee safety standards for construction work	Applicable
35 IAC 742	Provides for a tiered approach to developing remediation action objectives and describes how certain actions meet remediation objectives	To Be Considered

Section 4.0

4.0 IDENTIFICATION OF REMEDIAL ALTERNATIVES

The purpose for this section is to identify and screen creek bottom soil remediation technologies that are potentially suitable for ensuring adequate protection of human health and the environment considering the specific conditions at the Site. The following subsections identify remedial action objectives, discuss general response actions and identify and screen remedial technologies and processes.

4.1 General Response Actions

General response actions (GRAs) describe those actions that will satisfy the remedial action objectives. General response actions may include treatment, containment, removal, institutional controls, monitoring or a combination thereof. GRAs are described in broad terms in order to encompass the range of possible remedial actions for achieving the remedial action objectives. By identifying appropriate response actions that apply to impacted creek bottom soil, the list of technologies to be reviewed can be substantially reduced. The GRAs for creek bottom soil are:

- No Action
- Institutional Controls
  - Access Restrictions
  - Fish Consumption Advisories
  - Warning Signs
  - Community Relations
- Monitored Natural Recovery
- Containment (Capping)
  - Vegetative Cover
  - Soil or Sand Cap
  - Anchored High Density Polyethylene (HDPE) Liner
  - Armoring
  - Paving
- Removal
- In-situ Treatment
- Ex-situ Treatment
- Disposal

The following sections describe technology types and process options for creek bottom soil that could satisfy the remedial action objectives for Dead Creek Segments B, C, D, E and F and Site M within Sauget Area 1.

4.1.1 No Action

No action is retained, as required by the NCP, as a baseline for comparing the benefits and limitations of taking no remedial action with those of other technology-based remedial alternatives. The "no action" alternative requires no human intervention for cleanup. For the no action alternative, the only remedial process to improve creek bottom soil quality is natural restoration. Natural restoration may involve one or more processes that effectively reduce contaminant toxicity, mobility, or volume. These processes include biodegradation, diffusion, dilution, sorption, volatilization, and/or chemical and biochemical stabilization of contaminants. The no action alternative is unlikely to meet the RAOs with respect to ecological receptors for Sauget Area 1, and under this alternative verification of RAOs will not be required. Selection of this process option assumes that no remedial actions or institutional controls are involved, nor is a long-term operation and maintenance plan required.

4.1.2 Institutional Controls

Institutional controls can include access restrictions to the area of interest, as well as regulations restricting specific activity within the area of interest. Institutional controls are administrative actions (e.g., access restrictions, fish consumption advisories, community relations, excavation moratoriums) designed to prevent exposure of humans and wildlife to chemicals of potential concern (COCs).

Institutional controls already in place at Sauget Area 1 include fencing at Creek Segment B and Site M. Additional institutional controls can be implemented to restrict those activities that would result in exposure to COCs.

4.1.3 Monitored Natural Recovery

Monitored natural recovery (MNR) refers to the beneficial effects of natural processes that reduce soil and sediment concentrations of COCs in the exposure zone. These processes include biodegradation, biotransformation, bioturbation, diffusion, dilution, adsorption, volatilization, chemical and biochemical stabilization of contaminants, and burial by natural deposition of cleaner sediments.

4.1.4 Containment

Containment involves the capping of the creek bottom soil to prevent exposure, and to mitigate erosional transport of the soils through run-off. Capping is effective at isolating contaminants like PCBs, especially where the principal transport mechanism is erosional resuspension and deposition. Various process options exist, and different options may be utilized to account for differing site-specific conditions in various segments of Dead Creek.

4.1.5 Removal

Removal by dredging or excavation is a common practice for managing contaminated soils and sediments. Excavated material is usually relocated to a treatment or disposal facility. Sediment excavation was previously employed to remove 46,000 cubic yards of impacted sediment from Dead Creek Segments B, C, D, E and F and Site M, which was transferred to an on-site RCRA/TSCA-compliant containment cell. Approximately 20,000 cubic yards of capacity remain in this cell. One available disposal option involves the use of the remaining capacity in the existing on-site containment cell . The intermittent nature of Dead Creek, as well as the channel geometry precludes the use of dredging technologies for removal and the prior removal actions were completed using conventional excavation equipment (e.g. long-stick track excavator). As such, dredging will be eliminated as a process option for the EE/CA.

4.1.6 In-situ Treatment

In-situ treatment of creek bottom soil could include process options to stabilize or solidify the soils, mitigating erosional transport of the soils through run-off and preventing the partitioning of COCs to surface water and ground water. At the present time, in-situ treatment technologies potentially applicable to the stabilization of Zinc in soils remain generally unproven for the conditions encountered at the Site. These technologies may also be difficult to implement, of limited effectiveness and expensive.

4.1.7 Ex-situ Treatment

Ex-situ treatment involves the application of treatment technologies to transform, destroy or immobilize COCs following removal of the creek bottom soil. Thermal destruction is one of the more common treatment technologies for PCBs and other chlorinated organics, although there is only one commercial incineration facility permitted to accept PCBs. Other potentially applicable ex-situ treatment process options are stabilization, solidification and dewatering. These process options could be used to facilitate soils handling and disposal, but do not significantly reduce the toxicity or mobility of PCBs.

4.1.8 Disposal

Disposal is the permanent placement of waste material into an appropriate management facility. It is frequently used as a component of alternatives involving removal of soils. Land disposal of wastes containing PCBs is restricted, and available disposal locations are limited. Moreover, pretreatment to achieve the Universal Treatment Standards may be required for some wastes. One readily available disposal option involves the use of remaining capacity in the existing on-site containment cell constructed as part of the Time-Critical Sediment Removal Action.

4.2 Identification and Screening of Alternatives

This section describes technologies and processes that could satisfy the remedial action objectives for creek bottom soils in Dead Creek. Technology types refer to the general response actions that were described in Section 4.1. General response actions for creek bottom soil include institutional controls, monitored natural recovery, containment, removal, in-situ treatment, ex-situ treatment and disposal. The following subsections describe technology types and process options for creek bottom soil.

4.2.1 Institutional Controls

Institutional controls can include access restrictions to the area of interest, as well as regulations restricting specific activity within the area of interest. Institutional controls are administrative actions (e.g., access restrictions, fish consumption advisories, community relations, excavation moratoriums) designed to prevent exposure of humans and wildlife to COCs.

As discussed previously, institutional controls already in place at Sauget Area 1 include fencing of Creek Segment B and Site M. Institutional controls are generally effective at limiting human exposure, but are often not effective at managing ongoing risks to ecological receptors. Institutional controls are incorporated into many soil and sediment cleanup projects and are retained for further consideration in the development of remedial alternatives. The existing institutional controls and additional institutional controls to be considered are described in the following sections.

Access Restrictions - Access restrictions include physical restrictions such as the use of fencing and locked gates to manage human access to impacted areas. These types of restrictions are not commonly applied in a drainage setting due to concerns for maintenance and upkeep (particularly in light of the complexities of accessing numerous properties), and for public safety (the creation of egress limitations). As such, fencing (other than that already installed at CS-B and Site M) and related barriers will not be retained for further consideration in the EE/CA.

Excavation moratoriums preclude soil disturbance or removal in impacted areas without appropriate protection of construction workers and erosion control measures. Industrial and construction workers doing any type of invasive work are trained for high hazard material exposure, hazardous waste site operations, advised of the complete range of chemical and physical hazards to which they may be exposed, and provided with personal protective equipment to mitigate all identified inhalation, ingestion, and dermal contact risks. These measures reduce risks associated with short-term direct contact and the transport of COCs via erosion and stormwater run-off. Excavation moratoriums can help to insure that remedial actions remain protective over time, and will be retained in the EE/CA.

Fish Consumption Advisories - Fish consumption advisories warn the public of the potential risks posed by consuming fish caught in affected waters. Public notification of these advisories is typically managed through a combination of signs, notice to local fishing licensing locations, and/or posting on regulatory agency websites. Dead Creek is an intermittent stream, with only a few isolated pockets of water that could sustain a fish population. As such, few game fish reside in the creek segments to be remediated. Moreover, the baseline risk assessment

concludes that the risk to human receptors is within acceptable levels. As such, fish consumption advisories will not be retained for further consideration in the EE/CA.

Warning Signs - Warning signs discourage access and unauthorized excavation activities. They can be posted on security fencing (where present at CS-B and Site M) and in other areas as needed. Implementation can be in conjunction with other response actions. Warning signs will not manage risks to ecological receptors, however, except to the degree that they supplement access restrictions (i.e. excavation moratoriums to manage COC transport via erosion). As such, they will be retained for consideration only as a component of other institutional controls.

Community Relations - Community relations may include an information campaign designed to ensure public awareness about the potential risks, if any, with contact to creek bottom soil in impacted portions of Dead Creek and will be retained for consideration as a component of other institutional controls.

4.2.2 Monitored Natural Recovery

Monitored natural recovery (MNR) refers to the beneficial effects of natural processes that reduce soil and sediment concentrations of COCs in the exposure zone. COC properties and site conditions influence the specific MNR mechanisms that occur at a site. For example, PCBs do not readily biodegrade in the soil environment, and volatilization and diffusion are not significant processes in the reduction of exposure zone concentrations for these chemicals. Zinc will not degrade but natural processes can affects its solubility and, therefore, its bioavailability. While MNR alone will not achieve the RAOs in heavily impacted areas, and will not be retained as a stand-alone technology, natural processes should be considered when evaluating the long-term performance of technology-based remedial alternatives.

4.2.3 Containment

Containment involves the capping of the creek bottom soil to prevent exposure, and to mitigate erosional transport of the soils through run-off. Potential approaches to capping include the use of the following process options, either individually or in combination:

- vegetated cap;
- soil or sand cap;
- anchored synthetic (e.g. high density polyethylene [HDPE]) liner;
- armoring with riprap, articulated concrete mat, decorative stone, asphalt, poured concrete or sprayed-on concrete.

Capping is effective at isolating contaminants like PCBs and Zinc, especially where the principal transport mechanism is erosional resuspension and deposition. Cap designs should account for normal and extreme flow conditions. Specific cap materials, thicknesses, and other design parameters are selected based on site-specific conditions and design criteria. Caps may include combinations of different process options in a multi-layer (composite) configuration. Different types of engineered barriers (i.e. different process options) could potentially be placed in different segments of the creek, as appropriate to the creek bed configuration and risk management objectives. For example, armoring may be desired in areas of potential scouring and erosion, while a vegetated cap or sand cover may be applied in depositional areas. The need for a synthetic barrier as a component of a containment system depends on the mobility of the COCs from the creek bottom soil into/through the containment system via wicking or water partitioning and/or the discharge of impacted groundwater from adjacent disposal facilities such as Sauget Area 1 Sites G, H and L.

Vegetated Cap - A vegetated cap would consist of a 6 to 12 inch layer of soil stabilized by vegetation. The soil cap isolates impacted creek bottom soil and the vegetation's root system stabilizes the soil cap, providing erosion resistance. A concrete low-flow channel could also be installed to further mitigate erosion. Initially, silt fencing and similar erosion control devices would be employed until the vegetation has become established. A vegetated cap will eliminate direct contact exposure to COCs through isolation of impacted soils. The approach is implementable using conventional equipment and materials, would provide short-term effectiveness and is among the lower cost capping designs. Long-term effectiveness is less certain, principally due to the likely need for ongoing maintenance of the cap to control erosion.

Soil or Sand Cap - Soil or sand caps are typically utilized to cover inundated sediments in relatively level, depositional environments. These caps separate impacted sediments from organisms living at the sediment-water interface and isolate COCs from the overlying water. Two general types of caps are utilized, thin-layer caps (typically 5 to 15 cm thick) and thick-layer

caps (typically 20 to 50 cm thick). Thin-layer caps are more often utilized where disruption of the benthic community is a concern. Pumping sand or soil-laden water into the remediation site, and allowing it to settle out to form the cap is the typical implementation method. Due to the intermittent and steep-walled nature of Dead Creek this capping approach would be difficult to implement, as few areas are continuously submerged. Moreover, without some form of stabilization, erosion would scour the cap away, diminishing its effectiveness. As such, this capping option will not be retained for further consideration.

Synthetic Liner - *Synthetic liners are not used as a stand-alone process option for drainage* areas, but may be used as a component of capping systems. Synthetic liners are typically constructed of 20 to 40 millimeter (mil) thick, high-density polyethylene (HDPE). Site preparation including grubbing, contouring and the installation of a geotextile, are utilized to prevent damage to the liner during placement. The membrane layer can be used to enhance the load-bearing capacity of soft sediments, or to provide a barrier layer to impede the transport of COCs between media (e.g. soil to surface water, surface water to groundwater or groundwater to surface water) or the burrowing of animals through the cap. When used as a component of other capping systems, this option can effectively eliminate direct contact exposure through isolation of impacted soils. If applied over a very large area, the elimination of groundwater recharge may have undesirable impacts on the local water budget. The approach is implementable, and would provide both short-term and long-term effectiveness. Costs for synthetic liners are relatively lower than other cover materials of similar permeability.

Armoring - Armoring is a term used to describe caps that are constructed with a higher density material than the sand and soil caps discussed above. Cap materials include riprap, stone, concrete and asphalt. Differing products can be utilized to meet particular site constraints or aesthetic objectives. For example, concrete caps include sprayed-on concrete (e.g. Gunite®), poured concrete and articulated concrete mats. Various sizes and types of articulated concrete mat are also available. Open cell systems typically promote drainage through the cap and the open spaces can be filled with soil and vegetated, providing a more aesthetically pleasing appearance that can provide a habitat for wildlife, as well as naturally stabilizing the installation. When used in Dead Creek, a closed cell configuration would likely be utilized to better isolate the underlying COCs and provide the weight necessary to resist the hydrostatic pressures associated with high groundwater levels. Armoring can be used in conjunction with an HDPE

liner to create a composite cap. This approach combines the stability and permanence of armoring with the impermeable barrier of the HDPE liner.

Armoring can be constructed using commercially available materials and equipment. To account for site conditions, different capping materials may be used in different locations. For example, placement of an articulated concrete mat in developed areas of Dead Creek would result in a more protective and aesthetically pleasing lined channel than one armored with rip-rap. Installation of rip-rap in undeveloped area such as Creek Segments B and F would be protective and promote rapid ecological re-colonization in undeveloped areas.

As the cap will partially fill the drainage channel, potential impacts to storm water management must be considered in the final design. The more impervious methods (covering with asphalt, concrete) will preclude groundwater recharge and could impact storm water retention, which may have undesirable impacts on the local water budget and flood control. Overall, armoring provides long-term and short-term effectiveness through the isolation of COCs and the elimination of direct contact exposure in a stable cap design. More durable products (i.e. concrete, rap rap) provide greater long-term effectiveness, and have lower long-term maintenance costs, than asphalt.

4.2.4 Removal

Removal through excavation is a common practice for managing contaminated soils. Sediment excavation was previously employed in Dead Creek, and soil excavation would be implemented using similar construction methods. The excavated material is usually relocated to a treatment or disposal facility. One available disposal option involves the use of remaining capacity within the existing on-site containment cell constructed for the Time-Critical Sediment Removal Action. Removal requires consideration of other unit processes such as:

- erosion control and stormwater management to minimize complications during implementation, to mitigate contaminant transport, and to prevent further erosion following the remedial action;
- dewatering of excavated materials to facilitate handling, transportation, treatment and disposal;
- treatment and disposal of water extracted or expressed from the soils; and

- treatment and/or disposal of the excavated material.

With careful planning and the use of engineering controls, removal can be an effective technology for the remediation of creek bottom soil. The technology is readily implementable utilizing conventional materials and equipment. However, past experience demonstrated that initial dewatering in the isolated submerged areas will facilitate the removal process, and will reduce the need for subsequent dewatering of excavated soils. Water treatment using silt traps and silt fences is utilized to mitigate transport of suspended solids. Localized stockpiling and gravity drainage can be used to enhance the handling characteristics of the soil, if necessary.

4.2.5 In-Situ Treatment

In-situ treatment of creek bottom soil could include process options to stabilize or solidify the soils in place (i.e. without first removing the soils), mitigating erosional transport of the soils through run-off and preventing the partitioning of COCs to surface water and ground water. At the present time, the technical literature indicates that some in-situ treatment technologies exist for the degradation of PCBs in soils; such as chemical oxidation and vitrification. Unfortunately, these technologies are generally unproven for the COCs encountered in Dead Creek, difficult to implement in the creek setting, of limited effectiveness and expensive. As such, no in-situ treatment technologies will be retained for the EE/CA.

4.2.6 Ex-Situ Treatment

Ex-situ treatment involves the application of treatment technologies to transform, destroy or immobilize COCs following removal of the creek bottom soil. Most of the commercially available treatment technologies are incapable of effectively treating PCBs to required levels. While some innovative technologies were used to treat PCBs in pilot tests (e.g. radiolytic dechlorination, supercritical water oxidation), they are not commercially available and are unproven in a full-scale setting. Thermal destruction is one of the more common treatment technologies for chlorinated organics, but the costs of the high temperature thermal treatment processes necessary to treat PCBs are very high. Moreover, only one fixed-site incinerator is permitted to burn PCBs. However, only one fixed-site incinerator in the United States is permitted to burn PCBs, which potentially creates a treatment capacity limitation.

Other potentially applicable ex-situ treatment process options are stabilization, solidification and dewatering. These process options could be used to facilitate soils handling and disposal, but do not significantly reduce the toxicity or mobility of PCBs. Based upon experience from the previous removal action, the only process option that may be required is dewatering. This can be achieved, where needed, through localized stockpiling and gravity drainage and/or addition of solidification agents. As such, only dewatering will be retained as a potential technology to facilitate soils handling and disposal.

4.2.7 Disposal

Disposal is the permanent placement of waste material into an appropriate management facility, and is necessarily coupled with removal actions. Land disposal of wastes containing PCBs is restricted, and available disposal locations are limited. Moreover, pretreatment to achieve the Universal Treatment Standards may be required for some wastes. One readily available disposal option involves the use of existing capacity within the on-Site containment cell constructed for the Time-Critical Sediment Removal Action. The on-site containment cell has a remaining capacity of 20,000 cubic yards. Disposal in the existing on-Site containment cell is implementable and provides short-term and long-term effectiveness through the isolation of COCs. This effectiveness is further enhanced by the low solubility and high sorption of PCBs, reducing the concern for partitioning to groundwater.

Section 5

5.0 DETAILED ANALYSIS OF ALTERNATIVES

This section presents evaluation of alternatives In the context of specific evaluation criteria developed to address CERCLA requirements and technical and policy considerations proven to be important for selecting remedial alternatives. The Human Health Risk Assessment (Section 2.4.1) indicates there are no unacceptable risks to recreational teenagers and/or construction workers resulting from exposure to creek bottom soils. The Ecological Risk Assessment (Section 2.4.2) indicates there is an adverse impact resulting from exposure to creek bottom soils within portions of Creek Segment B (Transects T0, T3, T4 and T11) and Creek Segment F (Transect T5). Based on the results of the risk assessments, further remedial action for creek bottom soils in these two sections of Dead Creek is appropriate to protect ecological receptors. Containment and removal with on-site disposal and ex-situ treatment and/or disposal for any soil that can not be transferred to the on-site containment cell are the only remedial technologies that are implementable and will be effective at managing the risks associated with the creek bottom soil in Creek Segment B Transects T0, T3, T4 and T11 (Figure 5-1) and Creek Segment F Transect T5 (Figure 5-2). For that reason, only the three alternatives listed below are compared in this Engineering Evaluation/Cost Assessment.

- **Creek Bottom Soils Alternative A – No Action**
- **Creek Bottom Soils Alternative B – Containment**
  - Institutional Controls
  - Containment
  - Monitoring
    - Surface Water Quality
    - Fish Tissue Bioaccumulation
- **Creek Bottom Soils Alternative C – Removal**
  - Institutional Controls
  - Removal
    - Excavation and On-Site Disposal For Soil Volumes Up To 20,000 CY
    - Excavation and Off-Site Treatment For Soil Volumes In Excess of 20,000 CY
  - Monitoring
    - Surface Water Quality
    - Fish Tissue Bioaccumulation

This suite of remedial alternatives is intended to be representative of the remedial alternatives that are available, rather than inclusive of all possible approaches. The use of these alternatives in this EE/CA does not necessarily preclude the use of more than one alternative throughout Dead Creek, or the selection of different process options for containment or disposal, assuming those other alternatives are implementable and effective. For example, some portions of the creek may be treated by excavation and disposal while others are contained.

The No Action, Containment, and Excavation and Disposal alternatives are discussed in Sections 5.1, 5.2 and 5.3, respectively. Feasibility Study guidance requires that these alternatives be evaluated according to the following criteria:

- Threshold Criteria
  - Overall protection of human health and the environment
  - Compliance with ARARs
- Balancing Criteria
  - Long-term effectiveness and permanence
  - Reduction of toxicity, mobility or volume
  - Short-term effectiveness
  - Implementability
  - Cost
- Regulatory/Community Criteria
  - State acceptance
  - Community acceptance

These nine evaluation criteria are used to assess the benefits, projected costs and risks associated with each remedial alternative, on an individual basis. EPA will consider and address both State and community acceptance of an alternative when making a recommendation and in the final selection of a remedy. Consequently, these criteria are not addressed in this report.

5.1 Creek Bottom Soils Alternative A – No Action

This alternative includes no actions to address Creek bottom soil in Sauget Area 1.

5.1.1 Overall Protection of Human Health and the Environment

Based on the results of the human health risk assessment, implementation of the No-action alternative will be protective of human health. However, implementation of the No Action alternative will not protect the ecological receptors from risks associated with residual PCB and Zinc concentrations in creek bottom soil at Transects T0, T3, T4 and T11 in Creek Segment B and Zinc concentrations at Transect T5 in Creek Segment F.

5.1.2 Compliance with ARARs

Creek Bottom Soil Alternative A – No Action, does not achieve compliance with ARARs. A No Action alternative will not adversely impact floodplains or wetlands, so it is compliant with location-specific ARARs. Neither chemical-specific nor action-specific ARARs apply because there are no actions.

5.1.3 Long-Term Effectiveness and Permanence

Since no action is taken to abate the risks to ecological receptors Creek Segment B Transects T0, T3, T4 and T11 and Creek Segment F T5, a No Action alternative is unlikely to be an effective or permanent long-term remedy.

5.1.4 Reduction of Toxicity, Mobility or Volume

Over time, natural remediation processes will reduce the toxicity, mobility and volume of contaminants in the exposure zone. These processes include biodegradation, biotransformation, bioturbation, diffusion, dilution, adsorption, volatilization, chemical and biochemical stabilization of contaminants, and burial by natural deposition of cleaner sediments. However, this alternative does not provide for treatment beyond that afforded by natural processes, and may not achieve an appropriate degree of risk reduction within a reasonable timeframe.

5.1.5 Short-Term Effectiveness

While the baseline risk assessment has identified no unacceptable risk to humans, the potential risk to ecological receptors will not be addressed if a No Action alternative is implemented. In addition, a No Action alternative will not mitigate the potential transport of impacted soils through erosion.

5.1.6 Implementability

This alternative is readily implementable.

5.1.7 Cost

No costs are associated with this alternative.

5.2 Creek Bottom Soils Alternative B – Containment

Alternative B includes the following elements:

- Institutional Controls
- Containment
- Monitoring
  - Surface Water Quality
  - Fish Tissue Bioaccumulation

Institutional Controls - This alternative includes institutional controls in combination with containment of creek bottom soil by a composite, rip-rap armored liner. Institutional controls will be utilized to ensure the effectiveness of the containment remedy. Existing fencing at Creek Segment B and Site M will be used as an institutional control to enhance protection of the channel liner. Other institutional controls could include warning signs posted at the top of the creek bank in Creek Segments B and F to notify the public and/or workers about the presence of an impermeable membrane below the rip-rap and measures needed to protect the integrity of the HDPE liner. Routine maintenance and inspection of the condition and effectiveness of the institutional controls will be performed. Inspections will be conducted annually.

Containment - Containment with an armored impermeable liner will be utilized to remediate creek bottom soil in all of Creek Segment B (1,800 linear feet), as required by the Sediment

Removal Action UAO and Creek Segment F from the Terminal Railroad embankment to a point 800 ft. south of the embankment (Figure 5-1

Construction of the armoring system should not require grubbing to remove vegetation and debris, as sediment excavation was recently completed. Some limited contouring may be conducted to achieve surface configurations and slopes that facilitate the installation of the cap, and that will allow for a stable finished cap. An allowance will be made for disposal of a limited volume of soils removed to achieve subbase grading. The cap will consist of:

- Base Geotextile;
- 40-mil HDPE Liner;
- Covering Geotextile; and
- Rip-rap.

Performance of the remedial action will be monitored to determine the effectiveness of the liner in preventing erosion and entrainment and/or solubilization of this COC. Surface water will be sampled quarterly sampling at the upstream and downstream of lined sections of Creek Segments B and F and the samples will be analyzed for Zinc. Fish tissue samples will be collected annually in Creek Segment B and Creek Segment F and analyzed for PCBs to evaluate the performance of the channel liners in preventing or mitigating bioaccumulation of this COC. Performance monitoring will be done for five years and discontinued unless the five year remedy review indicates that continued performance monitoring is appropriate.

5.2.1 Overall Protection of Human Health and the Environment

Based on the results of the Human Health Risk Assessment, creek bottom soils present no unacceptable risk to humans. Protection of ecological receptors, specifically fish, through elimination of exposure to PCBs and Zinc in creek bottom soil at Creek Segment B Transects T0, T3, T3 and T11 and Creek Segment T5 is warranted based on the results of the Ecological Risk Assessment. Containment of impacted creek bottom soil will protect ecological receptors from adverse impacts. Protection will be achieved by isolating impacted soils beneath an impermeable liner and a layer of rip-rap. This system will prevent direct contact with impacted sediments, and will prevent the transport of sediments via run-off to other potential exposure

points. Regular inspection of the containment system will be conducted to ensure that the system remains protective.

5.2.2 Compliance with ARARs

A containment alternative, as included in Alternative B, meets the objective of isolating impacted soil, preventing the transport of COCs through run-off and preventing or mitigating aquatic impacts. Because this alternative involves filling a portion of the channel with rip-rap, provision of additional storm water storage capacity may be necessary to achieve compliance with location-specific ARARs. Sediment removal deepened the channel and may provide all of the increased storm water storage necessary to offset the effect of installing an armored liner in the channel. Creek Bottom Soil Alternative B will also achieve compliance with action-specific ARARs.

5.2.3 Long-Term Effectiveness and Permanence

An armored lining system in the impacted sections of the Dead Creek channel will provide the benefit of isolating impacted soils, preventing the transport of COCs through run-off to the point where aquatic impact is reduced to acceptable levels and preventing the discharge of impacted groundwater to surface water. Moreover, the channel lining system will be durable and easily maintained. The institutional controls provide effective protection of human health, and ensure the long-term integrity of the cap system. As such, the containment alternative will provide greater long-term effectiveness and permanence than the No Action Alternative.

5.2.4 Reduction of Toxicity, Mobility or Volume

This alternative reduces the mobility of contaminants in creek bottom soils by providing a physical barrier to prevent the transport of soils via run-off. In the long term, this alternative may also reduce the toxicity and volume of COPCs through the action of natural processes, such as biodegradation, adsorption, dilution and chemical reactions with subsurface materials.

5.2.5 Short-Term Effectiveness

Physical containment more quickly mitigates the potential for exposure to, or transport of, Creek bottom soil than the No Action Alternative. The time needed to design, approve, procure, and construct containment system is expected to be on the order of 6 months.

Implementation of this alternative will present minimal risk to human health and the environment. Potential exposure to soils while installing the composite cap will be controlled by the use of appropriate health and safety procedures.

5.2.6 Implementability

Installation of the channel lining can be accomplished with conventional materials and equipment. Rip-rap and HDPE liners are commercially available products. Placement of these products utilizes commercially available equipment, such as trackhoes, excavators and dump trucks. Location-specific considerations related to the degree of contouring necessary for construction can be readily defined during the final remedial design stage.

5.2.7 Cost

The cost for this alternative, including capital costs, monitoring and reporting costs and annual maintenance costs, on a present value (PV) basis is as follows.

Description	Capital Cost	O&M Cost (PV)	Total Cost (PV)
Institutional Controls	$0	$155,113	$155,113
Containment	1,139,220	268,888	1,408,108
Monitoring	$0	453,426	453,426
Total	$1,139,220	877,427	2,016,647

The cost presented above is based on continuing corrective action for 30 years, which is considered appropriate for comparative purposes. A discount rate of 7% was used in the cost calculations. Costs were derived primarily from the ECHOS *Environmental Remediation: Assemblies Cost Book*, 1998 and RS Means Construction Cost Data. Costs were developed in accordance with USEPA Publication No. 9355.0-75, *A Guide to Developing and Documenting*

Cost Estimates During the Feasibility Study, July 2000. This is an order-of-magnitude engineering cost estimate that is expected to be within -30 to +50% of the actual project cost. A more complete breakdown of the cost estimate is provided in Table 5-1.

5. 3 Creek Bottom Soils Alternative C – Removal

This alternative includes the following elements:

- Institutional Controls
- Removal
  - Excavation and On-Site Disposal For Soil Volumes Up To 20,000 CY
  - Excavation and Off-Site Treatment For Soil Volumes In Excess of 20,000 CY
- Monitoring
  - Surface Water Quality
  - Fish Tissue Bioaccumulation

Institutional controls - This alternative includes institutional controls to ensure continued integrity of the on-site containment cell.

Excavation - Removal through excavation is a common practice for managing contaminated soils. Soil excavation has previously been employed for segments of Dead Creek. These removal actions were completed using conventional excavation equipment (e.g. long-stick track, excavator). Removal requires the following related activities.

- Erosion control and storm water management to minimize complications during implementation, to mitigate contaminant transport, and to prevent further erosion following the remedial action. Grading, silt traps, silt fences, pumps and diversion piping will be utilized where necessary to manage water and retain suspended solids.

- For soils removed from wetter locations, local stockpiling of excavated materials may be required to allow for gravity drainage of entrained water. Addition of a solidification agent may also be appropriate. This dewatering will facilitate handling, transportation, treatment and disposal.

- Dewatering of the limited areas of ponded water prior to excavation.

- Treatment of water extracted from isolated pools or expressed from the soils using silt traps to retain suspended solids prior to discharge to the creek.

On-Site Disposal - On-site disposal involves the use of the existing on-Site containment cell constructed for the Time-Critical Sediment Removal Action. This containment cell has approximately 20,000 cubic yards of remaining capacity and would be the initial disposal option for Alternative C.

Ex-Situ Treatment - Ex-situ treatment involves the thermal treatment of Creek bottom soil at an off-Site commercial incinerator. For Alternative C, ex-situ treatment through incineration would be utilized for those soils that could not be disposed of in the on-Site containment cell, due to capacity limitations.

5.3.1 Overall Protection of Human Health and the Environment

Based on the results of the Human Health Risk Assessment, creek bottom soils present no unacceptable risk to humans. Protection of ecological receptors, specifically fish, through elimination of exposure to PCBs and Zinc in creek bottom soil at Creek Segment B Transects T0, T3, T3 and T11 and Zinc in Creek Segment F Transect T5 is warranted based on the results of the Ecological Risk Assessment. Containment of impacted creek bottom soil will protect ecological receptors from adverse impacts. Protection will be achieved by isolating impacted soils beneath an impermeable liner and a layer of rip-rap. This system will prevent direct contact with impacted sediments, and will prevent the transport of sediments via run-off to other potential exposure points. Regular inspection of the containment system will be conducted to ensure that the system remains protective.

Implementation of institutional controls (fencing and warning signs) will protect the integrity of the on-site containment cell.

5.3.2 Compliance with ARARs

A removal alternative, as included in Alternative C, meets the objective of isolating impacted soil, preventing the transport of COCs through run-off and preventing or mitigating aquatic impacts. Because this alternative involves regrading a portion of the channel, provision of additional storm water storage capacity may be necessary to achieve compliance with location-specific ARARs. Sediment removal deepened the channel and may provide all of the increased storm water storage necessary to offset the effect of channel regrading. Creek Bottom Soils

Alternative C will also achieve compliance with action-specific ARARs as well as chemical-specific ARARs.

5.3.3 Long-Term Effectiveness and Permanence

Removal of impacted creek bottom soil will permanently eliminate the potential for exposure to, or transport of, COPCs to the point where aquatic impact is reduced to acceptable levels. As such, the removal alternative will provide greater long-term effectiveness and permanence than the No Action Alternative.

5.3.4 Reduction of Toxicity, Mobility or Volume

This alternative reduces the mobility of contaminants through removal and disposal. Removal also reduces the volume of impacted soils in Dead Creek. The volume and toxicity of COCs are reduced through the incineration of a portion of the impacted soils.

5.3.5 Short-Term Effectiveness

Removal more quickly mitigates the potential for exposure to, or transport of, creek bottom soil in Dead Creek than the No Action Alternative. The time needed to complete the soil removal is expected to be on the order of 6 months.

Implementation of this alternative will present minimal risk to human health and the environment. Potential exposure to COCs while conducting the removal and waste management activities will be controlled by the use of appropriate health and safety procedures.

5.3.6 Implementability

Removal of creek bottom sediments was previously conducted in Dead Creek, and soil removal is readily implementable via the same methods. Removal can be accomplished with readily available materials and equipment. There are currently 20,000 cubic yards of disposal capacity remaining in the on-site containment cell. Excavated soil in excess of this amount would require treatment at an off-site incinerator if land-disposal restrictions were triggered. Only one commercial incineration facility in the United States is currently licensed to accept PCBs and

this facility may have capacity limitations which could be exacerbated by the presence of Zinc in the excavated creek bottom soils.

5.3.7 Cost

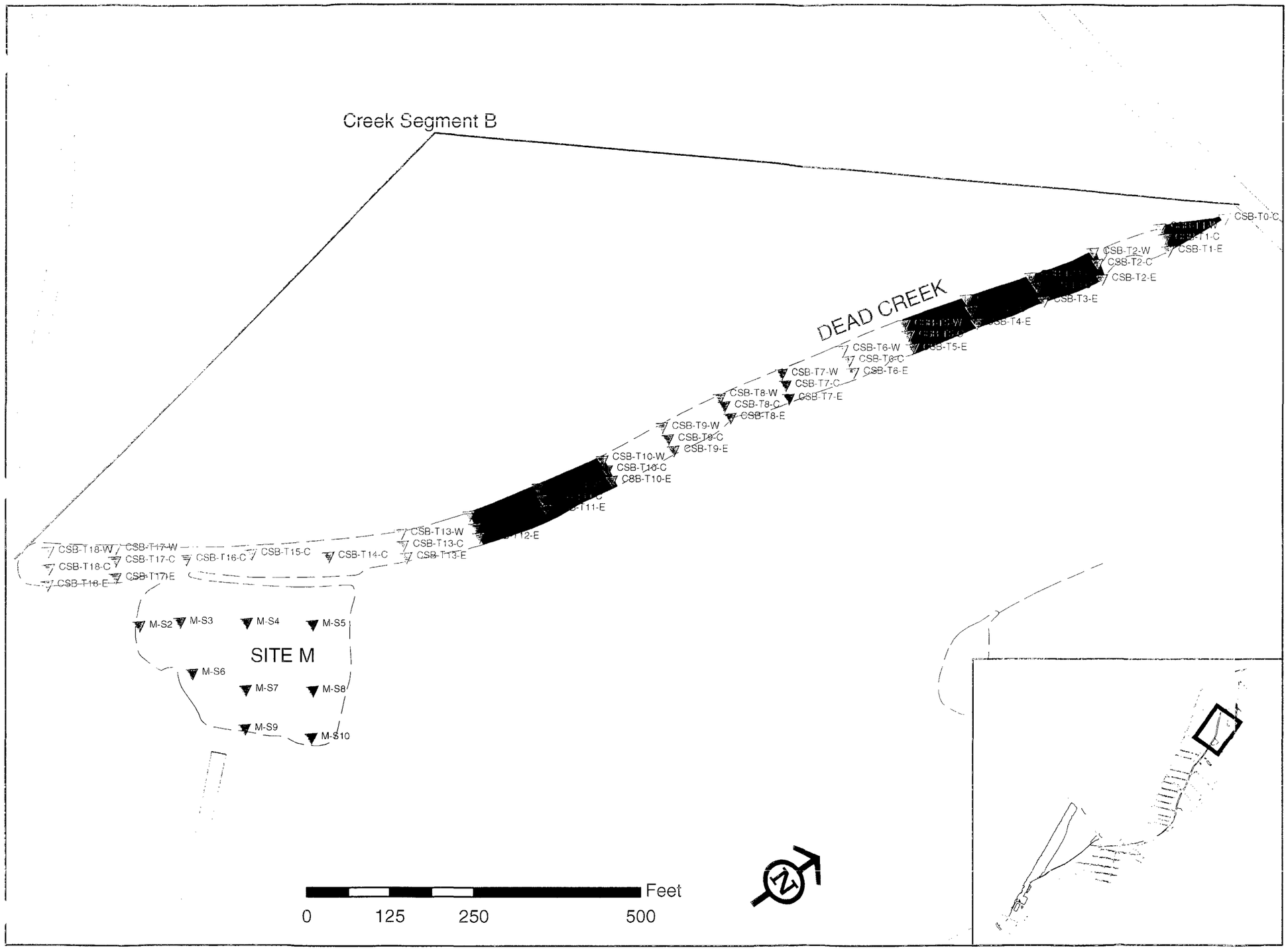
The cost for this alternative, including capital costs, monitoring and reporting costs and annual maintenance costs, on a present value (PV) basis is as follows:

Description	Capital Cost	O&M Cost (PV)	Total Cost (PV)
Institutional Controls	$0	$155,113	$155,113
Removal	6,712,310	196,139	6,909,449
Monitoring	0	453,426	453,426
Total	$6,712,310	$804,678	$7,516,988

The cost presented above is based on continuing corrective action for 30 years, which is considered appropriate for comparative purposes. A discount rate of 7% was used in the cost calculations. Costs were derived primarily from the ECHOS *Environmental Remediation: Assemblies Cost Book*, 1998 and RS means Construction Cost data. Costs were developed in accordance with USEPA Publication No. 9355.0-75, *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study*, July 2000. This is an order-of-magnitude engineering cost estimate that is expected to be within -30 to +50% of the actual project cost. A more complete breakdown of the cost estimate is provided in Table 5-2.

Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 5-1
Creek Segment B
Creek Bottom Soil
Remedial Action Area



LEGEND

- Sample Locations
- Water
- Roads
- Remedial Action Area

Solutia, Inc.
Remediation Technology Group
St. Louis, Missouri

ENSR INTERNATIONAL

June 21, 2002
Revision 0

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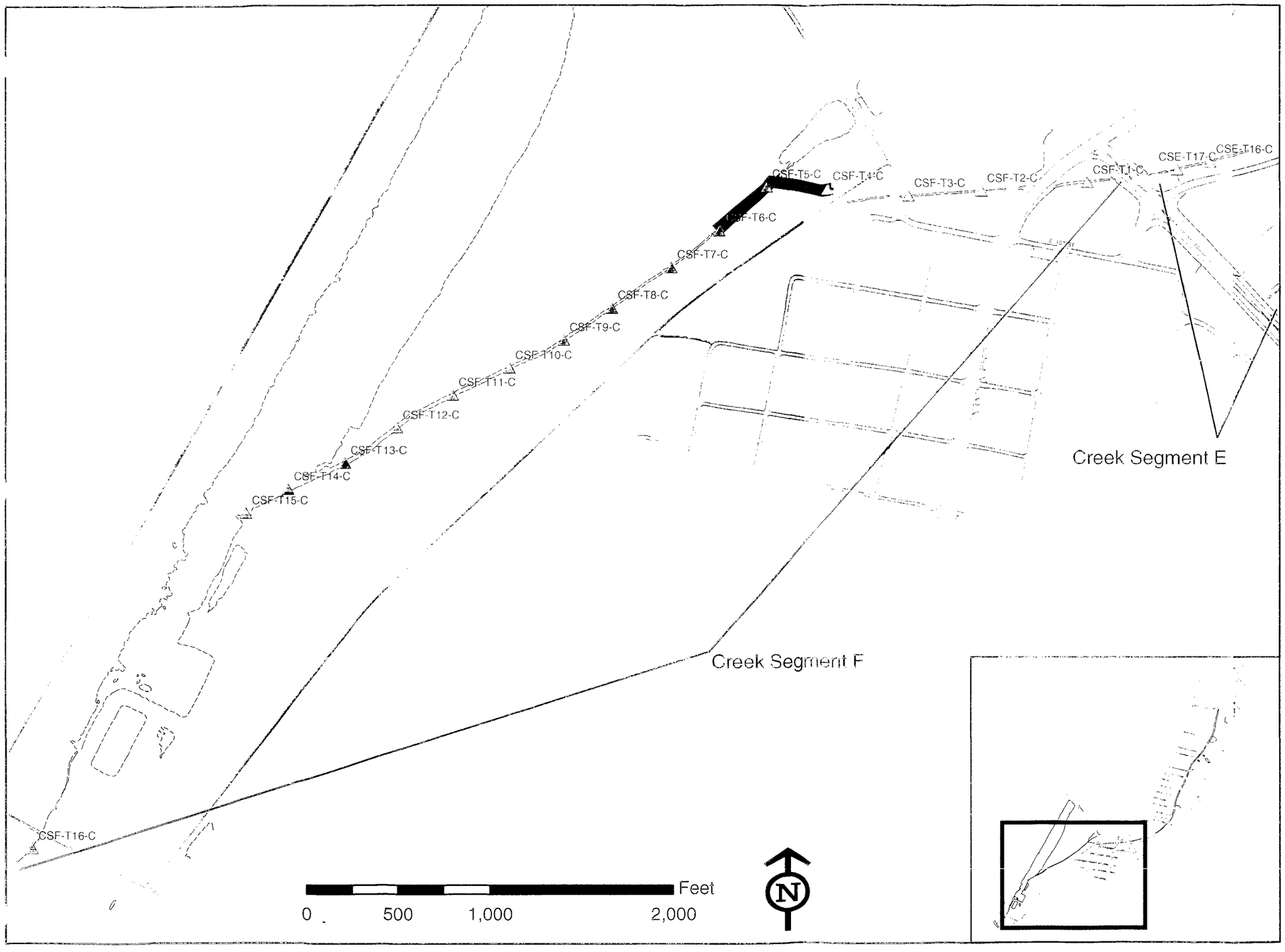
Sauget Area 1
Dead Creek Final Remedy
Creek Bottom Soil
Engineering Evaluation/
Cost Analysis

FIGURE 5-2
Creek Segment F
Creek Bottom Soil
Remedial Action Area



LEGEND

- Sample Locations
- Water
- Roads
- Remedial Action Area

Solutia, Inc.
Remediation Technology Group
St. Louis, Missouri

ENSR INTERNATIONAL

June 21, 2002
Revision 0

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Table 5 - 1

Creek Bottom Soil Alternative B - Containment Cost Estimate

Table 5-1
Alternative B - HDPE Lining & Armoring

	Fish tissue bioaccumulation sampling/analysis	Ea	$18,700	1	$18,700
	Quarterly surface water sampling (six locations)	Ea	$2,500	4	$10,000
	Sample analysis for PCBs (Method 680) and Metals (Method 6010B)	Ea	$245	32	$7,840
	Subtotal, Annual Performance Monitoring				$36,540
		Discount Rate	Period		Present Value
Present Value, 30 yr period		0.07	30		$453,426

O&M Costs	**Channel Maintenance** Item	Unit	Unit Cost	Quantity	Extended Cost
	Channel Maintenance (4% of Lining/Armoring Cost)	LS	4.0%	1	$21,669
	Subtotal, Annual Channel Maintenance				$21,669
		Discount Rate	Period		Present Value
Present Value, 30 yr period		0.07	30		$268,888

Notes:

1. Costs are installed costs and include equipment, labor and materials, unless noted.
   Primary source of cost data: ECHOS Environmental Remediation Cost Data 1998 - Assemblies, unless noted.
   All work done in level D.
2. The Hourly amount needed is based on a production rate of 500 CY per day for the following line items: Crawler Mounted 3.125 yd3 Hydraulic Excavator, Wheel Loader 3.0 yd3 , Transport to Cell (2 Trucks, 1 excavator), Place in Cell: D7 Dozer

FootNotes:

1. Cost taken from RSMeans Heavy Construction Cost Data 2000, Section 02370-300-0100
2. Cost taken from RSMeans Heavy Construction Cost Data 2000, Section 02340-500-1500
3. Cost taken from RSMeans Heavy Construction Cost Data 2000, Section 02620-400-0100
4. Weekly price is for three 6" Diesel Godwin DriPrime Pumps, each with 30' of suction hose and 1,000' of discharge hose.
5. Articulated concrete mat pricing is based on Armorflex Class 30S open cell block. Block dimensions: 1 ft^2 by 4.75 inches thick.Block weight: 32 lbs. per block. Mat sizes: Up to 8 ft x 40 ft.
   Production rate for block placement: between 8,000 and 12,000 ft^2 per day. High strength Geotextile is included in cost ($0.15 per ft^2.)
6. Cost taken from RSMeans Heavy Construction Cost Data 2000, Section 01590-600-1100, the number o days is based on a production rate of 10,000 ft^2 per day.
7. Cost taken from RSMeans Heavy Construction Cost Data 2000, page 395, Crew B-2
8. Cost taken from RSMeans Heavy Construction Cost Data 2000, page 394, Crew A-13

Table 5-1
Alternative B - HDPE Lining & Armoring

Capital Costs	**Rip Rap Installation**	Unit	Unit Cost	Quantity	Extended Cost
	Personnel Mobilization (0.5% of Construction Cost)	LS	0.5%	1	$867
	Equpment Mobilization/Demob (1.0% of Construciton Cost)	LS	1.0%	1	$1,733
	Performance Bond (3.0% of Construction Cost)	LS	3.0%	1	$5,199
	Rip Rap (Material & Labor)(1)	CY	$39.00	4,444	$173,316
	Engineering (10% of Construction Cost)	LS	10.0%	1	$17,332
	Construction Management (10% of Construction Cost)	LS	10.0%	1	$17,332
	Subtotal:				$215,778

Capital Costs	**Water Management** Item:	Unit	Unit Cost	Quantity	Extended Cost
	Personnel Mobilization (0.5% of Construction Cost)	LS	0.5%	1	$265
	Equpment Mobilization/Demob (1.0% of Construciton Cost)	LS	1.0%	1	$529
	Performance Bond (3.0% of Construction Cost)	LS	3.0%	1	$1,588
	Three 6" Centrifugal Pump(1)	WK	$5,500	4	$22,000
	Labor (1 equip. operator, light), three 8 hours shifts per day, 7 days per week(8)	DY	$1,008	28	$28,224
	Silt Fence (Material & Labor)(2)	LF	$0.68	4,000	$2,720
	Engineering (10% of Construction Cost)	LS	10.0%	1	$5,294
	Construction Management (10% of Construction Cost)	LS	10.0%	1	$5,294
	Subtotal:				$65,915

O&M Costs	**Institutional Controls** Item	Unit	Unit Cost	Quantity	Extended Cost
	Annual Inspection, Report	Ea	$2,500	1	$2,500
	Annual Fencing, Signage Repairs	Ea	$5,000	1	$5,000
	Annual Public Meetings, Information Distribution	Ea	$5,000	1	$5,000
	Subtotal, Annual Institutional Controls				$12,500
		Discount Rate	Period		Present Value
Present Value, 30 yr period		0.07	30		$155,113

O&M Costs	**Performance Monitoring** Item	Unit	Unit Cost	Quantity	Extended Cost

Table 5-1
Alternative B - HDPE Lining & Armoring

ital s	**HDPE Liner Installation** Item:	Unit	Unit Cost	Quantity	Extended Cost
	Personnel Mobilization (0.5% of Construction Cost)	LS	0.5%	1	$880
	Equpment Mobilization (1.0% of Construction Cost)	LS	1.0%	1	$1,760
	Performance Bond (3.0% of Construction Cost)	LS	3.0%	1	$5,280
	Liner (40 mil HDPE, Material & Labor)[3]	SF	$0.40	220,000	$88,000
	Geotextile (2 layers)	SF	$0.20	440,000	$88,000
	Engineering (10% of Construction Cost)	LS	10.0%	1	$17,600
	Construction Management (10% of Construction Cost)	LS	10.0%	1	$17,600
	Subtotal:				$219,120

Capital Costs	**Articulated Concrete Mat Installation**	Unit	Unit Cost	Quantity	Extended Cost
	Personnel Mobilization (0.5% of Construction Cost)	LS	0.5%	1	$697
	Equpment Mobilization/Demob (1.0% of Construction Cost)	LS	1.0%	1	$1,395
	Performance Bond (3.0% of Construction Cost)	LS	3.0%	1	$4,184
	75 Ton Track Crane (Equipment & Operator)[6]	DY	$939.20	4	$3,757
	Labor (1 foreman, 4 laborers)[7]	DY	$1,425.20	4	$5,701
	Armorflex (Material & Delivery)[5]	SF	$3.25	40,000	$130,000
	Engineering (10% of Construction Cost)	LS	10.0%	1	$13,946
	Construction Management (10% of Construction Cost)	LS	10.0%	1	$13,946
	Subtotal:				$173,625

Table 5-1
Alternative B - HDPE Lining & Armoring

Summary		
Capital	Site/Subbase Preparation	$464,781
	HDPE Liner Installation	$219,120
	Articulated Concrete Mat Installation	$173,625
	Rip Rap Installation	$215,778
	Water Management/Erosion Control	$65,915
	Subtotal, Capital Costs	**$1,139,220**
O&M (PV)	Institutional Controls	$155,113
	Performance Monitoring	$453,426
	Liner/Armor Maintenance	$268,888
	Subtotal, O&M Costs, Present Value	**$877,427**
	Total Costs:	**$2,016,647**

Capital Costs	**Site Preparation** Item:	Unit	Unit Cost	Quantity	Extended Cost
	Mobilization				
	Personnel Mobilization (0.5% of Construction Cost)	LS	0.5%	1	$1,867
	Equipment Mobilization/Demob (1.0% of Construction Cost)	LS	1.0%	1	$3,733
	Performance Bond (3.0% of Construction Cost)	LS	3.0%	1	$11,200
	Channel Contouring/Cut Back				
	Crawler Mounted 3.125 yd^3 Hydraulic Excavator	Hr	$297.97	65	$19,423
	Wheel Loader 3.0 yd^3	Hr	$145.64	65	$9,493
	On-Site Disposal (0 - 20,000 CY)				
	Cell Design & Construction	CY	$67.42	4,074	$274,669
	Stabilize Wet Wastes (10% of Cell Disposal Volume)	CY	$100.00	407	$40,740
	Transport to Cell (2 Trucks, 1 excavator)	Hr	$80.05	65	$5,218
	Place in Cell: D7 Dozer	Hr	$242.11	65	$15,782
	Intermediate Cover (20% of Cell Disposal Volume)	CY	$9.81	815	$7,993
	Engineering (10% of Construction Cost)	LS	10.0%	1	$37,332
	Construction Management (10% of Construction Cost)	LS	10.0%	1	$37,332
	Subtotal:				$464,781

Table 5 - 2

Creek Bottom Soil Alternative C - Removal Cost Estimate

Table 5-2
Alternative C - Excavation & Disposal

Summary		
Capital	Excavation & Disposal	$6,523,185
	Water Management/Erosion Control	$189,126
	Subtotal, Capital Costs	**$6,712,310**
O&M (PV)	Institutional Controls	$155,113
	Performance Monitoring	$453,426
	Channel Maintenance	$196,139
	Subtotal, O&M Costs, Present Value	**$804,678**
	Total Costs:	**$7,516,989**

Capital Costs	**Excavation and Disposal** Item:	Unit	Unit Cost	Quantity	Extended Cost
	Mobilization				
	Personnel Mobilization (0.5% of Construction Cost)	LS	0.5%	1	$26,198
	Equipment Mobilization/Demob (1.0% of Construciton Cost)	LS	1.0%	1	$52,395
	Performance Bond (3.0% of Construction Cost)	LS	3.0%	1	$157,185
	Excavation				
	Crawler Mounted 3.125 yd^3 Hydraulic Excavator	Hr	$297.97	474	$141,262
	Wheel Loader 3.0 yd^3	Hr	$145.64	474	$69,045
	Site Restoration				
	Unclassified Fill	CY	$9.81	29,630	$290,670
	Dozer (200 H.P., 150' haul)(3)	CY	$2.67	29,630	$79,112
	Compaction (12" lift, 4 passes)(4)	CY	$0.35	29,630	$10,371
	Revegetation	SF	$0.15	100,000	$15,000
	On-Site Disposal (0 - 20,000 CY)				
	Cell Design & Construction	CY	$67.42	20,000	$1,348,400
	Stabilize Wet Wastes (10% of Cell Disposal Volume)	CY	$100.00	2,000	$200,000
	Transport to Cell (2 Trucks, 1 excavator)	Hr	$80.05	320	$25,616
	Place in Cell: D7 Dozer	Hr	$242.11	320	$77,475
	Intermediate Cover (20% of Cell Disposal Volume)	CY	$9.81	4,000	$39,240
	Off-SiteTSCA Landfill (>20,000 CY)				
	Transportation (to Lone Mountain, OK)	Load-miles	$3.00	371,205	$1,113,615
	TSCA Landfill	Tons	$120.00	14,445	$1,733,400
	Stabilize Wet Wastes (10% of Transportation & Incineration Volume)	CY	$100.00	963	$96,300
	Allowances				
	Engineering (10% of Construction Cost)	LS	10.0%	1	$523,951
	Construction Management (10% of Construction Cost)	LS	10.0%	1	$523,951
	Subtotal:				$6,523,185

Table 5-2
Alternative C - Excavation & Disposal

Capital Costs	**Water Management** Item:	Unit	Unit Cost	Quantity	Extended Cost
	Mobilization				
	Personnel Mobilization (0.5% of Construction Cost)	LS	0.5%	1	$760
	Equpment Mobilization/Demob (1.0% of Construciton Cost)	LS	1.0%	1	$1,519
	Performance Bond (3.0% of Construction Cost)	LS	3.0%	1	$4,557
	Water Management				
	Three 6" Centrifugal Pump[1]	WK	$5,500	12	$66,000
	Labor (1 equip. operator, light), three 8 hours shifts per day, 7 days per week[8]	DY	$1,008	84	$84,672
	Silt Fence (Material & Labor)[2]	LF	$0.68	1,818	$1,236
	Allowances				
	Engineering (10% of Construction Cost)	LS	10.0%	1	$15,191
	Construction Management (10% of Construction Cost)	LS	10.0%	1	$15,191
	Subtotal:				$189,126

O&M Costs	**Institutional Controls** Item	Unit	Unit Cost	Quantity	Extended Cost
	Annual Inspection, Report	Ea	$2,500	1	$2,500
	Annual Fencing, Signage Repairs	Ea	$5,000	1	$5,000
	Annual Public Meetings, Information Distribution	Ea	$5,000	1	$5,000
	Subtotal, Annual Institutional Controls				$12,500
		Discount Rate	Period		Present Value
Present Value, 30 yr period		0.07	30		$155,113

O&M Costs	**Performance Monitoring** Item	Unit	Unit Cost	Quantity	Extended Cost
	Fish tissue bioaccumulation sampling/analysis	Ea	$18,700	1	$18,700
	Quarterly surface water sampling (six locations)	Ea	$2,500	4	$10,000
	Sample analysis for PCBs (Method 680) and Metals (Method 6010B)	Ea	$245	32	$7,840
	Subtotal, Annual Performance Monitoring				$36,540
		Discount Rate	Period		Present Value
Present Value, 30 yr period		0.07	30		$453,426

O&M Costs	**Channel Maintenance** Item	Unit	Unit Cost	Quantity	Extended Cost
	Channel Maintenance (4% of Site Restoration Cost)	LS	4.0%	1	$15,806
	Subtotal, Annual Channel Maintenance				$15,806

Table 5-2
Alternative C - Excavation & Disposal

	Discount Rate	Period	Present Value
sent Value, 30 yr period	0.07	30	$196,139

Notes:

1. Costs are installed costs and include equipment, labor and materials, unless noted.
   Primary source of cost data: ECHOS Environmental Remediation Cost Data 1998 - Assemblies, unless noted.
   All work done in level D.

Footnotes:

1. Weekly price is for three 6" Diesel Godwin DriPrime Pumps, each with 30' of suction hose and 1,000' of discharge hose.
2. Cost taken from RSMeans Heavy Construction Cost Data 2000, Section 02370-550-1000
3. Cost taken from RSMeans Heavy Construction Cost Data 2000, Section 02315-410-4220
4. Cost taken from RSMeans Heavy Construction Cost Data 2000, Section 02315-300-5100

Section 6

6.0 COMPARATIVE ANALYSIS OF INTERIM REMEDIAL ALTERNATIVES

In the following sections, Creek Bottom Soil Remedial Alternatives A (No Action), B (Containment) and C (Excavation and Disposal) are compared to one another to identify the relative advantages and disadvantages of each. A forced ranking system was used to identify the alternative that best achieves the requirements of the seven evaluation criteria used to evaluate remedial alternatives. In this forced ranking system, the alternative that best meets the requirements of a criterion was awarded a score of 1, the second best alternative was awarded a score of 2 and the third best alternative was awarded a score of 3. Using this ranking method, the alternative with the lowest score is the one that best meets the requirements of the seven criteria. The comparative analysis is summarized in the following table:

	Alternative A (No Action)	Alternative B (Containment)	Alternative C (Removal)
Threshold Criteria			
• Overall Protection of Human Health and the Environment	3	1	2
• Compliance with ARARs	3	2	1
Subtotal	**6**	**3**	**3**
Balancing Criteria			
• Long-term Effectiveness and Permanence	3	1	2
• Reduction of Toxicity, Mobility or Volume Through Treatment	3	2	1
• Short-Term Effectiveness	3	1	2
• Implementability	1	2	3
• Cost	1	2	3
Subtotal	**11**	**8**	**11**
Total Score	**17**	**11**	**14**

While Alternative A is clearly in lower cost and more readily implementable, Alternatives B and C are more effective short term and are the better alternatives for protecting public health and the environment, complying with ARARs, providing long-term effectiveness and permanence and reducing mobility, toxicity or volume. Alternative B scores higher than Alternative C because it provides greater long-term effectiveness and permanence by preventing the discharge of impacted groundwater from Sites G, H and L into Creek Segment B. Alternative C provides more reduction of mobility, toxicity and volume than Alternative B. Alternative B and Alternative C can both achieve compliance with ARARs. Alternative C (Removal) is considered to be better able to achieve ARARs than Alternative B (Containment). Alternative B provides effective protection of public health and the environment at a lower cost than Alternative C.

6.1 Overall Protection of Human Health and the Environment

Alternative A does not provide for additional protection of human health and the environment, but is already adequately protective of human health based on the risk assessment.

Alternative B provides for protection of human health and the environment by installing physical barriers in CS-B and CS-F to isolate impacted soils from ecological receptors and to reduce the transport of COCs via storm water. All of Creek Segment B (1,800 ft.) will be lined to comply with the requirements of the Sauget Area 1 Sediment Removal Action UAO and to isolate impacted creek bottom soils and to prevent the discharge of impacted groundwater from Sites G, H and L to Creek Segment B. An 800 ft. long liner will be installed in Creek Segment F, starting at the downstream side of the Terminal Railroad embankment, to isolate impacted soils from the environment. These composite liners will be comprised of a nonwoven geotextile base layer, a 40-mil HDPE liner, a nonwoven geotextile protective layer and rip-rap armoring. Alternative B is more protective of human health and the environment than Alternative A.

Alternative C provides for protection of human health by removal of COCs from Creek Segments B and F. This removal will eliminate exposure to ecological receptors and allow for the subsequent isolation (in the on-site containment cell) or destruction (through off-site incineration and land disposal) of COCs. Alternative C entails removal of 29,630 cubic yards of creek bottom soil from a total of 1,400 linear feet of Dead Creek (CS-B Transects T0 to T1, T2 to T5 and T10 to T12 and CS-F Transects T4 to T6).

Since soil volumes exceed the available 20,000 cy capacity of the on-site containment cell, the excess volume (9,630 cy) will be transported to a commercial incineration facility permitted to treat PCBs and the other constituents present in the excavated soil. Alternative C is less protective of human health and the environment than Alternative B because impacted groundwater from Sites G, H and L may discharge to Creek Segment B during periods of high groundwater levels, subsequently re-contaminating creek bottom soils and potentially resulting in downstream migration of contaminants via the surface water pathway.

6.2 Compliance with ARARs

Alternative B and Alternative C achieve compliance with ARARs.

6.3 Long-Term Effectiveness and Permanence

Alternative A provides no long-term effectiveness and permanence. Alternative B provides more long-term effectiveness and permanence than Alternative C because it prevents the discharge of impacted groundwater to surface water in Creek Segment B.

6.4 Reduction of Toxicity, Mobility or Volume through Treatment

Alternative A relies on natural processes to reduce the toxicity, mobility and volume of contaminants. Alternative B reduces the mobility of contaminants by physical containment of creek bottom soils. Alternative C reduces the mobility of contaminants through the removal of creek bottom soils. In the long term, both Alternative B and Alternative C also reduce the toxicity and volume of soil contaminants through the action of natural processes, such as biodegradation, adsorption, dilution and chemical reactions with subsurface materials. However, Alternative C is more effective than Alternative B at reducing the toxicity and volume of soil contaminants through its use of incineration of a portion of the material. Both Alternatives B and C are more effective than Alternative A in reducing toxicity, mobility or volume. However Alternative C reduces toxicity, mobility and volume more than Alternative B because it relies on removal and treatment instead of containment.

6.5 Short-Term Effectiveness

Alternative A is not effective in controlling threats to public health and the environment in the short term because it relies on long-term, natural processes to reduce the adverse impacts associated with creek bottom soils. Natural processes will not reduce adverse impacts to ecological receptors in the short term due to the nature of COCs.

Alternative B addresses the adverse impacts resulting from groundwater discharge to surface water in CS-B by the addition of physical containment of the entire creek segment. Alternative C does not address the impact of groundwater discharge to surface water adjacent to Sites G, H and L. Alternative B more quickly mitigates the adverse surface water impacts resulting from transport of creek bottom soil COCs than Alternative C because of the faster implementation time frame. A temporary impermeable liner was installed in the northern 500 ft. of CS-B after completion of sediment removal to prevent the discharge of impacted groundwater from Sites G, H and I. Nonwoven geotextile was installed in the remainder of Creek Segment B to prevent entrainment of creek bottom soils during storm events. Consequently, Alternative B is more effective in the short term than Alternative C.

Implementation of Alternative B and Alternative C pose minimal short-term risk to human health and the environment.

6.6 Implementability

Alternative A is more readily implementable than Alternative B or Alternative C because no action is required to implement this alternative. Alternative B can be implemented more readily than Alternative C because a temporary liner is already in place in Creek Segment B and a channel liner design for this creek segment was included in the June 30, 2000 Dead Creek Sediment and Soil Time Critical Removal Action Work Plan (Figures 6-1, 6-2 and 6-3). Both of these alternatives are implementable with conventional materials and equipment. Alternative C requires the availability of an incinerator permitted for the disposal of PCBs for the management of creek bottom soil in excess of the remaining capacity in the on-site containment cell. There is only one incinerator in the United States that is permitted to accept PCBs, and this facility may have significant capacity limitations. In addition, soil removed from Creek Segment B will have zinc concentrations ranging from 2,000 to 7,000 ppm while excavated soil from CS-F will have concentrations ranging from 1,100 to 15,000 ppm. Volatile metal concentrations this high may

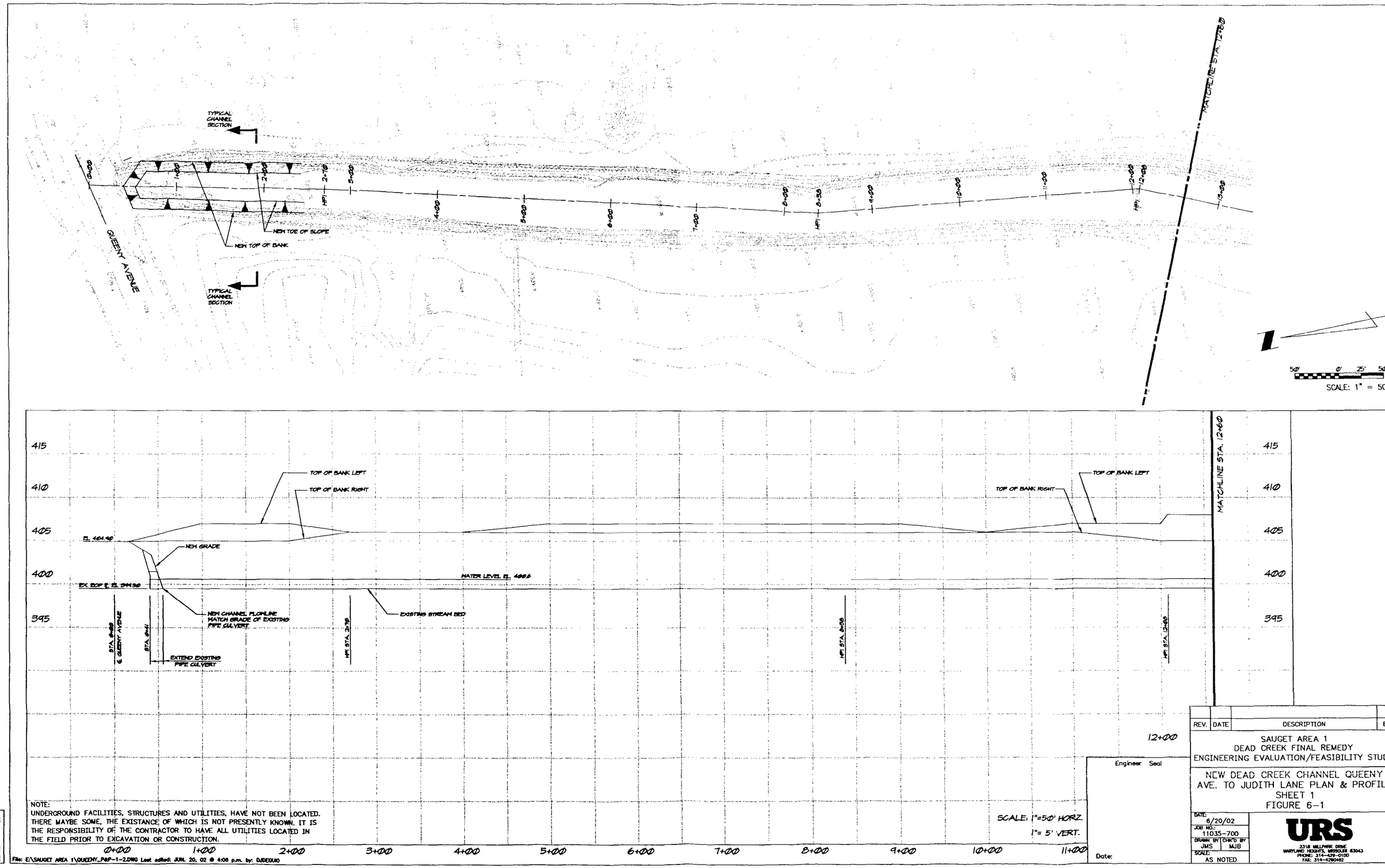
overload incinerator air emission control systems. If so, blending may be required to meet air emission limits for metals and treatment time (and cost) may increase.

6.7 Cost

No costs are associated with Alternative A. Alternative B ($2,016,647) is less expensive than Alternative C ($7,516,988) on a 30-year present value basis and provides similar protection of public health and the environment.

Estimated costs for each alternative are summarized below:

Project Element	Alternative B (Containment)	Alternative C (Removal)
Institutional Controls	155,113	155,113
Monitoring	453,426	453,426
Remedial Action	1,139,220	6,712,310
Operation and Maintenance	268,888	196,139
30-Year Present Value Cost	$2,016,647	$7,516,988



NOTE:
UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES, HAVE NOT BEEN LOCATED. THERE MAYBE SOME, THE EXISTANCE OF WHICH IS NOT PRESENTLY KNOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UTILITIES LOCATED IN THE FIELD PRIOR TO EXCAVATION OR CONSTRUCTION.

REV.	DATE	DESCRIPTION	BY

SAUGET AREA 1
DEAD CREEK FINAL REMEDY
ENGINEERING EVALUATION/FEASIBILITY STUDY

NEW DEAD CREEK CHANNEL QUEENY AVE. TO JUDITH LANE PLAN & PROFILE
SHEET 1
FIGURE 6-1

Engineer Seal

Date:

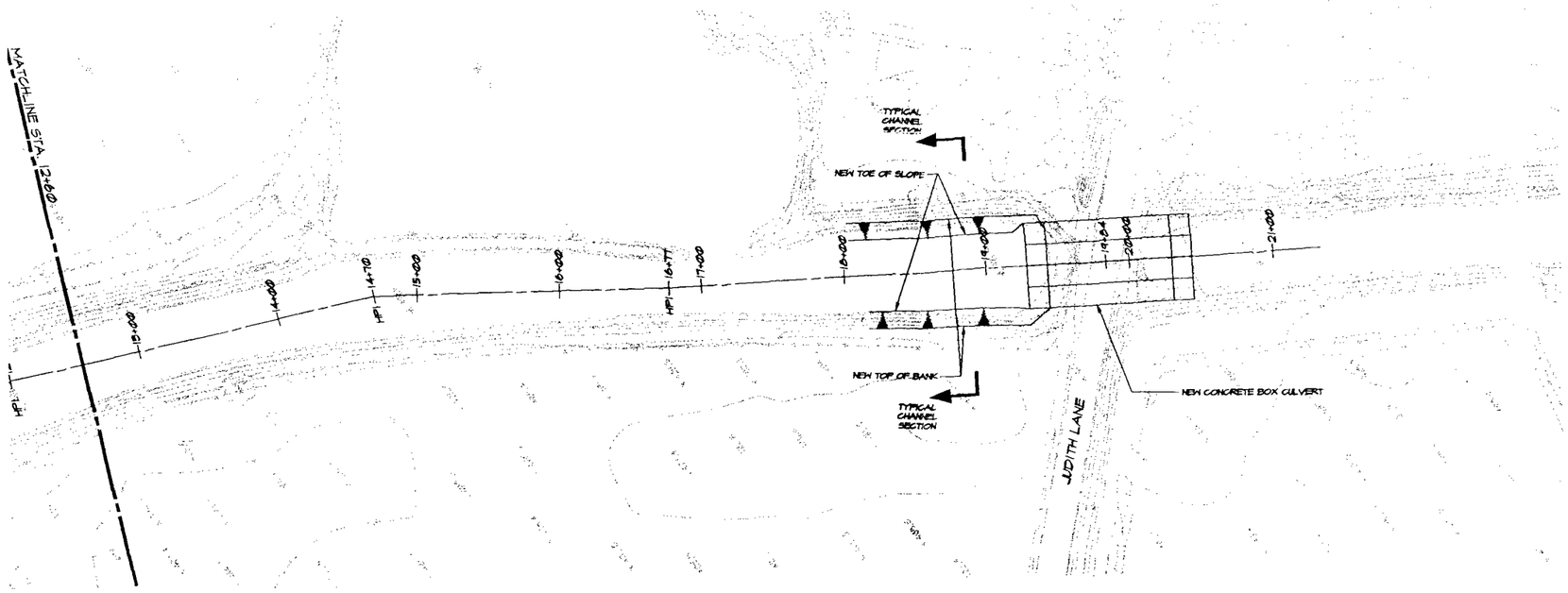
DATE: 6/20/02
JOB NO.: 11035-700
DRAWN BY: JMS
CHK'D BY: MJB
SCALE: AS NOTED

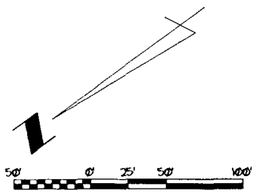
URS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MISSOURI 63043
PHONE: 314-429-0100
FAX: 314-4290462

PLOT
PAPER SIZE:
ROTATION:
SCALE: 1=20

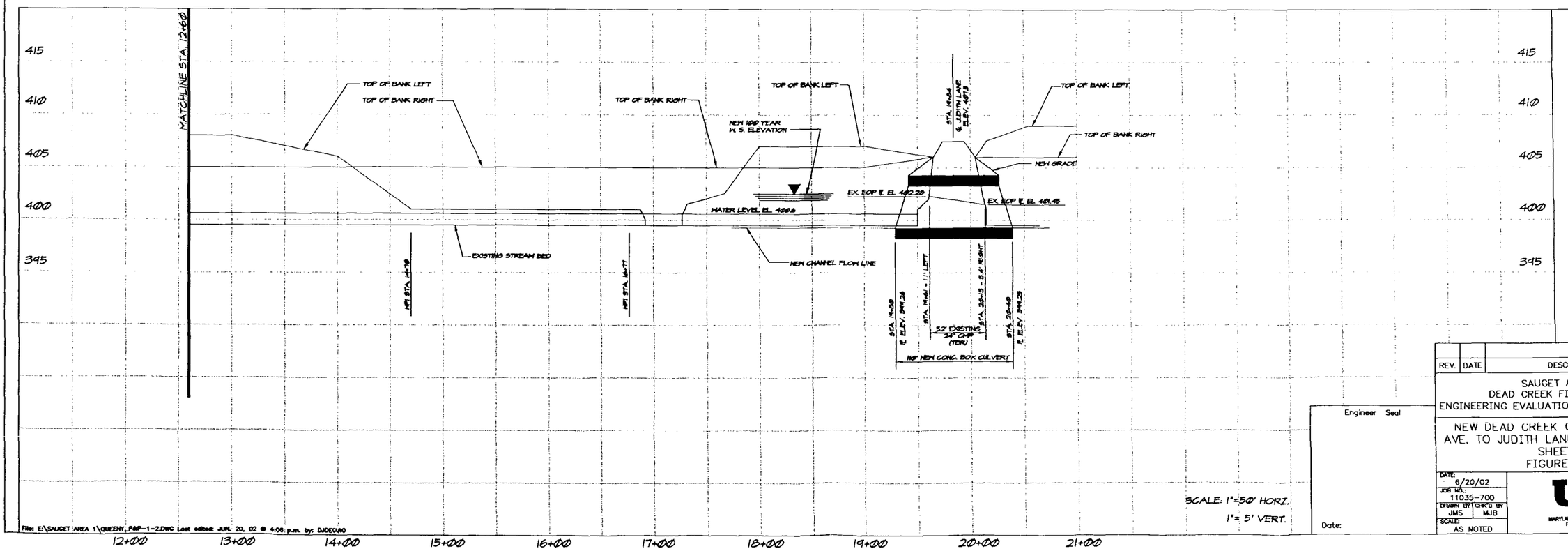
File: E:\SAUGET AREA 1\QUEENY_P&P-1-2.DWG Last edited: JUN. 20, 02 @ 4:06 p.m. by: DJDEGUIO

NOTE:
UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES, HAVE NOT BEEN LOCATED. THERE MAYBE SOME, THE EXISTANCE OF WHICH IS NOT PRESENTLY KNOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UTILITIES LOCATED IN THE FIELD PRIOR TO EXCAVATION OR CONSTRUCTION





SCALE: 1" = 50'



SCALE: 1"=50' HORZ.
1"= 5' VERT.

Engineer Seal

Date:

REV.	DATE	DESCRIPTION	BY

SAUGET AREA 1
DEAD CREEK FINAL REMEDY
ENGINEERING EVALUATION/FEASIBILITY STUDY

NEW DEAD CREEK CHANNEL QUEENY AVE. TO JUDITH LANE PLAN & PROFILE
SHEET 2
FIGURE 6-2

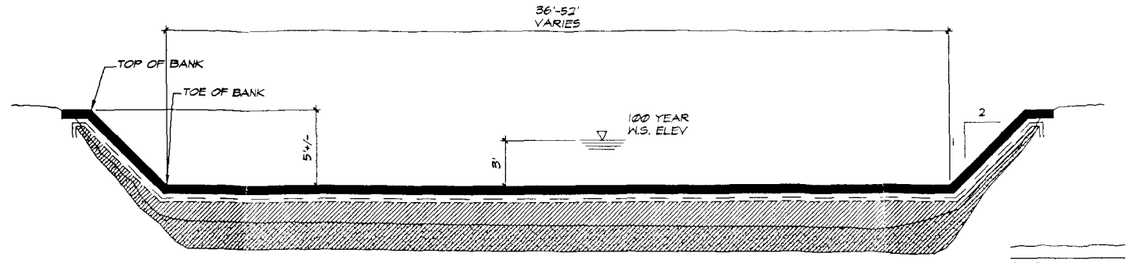
DATE: 6/20/02
JOB NO.: 11035-700
DRAWN BY: JMS
CHK'D BY: MJB
SCALE: AS NOTED

URS
2316 MILLPARK DRIVE
MARYLAND HEIGHTS, MISSOURI 63043
PHONE: 314-429-0100
FAX: 314-429-0462

PLOT DATA
PAPER SI
ROTATION:
SCALE:

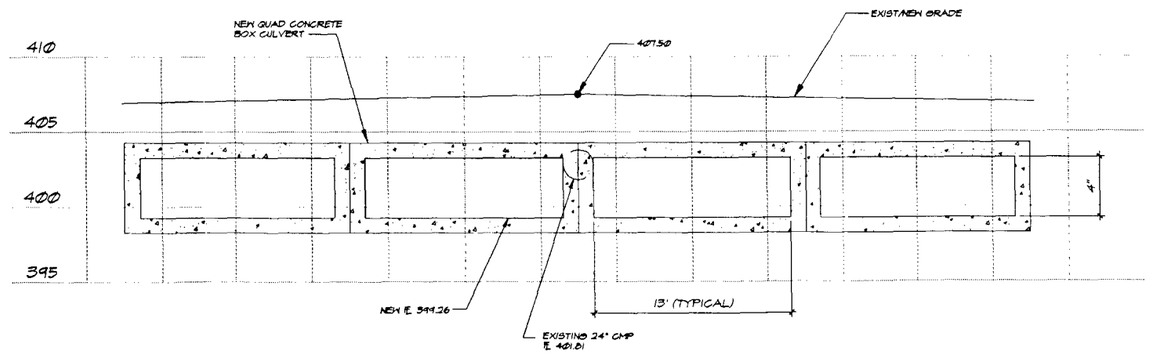
File: E:\SAUGET AREA 1\QUEENY_P&P-1-2.DWG Last edited: JUN. 20, 02 @ 4:06 p.m. by: DUDEQUAO

SITE LOCATION
NOT TO SCALE

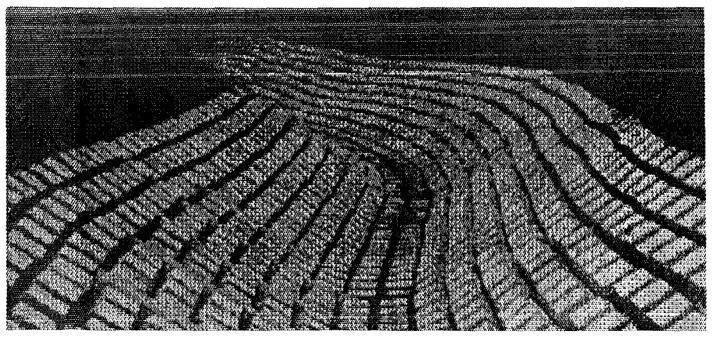


TYPICAL CHANNEL SECTION
SCALE: 1" = 5'

LEGEND
- EXISTING CHANNEL BOTTOM
- SEDIMENT TO BE REMOVED
- CLEAN FILL
- HDPE LINER (40 MIL)
- GEOTEXTILE FABRIC
- ARTICULATED CONCRETE MAT



CULVERT SECTION AT JUDITH LANE
SCALE: 1" = 5'



TYPICAL ARTICULATED CONCRETE MAT

REV.	DATE	DESCRIPTION	BY

SAUGET AREA 1
DEAD CREEK FINAL REMEDY
ENGINEERING EVALUATION/FEASIBILITY STUDY

NEW DEAD CREEK CHANNEL QUEENY AVE. TO JUDITH LANE DETAILS
SHEET 3
FIGURE 6-3

Engineer Seal

Date:

DATE: 6/20/02
JOB NO.: 11035-700
DRAWN BY: JMS
CHK'D BY: MJB
SCALE: AS NOTED

URS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MISSOURI 63043
PHONE: 314-429-0100
FAX: 314-4290462

PLAN
NOTE BOOK NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE

PROFILE
NOTE BOOK NO.
SURVEYED
PLOTTED
GRADES CHECKED
B.M.s NOTED
BY
DATE
STRUCTURE NOTATIONS CHKD.

PLOT C
PAPER SIZE: E
ROTATION: 0
SCALE: 1=20

File: E:\SAUGET AREA 1\DETAILSHEET SHEET_3.DWG Last edited: JUN. 20, 02 @ 3:19 p.m. by: DJDEGUIO