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February 13, 1998

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Transmittal, Phase 2 Report - RCRA Facility Investigation and Extent of

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Dear Sirs:

Enclosed, please find copies of the referenced report. If you have any questions regarding the enclosed report, please call me at (402) 271-5979.

Sincerely,

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# Phase 2-A Report RCRA Facility Investigation and Extent of Contamination Investigation

Houston Wood Preserving Works Houston, Texas

February 13, 1998 W.O. #422-09

ERM-SOUTHWEST, INC.

16300 Katy Freeway, Suite 300 Houston, Texas 77094-1611 (281) 579-8999



# Phase 2-A Report RCRA Facility Investigation and Extent of Contamination Investigation

Houston Wood Preserving Works Houston, Texas

February 13, 1998

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#### **EXECUTIVE SUMMARY**

This report documents Phase 2-A of a permit-required RCRA facility investigation (RFI) to investigate solid waste management units and areas of concern, and an Extent of Contamination (EOC) investigation completed as part of post-closure care for a former surface impoundment at the Houston Wood Preserving Works site in Houston, Texas. The site was utilized for wood treating operations until 1985, and is currently utilized for railroad storage.

As part of the investigations, the site has been segregated into four areas:
1) Off-Site Drainage Area; 2) Tie Storage Area; 3) Former Process Areas; and 4)
Closed Surface Impoundment. The Phase 2-A activities were completed in accordance with the scope and methods described in Section 5.0 of the Phase 1 report. The scope of Phase 2-A included the following:

- completion of seven deep soil borings, eleven monitor wells, eight CPT soundings, and five Hydropunch points;
- collection of 45 surface soil samples, 68 subsurface soil samples, and 20 ground water samples;
- leachability and geotechnical analyses of soil samples; and
- aquifer slug tests to measure hydraulic conductivity.

The site is underlain mostly by clay, with two continuous and one discontinuous sandy transmissive zones present within the upper 100 feet. Ground water in the upper two transmissive zones appears to flow away (radially) from a relative ground water high in the southwest corner of the site with Darcian velocities on the order of 1 ft/yr. Ground water in the third transmissive zone flows east-southeast with a Darcian velocity on the order of 1 ft/yr.

Site conditions were assessed relative to benchmark quantitation limits in order to develop an understanding of potential impacts to soil and ground water. Soil impacts were observed throughout portions of the soil column in the Off-site Drainage Area, the Tie Storage Area and the Former Process Areas. Ground water impacts were observed within the two upper transmissive zones near the Off-site Drainage Area, the Tie Storage Area, the Former Process Areas, and the Closed Surface Impoundment Area. Minor ground water impacts were observed within the third transmissive zone near the Former Process Areas. Ultimately, the extent of affected media will be determined relative to site-specific concentration limits.

Future activities include development of a Risk Reduction Implementation Plan (RRIP). The RRIP will include a work plan for completing Phase 2 and will describe the conceptual approach to implementing the Risk Reduction Standards to help determine appropriate corrective measures.

#### 1.0 INTRODUCTION

ERM-Southwest, Inc. has prepared this report to document the results of Phase 2-A of a RCRA Facility Investigation (RFI) and an Extent of Contamination (EOC) investigation. The RFI is being completed at the former Houston Wood Preserving Works (HWPW) site pursuant to Texas Natural Resource Conservation Commission (TNRCC) Permit No. HW-50343-000 issued to Southern Pacific Transportation Company (SPTCo) on June 20, 1994. Concurrent with the RFI, the EOC investigation is being completed in the area of a closed permitted surface impoundment pursuant to TNRCC Compliance Plan CP-50343-000 issued to SPTCo on June 20, 1994.

The site consists of a 33-acre tract of land located at 4910 Liberty Road, Houston, Harris County, Texas. The site is approximately 1.5 miles northeast of the intersection of U.S. Highway 59 and Interstate Highway 10 (Figure 1-1).

The site was utilized for wood treating operations until 1985, and is currently utilized for railroad storage and other railroad operations. Based on the conclusions of a RCRA Facility Assessment completed on behalf of the U.S. EPA (PRC EMI, 1993) and as described in Provision VIII of the permit, ten solid waste management units (SWMUs) and six areas of concern (AOCs) are subject to the RFI. The EOC investigation is part of the post-closure care requirements described in Section VIII of the Compliance Plan.

#### 1.1 SITE HISTORY

An RFI Work Plan was submitted to the TNRCC (IC, 1994d) and subsequently approved with modifications on October 16, 1995. Based on the technical approach described in the work plan, the ten SWMUs and two AOCs listed below are subject to investigation. The locations of the SWMUs and AOCs are shown on Figure 1-2.

SWMU/AOC No.	Description
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of the Former UST No. 44-023-05
SWMU 10	Location of the Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 6	Inactive Wastewater Lagoon

An EOC Work Plan was also submitted to the TNRCC (IC, 1994c) and subsequently approved with modifications on September 29, 1995. For the RFI/EOC, the site was grouped into the four investigation areas listed below. The locations of the four areas are shown on Figure 1-3.

Area No.	Area Name	SWMU/AOC Included
Area 1	Off-Site Drainage Area	SWMU 2, AOC 6
Area 2	Tie Storage Area	SWMU 12
Area 3	Former Process Area	SWMU 4, SWMU 5, SWMU 6,
		SWMU 7, SWMU 8, SWMU 9,
		SWMU 10, SWMU 11, AOC 1
Area 4	Former Surface Impoundment	closed permitted unit

The following list is a summary of significant documents relating to the RFI/EOC Investigations, and dates of submittals and approvals (if appropriate). Also, an upcoming schedule of activities and tentative submittals to be performed at the site is included.

Date	Description
October 1993	RCRA Facility Assessment completed on behalf of U.S. EPA
June 20, 1994	Permit No. HW-50343-000 and Compliance Plan CP-50343-000 issued by TNRCC
August 19, 1994	Operation and Maintenance Plan and Compliance Schedule submitted on behalf of SPTCo
September 7, 1994	Revised Compliance Schedule submitted on behalf of SPTCo
September 16, 1994	EOC Work Plan submitted on behalf of SPTCo
October 14, 1994	RFI Work Plan submitted on behalf of SPTCo
November 3, 1994	Revised Compliance Schedule approved by TNRCC
January 10, 1995	Operation and Maintenance Plan approved by TNRCC
September 29, 1995	EOC Work Plan approved by TNRCC
October 16, 1995	RFI Work Plan approved by TNRCC
May 23, 1996	Phase 1 RFI/EOC Report submitted on behalf of SPTCo

Date	Description
November 26, 1996	EOC portion of the Phase 1 RFI/EOC Investigation Report approved by TNRCC
January 13, 1997	RFI portion of the Phase 1 RFI/EOC Investigation Report approved by TNRCC
February 13, 1998	Phase 2-A RFI/EOC Investigation Report submitted to TNRCC on behalf of SPTCo
March 31, 1998	Tentative date for submittal of the Risk Reduction Implementation Work Plan to TNRCC on behalf of SPTCo
July 29, 1998	Tentative date to begin the Phase 2-B field investigation activities
February 24, 1999	Tentative date for submittal of the Phase 2-B RFI/EOC Investigation Report to TNRCC on behalf of SPTCo
June 24, 1999	Tentative date to begin RFI Risk Assessment
August 23, 1999	Tentative date for submittal of the RFI Risk Assessment to TNRCC on behalf of SPTCo
December 21, 1999	Tentative date to begin the Corrective Measures Study
February 19, 2000	Tentative date for submittal of the Corrective Measures Study to TNRCC on behalf of SPTCo
June 20, 2000	Tentative date for submittal of the proposed permit modification and the Corrective Measures Implementation Work Plan to TNRCC on behalf of SPTCo

#### NOTE:

The above summary does not include routine activities such as semiannual ground water reports.

# 1.2 REGULATORY STATUS

In order to facilitate a mutual understanding (between the TNRCC and SPTCo) of the site's position within the regulatory process, the current regulatory status of the site was reviewed. The purpose of this section is to: a) summarize the permit-related regulatory requirements that the site is subject to; b) outline those requirements which have been satisfied by SPTCo prior to submission of this report; and c) outline those requirements which will be addressed in this report and as part of future activities.

The RFI-related regulatory requirements are based primarily on Provision VIII of the permit. The EOC-related regulatory requirements are based primarily on the Compliance Plan, which was issued in conjunction with the permit.

# 1.2.1 REVIEW OF RFI REQUIREMENTS

Provision VIII is designed to facilitate completion of an investigation to determine whether constituents of concern have been released into the environment from SWMUs or AOCs at the site. Prior to initiation of investigative activities, the permit requires submittal of an RFI Work Plan. The purpose of this Work Plan is to characterize the physical layout and operational history of the site, to present a plan for conducting an investigation of the nature and extent of constituent releases in soil (and initially in ground water), and to discuss provisions for developing a full-scale Ground Water Investigation Plan, if warranted.

The permit requires SPTCo to conduct the RFI activities in accordance with the RFI Work Plan following TNRCC's approval of the Work Plan. The data generated through these activities is (in part) intended to determine the need for additional investigative activities at the site. An RFI Report, including a discussion of the findings of the RFI, is required subsequent to completion of investigation activities.

According to the permit, if it is determined that a release to soil or ground water from any of the subject SWMUs or AOCs has occurred, then a Ground Water Investigation Plan is required. The purpose of this Plan is to identify the procedures for conducting supplemental investigations of soil and ground water at the site, as needed. In addition, a Preliminary Ground Water Report, containing a summary of the known ground water conditions at the site is required. The permit then requires that a schedule for a Final Ground Water Report be submitted to the TNRCC.

Subsequent to completion of investigation activities at the site, the permit requires that either a Corrective Measures Study (CMS) or Risk Reduction Standards implementation plan be submitted to the TNRCC. The CMS or Risk Plan is required for any SWMU or AOC at which a release has been documented through the RFI. Finally, a permit modification is required as appropriate, to incorporate any proposed corrective actions and/or changes in Ground Water Protection Standards.

# 1.2.2 REVIEW OF EOC REQUIREMENTS

Compliance Plan No. CP-50343 is designed to facilitate implementation of a corrective action program in the area of the permitted unit (i.e., Closed Surface Impoundment, NOR Unit No. 01). The Compliance Plan requires submittal of a schedule for implementation of the required activities. In addition, an Operation

and Maintenance Plan for the ground water monitoring and recovery system is required.

After submittal of the Compliance Schedule, an EOC Work Plan is required. The purpose of this Work Plan is to outline the objectives of the EOC investigation, describe the methods to be utilized during the investigation, characterize the physical layout and operational history of the permitted unit, and outline the proposed schedule for completion of the investigation.

Subsequent to approval of the EOC Work Plan, the Compliance Plan requires implementation of the investigative activities described therein. Following completion of the EOC investigation, the Compliance Plan requires submittal of an EOC Investigation Final Report. The purpose of the Final Report is (in part) to discuss the information obtained during the investigation and to provide recommendations for further investigation.

Following approval of the EOC Investigation Final Report, the Compliance Plan requires submittal of a Corrective Action Work Plan. The purpose of the Corrective Action Work Plan primarily is to present the methods by which potential corrective action alternatives will be evaluated. Subsequent to approval of the Corrective Action Work Plan, the Compliance Plan requires implementation of the Work Plan.

The Compliance Plan requires submittal of a Corrective Action Report following completion of the Corrective Action Work Plan activities. The primary purpose of the corrective Action Report is to identify a selected corrective action alternative for ground water in the area of the permitted unit. Following approval of the Corrective Action Report (and the final selected corrective action alternative) the Compliance Plan requires submittal of detailed engineering design plans and timeframes for implementation of the alternative. Subsequent to approval of the proposed design plans and timeframes, the Compliance Plan requires that the corrective action alternative be implemented in accordance with the approved schedule.

# 1.2.3 REQUIREMENTS THAT HAVE BEEN SATISFIED

A summary of regulatory requirements that have been satisfied prior to submittal of this report is provided below. The summary is based on documented activities completed by SPTCo and approved by the TNRCC.

As required by the Compliance Plan, SPTCo submitted a Compliance Schedule on August 19, 1994 (IC, 1994b). Additionally, as required by Provision XI.C of the Compliance Plan, SPTCo provided notice to TNRCC of its intent to install two new point-of-compliance (POC) wells between existing wells MW-2 and MW-7. The Compliance Schedule was revised by SPTCo and resubmitted on

September 7, 1994. The two new POC wells were installed on September 19, 1994. The TNRCC approved the installation of the two new POC wells and the Compliance Schedule on November 3, 1994.

Concurrent with submittal of the Compliance Schedule, SPTCo submitted an Operation & Maintenance Plan (IC, 1994a) to TNRCC. The Operation & Maintenance Plan was approved by TNRCC on January 10, 1995. Amendments 2 and 3 to the Operation & Maintenance Plan were submitted to TNRCC on May 21, 1995 and August 8, 1995, respectively.

In accordance with permit requirements, SPTCo submitted an RFI Work Plan, dated October 14, 1994 (IC, 1994d), which addressed the SWMUs and AOCs identified in the permit. The RFI Work Plan was approved, with modifications, by the TNRCC on October 16, 1995. Similarly, an EOC Work Plan was submitted on September 16, 1994 (IC, 1994c), and was approved with modifications by the TNRCC on September 29, 1995.

The RFI and EOC investigations have been combined and the initial field activities were completed by SPTCo during November and December 1995. A Phase 1 RFI/EOC Report was submitted to the TNRCC on May 23, 1996 (Terranext, 1996). The purpose of the Phase 1 report was to summarize the findings of initial investigation activities completed at the site, and to identify areas within the site where further investigation was warranted to fully characterize the nature and/or extent of releases. The EOC portion of the Phase 1 report was approved by the TNRCC on November 26, 1996. The RFI portion of the Phase 1 report was approved by the TNRCC on January 13, 1997.

The Phase 1 report included a summary of known ground water conditions at the site based on the Phase 1 results and information obtained during investigations in the area of the permitted unit. This portion of the Phase 1 RFI/EOC Report was intended to satisfy the permit requirement for submittal of a Preliminary Ground Water Report.

Based on indications that releases had occurred from SWMUs/AOCs at the site, the Phase 1 report also included a proposal for additional (i.e., Phase 2) investigation. In addition to further defining the extent of releases in soil, the Phase 2 proposal included a plan, based on soil and ground water analytical results, to conduct additional ground water investigation. This section of the Phase 1 report was intended to satisfy the permit requirements for submittal of a Ground Water Investigation Plan. Accordingly, an outline of the sequence of future reports was described as required by the permit in the Phase 2 proposal section of the Phase 1 report. The outline included submittal of a Phase 2 RFI/EOC Report.

It should be noted that one of the stated goals of Phase 2 was to fully characterize the nature and extent of releases to ground water at the site; the Phase 2 RFI/EOC Report was thereby intended to fulfill the permit requirement for submittal of a Final Ground Water Report and an EOC Investigation Final Report. Although broad in scope, the Phase 2 field activities completed during 1997 have not provided sufficient data to fully characterize the nature and extent of releases in soil and ground water at the site. Accordingly, this report is not intended to fulfill the requirements for submittal of a Final Ground Water Report or an EOC Investigation Final Report. As described in Section 8.0 herein, additional investigation is proposed for portions of the site and off-site areas (i.e., AOC 6).

# 1.3 OBJECTIVES AND TECHNICAL APPROACH

The objective of the RFI process is to investigate impacts and/or releases from waste management units associated with wood treating operations. The data collected during the RFI will be utilized for the following:

- to help understand current site conditions, including the hydrogeology of the site and the nature and extent of impacts;
- to complete a baseline risk assessment for the site; and
- to help design corrective measures, if warranted.

The objective of the EOC investigation is evaluate the extent of affected ground water outside the closed impoundment's boundary. These data will be utilized to evaluate remedial alternatives that will result in ground water conditions protective of human health and the environment.

The technical approach for the investigations is to collect sufficient, quality data to meet the goals described above. In order to meet these goals more effectively, the investigations have been implemented in a phased approach. A report which documented Phase 1 of the RFI and EOC investigation was submitted to the TNRCC on May 23, 1996 (Terranext, 1996). The Phase 1 report outlined the objectives for Phase 2 activities, and a proposed scope to meet these objectives. The specific objectives of Phase 2 include the following:

- determine the vertical extent of benzene, toluene, ethylbenzene and xylenes (BTEX), polynuclear aromatic hydrocarbons (PAH), and creosote migration in soil within areas shown to be significantly impacted from past releases;
- confirm, compare and if possible, correlate soil borings and soil sampling data with existing cone penetrometer technology (CPT) and Rapid Optical Screening Tool (ROST) data;

- determine the lateral extent of off-site impact attributable to the inactive wastewater lagoon (AOC-6);
- collect representative ground water samples and obtain hydrogeologic data across the entire site;
- develop and apply fate and transport analyses to predict possible contaminant levels off site and support natural attenuation of contaminants in the subsurface;
- collect data to assess natural attenuation processes in soil and ground water;
- obtain an understanding of the relationship between concentrations of contaminants in soil, and how these concentrations have or may affect ground water quality;
- derive risk-based concentrations through risk assessment using available site data; and
- subsequently modify the Compliance Plan and Permit as necessary to assure that site-specific elements form the basis for any further investigation, corrective measures, and post-closure activities required under the Permit.

This report documents the methods and results of the RFI/EOC field activities completed during 1997 and outlines the steps required to complete Phase 2. This first step of Phase 2 is hereinafter referred to as Phase 2-A.

#### 1.4 SCOPE OF PHASE 2-A

The Phase 2-A activities were completed in accordance with the scope and methods described in Section 5.0 of the Phase 1 report. The scope of Phase 2-A included the following:

- completion of seven deep soil borings, eleven monitor wells, eight CPT soundings, and five Hydropunch points;
- collection of 45 surface soil samples, 68 subsurface soil samples, and 20 ground water samples;
- leachability and geotechnical analyses of soil samples; and
- aquifer slug tests to measure hydraulic conductivity.

In addition to describing the methods and results of Phase 2-A, the scope of this report includes addressing a path forward for the remaining permit requirements.

# 1.5 LIMITATIONS

The data and results presented herein were collected by Terranext and their predecessor company, Industrial Compliance (IC). ERM-Southwest has reviewed existing site data to the extent practical and made inferences regarding site conditions based on the field notes and other files from Terranext. ERM-Southwest makes no warranties regarding the accuracy, completeness or validity of the data and results collected to date.

# 2.0 REGIONAL WATER USAGE

### 2.1 HYDROGEOLOGY

According to the latest U.S. Geological Survey nomenclature, the formations that supply water in the Harris County area are, from oldest to youngest: the Goliad Sand of Pliocene Age; the Willis Sand, the Bentley Formation, the Montgomery Formation, and the Beaumont Clay of Pleistocene Age; and Alluvium of Pleistocene and Recent Ages. These formations are grouped into two aquifer subdivisions, which are, from oldest to youngest, the Evangeline Aquifer and the Chicot Aquifer. The Evangeline Aquifer is composed of the Goliad Sand, Willis Sand, and Bentley Formation; and, the Chicot Aquifer is composed of the Montgomery and Beaumont formations.

# 2.2 GROUND WATER USAGE

The investigation site overlies the aquifers of the Chicot hydrogeologic unit, which yield small to moderate quantities of fresh water in Harris County. However, based on information from the City of Houston Water Production/ Water Quality Division, local drinking water in this section of Harris County is obtained only from Lake Houston or the Trinity River (pc, 1997).

A records search was completed in 1995 to identify water wells within one mile of the site (AIC, 1995). The search indicated that nine wells had been installed. Two of the wells are owned by the City of Houston (one screened from 1,142 to 1,969 feet below grade and the other screened from 641 to 1,279 feet below grade), six wells are owned by the Harris-Galveston Coastal Subsidence District for observation (screened from depths ranging from 283 to 2,119 feet below grade), and one was a privately-owned well which has been plugged and abandoned.

# 2.3 SURFACE WATER USAGE

Based on a review of USGS topographic quadrangle maps, no significant surface water bodies suitable for water supply, recreational, or industrial usage are located within one mile of the site.

# 3.0 FIELD PROCEDURES

The field activities associated with Phase 2-A were completed on behalf of SPTCo by Terranext. The scope of the field activities, and the field procedures and investigation tools that were utilized are described in a report prepared by Terranext entitled "*Phase 2 RFI/EOC Field Procedures*". The field procedures report dated December 8, 1997 is included as Appendix A.

# 4.0 SITE GEOLOGY AND HYDROGEOLOGY

Based on a review of the CPT logs and soil boring logs completed as part of previous (including Phase 2-A) hydrogeologic investigations, the subsurface has been characterized to a depth of approximately 75 feet. One deeper boring was advanced for the installation of a monitor well, but no log was generated. The subsurface is characterized by a series of low-permeability zones (i.e., cohesive soils) and water-transmissive zones.

For simplicity and organizational reasons, the nomenclature to designate strata has been modified somewhat. The native cohesive and transmissive zones underlying the site have been re-designated alphabetically from shallowest to deepest. For example, the shallowest or uppermost transmissive zone is referred to as the A-Transmissive Zone or A-TZ.

From shallowest to deepest, the lithologic zones that underlie the site include fill material, the A-Cohesive Zone (A-CZ), the A-Transmissive Zone (A-TZ), the B-Cohesive Zone (B-CZ), the B-Transmissive Zone (B-TZ), the C-Cohesive Zone (C-CZ), the C-Transmissive Zone (C-TZ), and the D-Cohesive Zone (D-CZ). Geologic cross-sections and a cross-section location map are provided in Figures 4-1 through 4-5. The general characteristics of each zone are described below.

## 4.1 FILL MATERIAL

Fill material is present at ground surface and has an average thickness of approximately 3 feet. Visual observations of the fill material indicate that the fill is primarily a mixture of gravel, clay, construction debris, and railroad ties. The layer of fill is underlain by the A-CZ.

### 4.2 A-COHESIVE ZONE

The A-CZ ranges in thickness from 8 to 15 feet and was encountered in all the CPT soundings and monitor well borings. Based on lithologic descriptions from boring logs for MW-10A, MW-10B, and MW-11A, the A-CZ in the western portion of the site consists of gray silty clay. The silty clay is stiff to very stiff, laminated, moist, and contains indications of plant material, calcium carbonate, iron oxide nodules, roots, and sandy clay lenses. The A-CZ is underlain by the A-TZ.

# 4.3 A-TRANSMISSIVE ZONE

According to CPT soundings and boring log descriptions, the A-TZ is a continuous sandy layer present across the site. The A-TZ is thickest on the eastern portion of the property (approximately 10 feet thick), and gradually thins from east to west (to less than 4 feet thick). Based on lithologic descriptions from

boring logs for MW-10A, MW-10B, and MW-11A, the A-TZ beneath the western portion of the site consists of light greenish-gray to light gray sand and silty sand that is very fine-grained, wet, and contains plant material and 10 to 25 percent clay. The A-TZ overlies the B-CZ.

#### 4.4 B-COHESIVE ZONE

The B-CZ is a layer of cohesive soils (mostly clays, silty clays, sandy clays, and clayey silts) ranging in thickness from approximately 10 feet beneath the eastern portion of the site to 16 feet beneath the western portion of the site. The B-CZ was encountered in all the CPT soundings and POC well nest borings. Based on the boring logs from the POC well nests (MW-10A, MW-10B, and MW-11A, MW-11B) the B-CZ beneath the site is clay, silty clay, and sandy clay. It is mottled gray and reddish brown, very stiff to hard, and moist with a high plasticity. The unit also contains lenses of silty sand, and slickensides. The B-CZ overlies the B-TZ or C-CZ where the B-TZ is absent.

# 4.5 B-TRANSMISSIVE ZONE

The B-TZ is a sandy layer that underlies the B-CZ in the western portion of the site only, and is not present in the eastern portion of the site. Where present, the B-TZ is approximately 7 feet thick and is present at approximately 25 to 35 feet below ground surface. Based on the POC boring logs, the B-TZ consists of silty sand and sand that is mottled brown and gray, very fine-grained, and very dense in consistency.

### 4.6 C-COHESIVE ZONE

The C-CZ is a layer of cohesive soils (primarily) that underlie the B-TZ to the west and the B-CZ to the east. The C-CZ is approximately 8 feet thick. Based on boring logs from MW-12C and MW-18C, the C-CZ consists of silt and clayey silt that is reddish brown, firm in consistency, has low plasticity, and contains minor amounts of sand.

### 4.7 C-TRANSMISSIVE ZONE

The C-TZ is a silty sand layer 7 feet thick that underlies the C-CZ at an approximate depth of 65 to 66 feet below ground surface. Based on the boring logs from MW-12C and MW-18C, the C-TZ consists of silty sand that is reddish brown, very fine-grained and wet. The C-TZ overlies reddish brown clay. The underlying clay has been designated the D-CZ: Only the upper 2 feet of the D-CZ has been characterized.

# 4.8 AQUIFER SLUG TEST RESULTS

Aquifer slug tests (rising head) were performed on 10 monitor wells on May 1 and 2, 1997. The slug tests data were analyzed using the Bouwer and Rice method (Bouwer and Rice, 1976) and the solutions are included in Appendix C. The results of the rising head test are listed below.

Monitor Well ID	Transmissive Zone	Hydraulic Conductivity (cm/sec)
MW-10A	A-TZ	$4.2 \times 10^{-4}$
MW-10B	B-TX	$5.3 \times 10^{-5}$
MW-12A	A-TZ	$3.1 \times 10^{-3}$
MW-12B	B-TZ	$3.7 \times 10^{-3}$
MW-13	A-TZ	$7.9 \times 10^{-4}$
MW-14 [B]	B-TZ	$1.2 \times 10^{-4}$
MW-15	A-TZ	$6.9 \times 10^{-4}$
MW-16	A-TZ	$4.5 \times 10^{-4}$
MW-17	A-TZ	$2.8 \times 10^{-4}$
MW-18	A-TZ	$1.3 \times 10^{-3}$

Based on the slug test data gathered from seven monitor wells screened in the A-TZ, the hydraulic conductivity of the A-TZ ranges from  $2.8 \times 10^{-4}$  to  $1.3 \times 10^{-3}$  cm/sec, with an average conductivity of  $7.0 \times 10^{-3}$  cm/sec (2.8 ft/day) and a geometric mean of  $7.6 \times 10^{-4}$  cm/sec. Based on the slug test data gathered from three monitor wells screened in the B-TZ, the hydraulic conductivity of the B-TZ ranges from  $5.3 \times 10^{-5}$  to  $3.7 \times 10^{-3}$  cm/sec, with an average conductivity of  $1.2 \times 10^{-3}$  cm/sec (3.7 ft/day). and a geometric mean of  $2.8 \times 10^{-4}$  cm/sec.

#### 4.9 GROUND WATER FLOW

Ground water elevations were measured from each monitor well on September 25, 1997 to help assess ground water flow direction and gradient. Potentiometric surface contour maps for the A-TZ, B-TZ and C-TZ are provided in Figures 4-6, 4-7 and 4-8, respectively.

### 4.9.1 Horizontal Ground Water Flow

Based on interpretation of the contour maps for both the A-TZ and B-TZ, ground water appears to flow radially away from a relative ground water high in the southwest corner of the Tie Storage Area. The horizontal hydraulic gradient is typically 0.001 ft/ft in both the A-TZ and the B-TZ. Based on the horizontal gradient and the hydraulic conductivity described in Section 4.8 above, the calculated Darcian velocity is 0.8 ft/yr in the A-TZ and 0.3 ft/yr in the B-TZ.

Based on interpretation of the C-TZ contour map, ground water flows toward the east-southeast with a horizontal hydraulic gradient of 0.003 ft/ft.

#### 4.9.2 Vertical Ground Water Flow

Monitor well nests were constructed at five locations at the site. The well nests consist of two or three monitor wells that are located as near as practical to each other (i.e., less than 10 feet apart) but are screened in separate transmissive zones. The well nest locations, screened intervals, and ground water elevations measured on September 25, 1997 are summarized below:

# Tie Storage Area

MW-12A	A-TZ	41.88 ft MSL
MW-12B	B-TZ	41.70 ft MSL
MW-12C	C-TZ	13.44 ft MSL

# Closed Surface Impoundment

MW-10A	A-TZ	41.43 ft MSL
MW-10B	B-TZ	41.28 ft MSL
MW-11A	A-TZ	41.34 ft MSL
MW-11B	B-TZ	41.23 ft MSL

#### Former Process Areas

MW-15A	A-TZ	40.66 ft MSL
MW-15C	C-TZ	16.24 ft MSL
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MW-18A	A-TZ	36.42 ft MSL
MW-18C	C-TZ	19.94 ft MSL

At each location where the A-TZ and B-TZ are screened, the measured ground water elevations for the two zones are within one foot. As a result, the horizontal flow direction and gradient for the two zones are similar. The A-TZ and B-TZ are separated by approximately 5 feet of clay with interlaminated silty and/or sandy seams: that is, the upper portion of the B-CZ. These observations suggest that the A-TZ and B-TZ have substantial hydraulic communication.

Based on the measured ground water elevations, the vertical hydraulic gradient between the A-TZ/B-TZ and the C-TZ appears to be downward. The C-TZ is overlain by 25 to 40 feet of clay, and the potentiometric surface of the C-TZ is an average of 23 feet lower than the A-TZ or B-TZ (where present).

# 5.0 ANALYTICAL RESULTS

The Phase 2-A field activities were conducted between February 25, 1997 and May 13, 1997. The field activities included collection of 45 surface soil samples, 68 subsurface soil samples, and 20 ground water samples for laboratory analyses. Ground water samples were collected both from monitor wells and through Hydropunch technology.

Subsurface soil samples and ground water samples were analyzed for the constituents of interest (COI) listed in the Compliance Plan (Tables I and II). The COI are provided in Table 5-1 and include volatile organic compounds (VOCs) analyzed by SW-846 Method 8260 and semivolatile organic compounds (SVOCs) analyzed by SW-846 Method 8270. The surface soil samples were analyzed for a subset of the COI as described in Section 5.1 below.

In addition, 28 discrete subsurface soil samples were collected from locations that had been characterized through CPT/ROST during Phase 1. These samples were split and analyzed for total petroleum hydrocarbons (TPH) by EPA Method 418.1 (modified) and bench-scale ROST. The objective of this task was to evaluate the relationship between TPH concentration and the fluorescence data obtained during Phase 1.

# 5.1 SURFACE SOIL ANALYTICAL RESULTS

As an initial step in understanding overall site conditions, the Limits of Quantitation (LOQs) were utilized as a benchmark for assessing which areas had been impacted through historical site activities at the SWMUs and AOCs. Ultimately, the extent of affected surface soil will be assessed relative to concentration limits appropriate for the site in accordance with the permit during development of a site conceptual model. The site conceptual model will be presented under separate cover.

A total of 31 surface soil samples were collected from a pre-set grid in accordance with U.S. EPA guidance (U.S. EPA, 1989). Additionally, 14 surface soil samples were collected during completion of soil borings and/or monitor wells. The laboratory analytical results for the surface soil samples are summarized in Table 5-2 and the laboratory analytical reports are provided in Appendix B.

The 31 surface soil samples collected from the grid pattern were analyzed for the SVOCs included on the COI list (Table 5-1) by SW-846 Method 8270. The additional surface soil samples from the soil borings and wells were analyzed for the COI listed in Table 5-1.

Bubble plots were developed from the comprehensive database of surface soil results (i.e., Phase 1 and Phase 2-A) to show the relative distribution of selected

COI. A surface soil bubble plot of soil chrysene concentrations is provided in Figure 5-1. Chrysene was selected because its distribution and range of detected concentrations are representative of the SVOCs reported in surface soil samples. The comprehensive set of surface soil analytical results is described by area below.

# 5.1.1 Area 1 - Off-site Drainage Area

No surface soil samples were collected in the Off-site Drainage Area as part of the Phase 2-A investigation. A description of observed impacts is included in the Phase 1 RFI/EOC report.

# 5.1.2 Area 2 - Tie Storage Area

A total of 20 surface soil samples were collected within the Tie Storage Area as part of the Phase 2-A investigation. Based on the reported laboratory results, unimpacted areas are present near MW-12, CPT30R, CPT28, and MW-15.

# 5.1.3 Area 3 - Former Process Areas

A total of 11 Phase 2-A surface soil samples were collected within the Former Process Areas. The Phase 2-A surface soil sample analytical results indicate two areas of impact, however their extent has not been fully assessed. The analytical results suggest historical impacts are greatest around the location of grid node G8 in the northeast area of the Former Process Area as shown on Figure 5-1.

# 5.1.4 Area 4 - Closed Surface Impoundment

The former impoundment was backfilled with imported fill material as part of closure activities in 1980. Accordingly, no surface soil samples were collected in the Closed Surface Impoundment as part of the Phase 2-A investigation.

# 5.2 SUBSURFACE SOIL ANALYTICAL RESULTS

As an initial step in understanding overall site conditions, the LOQs were utilized as a benchmark for assessing which areas had been impacted through historical site activities at the SWMUs and AOCs. The extent of affected subsurface soil ultimately will be assessed relative to concentration limits appropriate for the site in accordance with the permit during development of a site conceptual model. As previously mentioned, the site conceptual model will be presented under separate cover.

Soil borings SB02 through SB08 and monitor well borings MW-12 through MW-18 were completed as part of the Phase 2-A investigation to assess the extent of COI. In addition, CPT soundings (CPT35 through CPT42) were completed to

further assess site lithology. The soil boring logs and CPT logs are included as Attachment 1 to Appendix A. A total of 68 subsurface soil samples were collected and analyzed for the COI listed on Table 5-1. The analytical results are summarized on Table 5-3 and the laboratory analytical reports are provided in Appendix B.

Bubble plots were developed from the comprehensive database of subsurface soil results (i.e., Phase 1 and Phase 2-A) to show the relative distribution of selected COI. Subsurface soil bubble plots of benzo(a)anthracene and naphthalene are provided in Figures 5-2 and 5-3. Benzo(a)anthracene and naphthalene were selected because the range and distribution of concentrations are representative of the SVOCs reported on site. The comprehensive set of subsurface soil analytical results is described by area below.

# 5.2.1 Area 1 - Off-site Drainage Area

No subsurface soil samples were collected in the Off-site Drainage Area as part of the Phase 2-A investigation. A description of observed impacts is included in the Phase 1 RFI/EOC report.

# 5.2.2 Area 2 - Tie Storage Area

Based on the RFI/EOC investigation results, COI are present from ground surface to the silty clay of the A-CZ (approximately 7 feet below ground surface) in the Tie Storage Area. In addition, COI have been detected within the A-TZ and B-TZ soil matrix at depths of approximately 20 and 35 feet below grade. As shown on Figures 5-2 and 5-3; however, soil impacts are limited to a small area in the southeastern portion of the Tie Storage Area.

The Phase 1 report suggested that a potential creosote source may be present in a localized area near CPT25R. The ROST profile for CPT25R showed measurable fluorescence from 0 to 30 feet below grade and from 42.5 to 45 feet below grade, which corresponds to the fill, A-CZ, A-TZ, and B-TZ. As part of Phase 2-A, soil boring SB05 was advanced adjacent to CPT25R. The laboratory analytical results from samples collected from SB05 indicated that no COI were detected.

# 5.2.3 Area 3 - Former Process Areas

Based on the subsurface analytical results, as well as the relatively high fluorescence intensities recorded, COI are present in the Former Process Areas from ground surface to the clay in the C-CZ (approximately 60 feet below ground surface). A minimum of one COI was detected in each sample collected from the soil borings and well borings located in the Former Process Areas.

# 5.2.4 Area 4 - Closed Surface Impoundment

No subsurface soil samples were collected in the Closed Surface Impoundment as part of the Phase 2-A investigation. A description of observed impacts is included in the Phase 1 RFI/EOC Report.

### 5.3 SOIL LEACHATE TESTING RESULTS

Five subsurface soil samples were submitted for the Synthetic Precipitation Leaching Procedure (SW-846 Method 1312) and subsequent analysis of COI using SW-846 Methods 8260 and 8270. The samples were collected from soil borings SB03, SB04 and SB06, which are located in the Former Process Areas. A summary of the soil leachate testing results is provided in Table 5-4.

#### 5.4 SOIL GEOTECHNICAL RESULTS

A total of 10 soil samples were submitted for analysis of the following geotechnical parameters: dry density, moisture content, specific gravity, fraction organic carbon, and pH. A summary of the soil geotechnical results is included in Table 5-5.

Based on the reported data, several general trends are observed. First, the transmissive zones have lower dry densities and lower specific gravity than the cohesive zones which is a result of differing mineral content, and to a lesser degree, packing and relatively larger grain size. The transmissive zones also have higher moisture content and lower fractions of organic carbon.

### 5.5 GROUND WATER ANALYTICAL RESULTS

As an initial step in understanding overall site conditions, the LOQs were utilized as a benchmark for assessing which areas had been impacted through historical site activities at the SWMUs and AOCs. Ultimately, the extent of affected ground water will be assessed relative to concentration limits appropriate for the site in accordance with the permit during development of a site conceptual model. The site conceptual model will be presented under separate cover.

As part of the Phase 2-A field activities, 11 monitor wells were installed to facilitate ground water sampling and to provide information regarding hydraulic gradient, hydraulic conductivity, lithology, and constituent concentrations in the transmissive zones. Of the 11 Phase 2-A wells, six were completed in the A-TZ, two were completed in the B-TZ and three were completed in the C-TZ. Currently, 23 wells and 3 piezometers are present at the site. A comprehensive well completion table for the wells on site, including the area and zone of completion is provided in Table 5-6.

In addition, nine ground water samples were collected using the Hydropunch sampling system. The overall objective of this phase of the Hydropunch program was to determine if the Inactive Wastewater Lagoon (AOC-6) is a source of impact to the ground water in the off-site area west of the site, and to assess the extent of any impact.

During Phase 2-A, ground water samples were collected from monitor wells on site and from Hydropunch locations on site and off site. The ground water samples were collected and analyzed for the COI listed in Table 5-1. The laboratory analytical results for the ground water samples are summarized in Tables 5-7 and 5-8, and the laboratory analytical reports are provided in Appendix B. Bubble plots which show the relative distribution of selected COI in ground water are provided in Figures 5-4, 5-5 and 5-6 within the A-TZ, B-TZ and C-TZ, respectively. The following subsections describe the ground water analytical results by area.

# 5.5.1 Area 1 - Off-site Drainage

Based on the comprehensive analytical database, the A-TZ appears to be impacted in the off-site drainage area near HP02, HP08, and HP18. The B-TZ is impacted at HP18STZ and HP21STZ. The northern portion of the Off-site Drainage Area shows no impact to the A-TZ (no data is available for the B-TZ and C-TZ in this area).

The reported results for well MW-12C, which is completed in the C-TZ near the center of the Off-site Drainage Area, has no detected COI.

# 5.5.2 Area 2 - Tie Storage Area

Based on the comprehensive analytical database, the A-TZ and B-TZ appear to be impacted in the southwest portion of the Tie-Storage Area near MW-05 and in the center of the western boundary near MW-12. The A-TZ and C-TZ also appear to be impacted in the northeast portion of the area at MW-15; whereas the B-TZ is not present in the northeast.

# 5.5.3 Area 3 - Former Process Areas

Based on the comprehensive analytical database, the A-TZ appears to be impacted in the Former Process Areas. No COI were detected at HP12. The B-TZ is not present in this area of the site. Constituents of interest were also detected in the C-TZ near MW-18. It should be noted that limited data is available relating to ground water in the Former Process Areas.

# 5.5.4 Area 4 - Closed Surface Impoundment

The A-TZ and B-TZ appear to be impacted in the area of the Closed Surface Impoundment. No data is available for the C-TZ in this area.

# 6.0 SOIL ASSESSMENT

Section 5.0 of the Phase 1 report described several soil assessment activities to be completed as part of Phase 2, including a comparison of soil TPH and ROST data, numerical simulation of creosote mobility and fluid motions, and assessment of potential natural attenuation processes. Based on the data collected, only the soil TPH and ROST data comparison is appropriate at this time. Each soil assessment activity is briefly described below.

# 6.1 SOIL TPH AND ROST CORRELATION

During Phase 1, a substantial set of soil fluorescence data was collected using CPT/ROST technology. Because the ROST tool was used *in situ* and adjacent soil samples were not collected, direct comparison to constituent concentrations could not be made. In order to assess the relative sensitivity of the ROST data to soil constituent concentrations, soil samples were collected during Phase 2 and analyzed concurrently for TPH and fluorescence.

In order to collect appropriate data, selected soil borings were sampled at various depths and samples were split for analysis. A portion of each sample was sent to Pace Analytical, Inc. of Houston, Texas for TPH analysis, and a portion was sent to Fugro Geosciences of Houston, Texas for bench-scale ROST analysis. A summary of the results is provided in Table 6-1.

A similar study was performed recently and is described in a document entitled *The Rapid Optical Screening Tool (ROST*<sup>TM</sup>) *Laser-Induced Fluorescence (LIF) System for Screening of Petroleum Hydrocarbons in Subsurface Soils* (U.S. EPA, 1997). In that document, a qualitative correlation was demonstrated between TPH (a.k.a., TRPH) results and ROST results at two different environmental investigation sites. However, quantitative correlation was not discussed. Hence, both a quantitative and a qualitative correlation between TPH and ROST data is presented herein.

# 6.1.1 QUALITATIVE COMPARISON

As a first step, a qualitative analysis was performed to evaluate whether a positive ROST detection is reproducible as a positive TPH detection. The results suggest a very good correlation between TPH detects and LIF detects was observed to the extent that only one discrepancy was noted in 31 observations.

The qualitative analysis included a review of TPH and ROST detection limits. The TPH LOQ for this data set was reported at 20 mg/kg. Background fluorescence is typically established for each sounding based on the average minimum LIF response (a detection limit is then calculated by adding 2.58 standard deviations of the minimum response to the background value). However, because

the ROST probe was exposed to a batch sample for this analysis, rather than a continuous soil column, no background measurement could be obtained. Whereas a detection limit could not be calculated for a specific sample, an approximate background intensity (i.e., detection limit) of 2.65 was estimated based on the entire set of data.

# 6.1.2 QUANTITATIVE COMPARISON

Prior to numerical comparison, the data sets were transformed to natural logarithms. In addition, a value equal to one-half the TPH LOQ (i.e., 10 mg/kg) was assigned for non-detect results.

Visual inspection of the data shows an obvious trend, and an R<sup>2</sup> value of 0.7 is calculated through linear regression analysis (Figure 6-1). For comparison purposes, the data sets were then segregated by soil class to help account for potential variability resulting from soil texture differences. Very strong correlations were calculated for the segregated data sets. For example, an R<sup>2</sup> value of 0.9 was calculated when the subset for clayey silt was compared.

Derivation of site-specific calibration curves and more rigorous statistical evaluation is not presented herein based on: a) the areas where ROST was employed previously have subsequently been studied using conventional techniques; and b) the results of the conventional analysis largely supported the ROST screening results. The applicability of additional comparison will be determined based on the objectives of future use of ROST technology at the site, if any.

# 6.2 ANALYSES OF CREOSOTE MOBILITY, FLUID MOTIONS AND NATURAL ATTENUATION PROCESSES

Section 5.8 of the Phase 1 report described a conceptual methodology for numerically determining the site-specific mobility of creosote. In addition, numerical simulations of fluid motion and natural attenuation processes were proposed. Based on the data collected and the overall goals of the RFI/EOC investigations, these modeling efforts appear to be premature at this time.

The goals of the RFI/EOC investigations included assessment of the extent of affected material. Thus, until that assessment is complete, or unless further investigation cannot be completed, it is not appropriate to model these processes. If, following completion of the RFI/EOC investigations, additional understanding of these processes is required to achieve permit requirements, then the modeling will be performed.

#### 7.0 PHASE 2-A CONCLUSIONS

The following general conclusions were developed based on data presented herein and in the Phase 1 report completed previously.

#### 7.1 SUMMARY OF HYDROGEOLOGY

The predominant lithology beneath the site is clay, though very fine-grained sand zones are present as thin laterally continuous layers (A-TZ and C-TZ) across the site, and as a thin discontinuous layer (B-TZ) beneath the western portion of the site (see Figures 4-1 through 4-5). The A-TZ and B-TZ appear to be interconnected to some degree, and ground water these two upper zones flows away from the southwestern portion of the site. Ground water in the C-TZ flows toward the east-southeast. The hydraulic conductivity of the sandy zones range from 10<sup>-3</sup> to 10<sup>-5</sup> cm/sec. There are no known uses of ground water from the A-TZ, B-TZ or C-TZ within one mile of the site.

#### 7.2 SUMMARY OF SOIL CHARACTERISTICS

Surface soil and subsurface soil samples were collected as part of Phase 2-A. As an initial step in understanding overall site conditions, the LOQs were utilized as a benchmark for assessing which areas had been impacted through historical site activities at the SWMUs and AOCs. The areas that appear to be impacted include the following:

- Off-site Drainage Area Site data indicates that portions of the B-TZ and C-CZ are impacted by COI.
- Tie Storage Area Site data indicates that portions of the A-CZ, A-TZ, B-CZ and B-TZ are impacted by COI. Based on laboratory analytical results from SB05, the theory of a localized creosote source near CPT25R is discounted.
- Former Process Areas Site data indicates that portions of the A-CZ, A-TZ, B-CZ and C-CZ are impacted by COI.
- Closed Surface Impoundment The former surface impoundment was a shallow pit approximately 7 feet deep, excavated and closed according to guidance from the Texas Water Commission (now the TNRCC) in 1984. Site data indicates that the A-CZ, A-TZ, and B-CZ at the surface impoundment are less impacted by constituents of concern than the deeper B-TZ.

Soil fluorescence appears to be directly proportional to soil TPH (and presumably to COI) concentrations. The extent of affected soil will be assessed relative to

concentration limits appropriate for the site in accordance with the permit during development of a site conceptual model.

# 7.3 GROUND WATER CHARACTERISTICS

Ground water samples were collected both from monitor wells and through the Hydropunch system as part of Phase 2-A. As an initial step in understanding overall site conditions, the LOQs were utilized as a benchmark for assessing which areas had been impacted through historical site activities at the SWMUs and AOCs. The areas that appear to be impacted include the following:

- Off-site Drainage Area Site data suggests that portions of the A-TZ and B-TZ are impacted by COI.
- Tie Storage Area Site data indicates that portions of the A-TZ and C-TZ are impacted by COI.
- Former Process Areas Site data indicates that portions of the A-TZ and C-TZ are impacted by COI.
- Closed Surface Impoundment Ground water near the former surface impoundment is analyzed semiannually pursuant to the Compliance Plan, and the results are provided in semiannual ground water monitoring reports submitted under separate cover. Site data indicates that the A-TZ, and B-CZ at the surface impoundment are impacted by COI.

The extent of affected ground water will be assessed relative to concentration limits appropriate for the site in accordance with the permit during development of a site conceptual model.

### 8.0 PATH FORWARD

In order to satisfy the substantive requirements of the permit and compliance plan, SPTCo proposes an aggressive path forward. Based on the extensive investigation completed on site to date, only limited additional investigation is warranted to meet the overall goals of the RFI on site. Conversely, SPTCo recognizes that the off-site data set is limited and that additional RFI/EOC investigation is warranted: for example, in the AOC-6 area and the area northeast of the site. Accordingly, a work plan to complete the RFI/EOC investigations will be submitted.

The work plan will likely incorporate by reference much of the material presented in the RFI Work Plan approved previously, except for the scope of work. The work plan will outline a detailed scope of work for Phase 2-B that will achieve the pertinent goals of Phase 2. SPTCo proposes that the goals of Phase 2 be limited hereafter to determining the lateral and vertical extent of affected media resulting from activities at SWMUs and AOCs during wood treating operations. SPTCo is confident that these objectives will be achieved during Phase 2-B; however, if the objectives are not achieved, then a Phase 2-C will be implemented. The applicability of developing fate and transport analyses to predict possible COI concentrations off site in the future (in support of natural attenuation demonstrations) will be assessed during future site activities.

#### 8.1 SUMMARY OF ACTIVITIES

This section provides a conceptual summary of the actual activities associated with the site. In addition to the RFI/EOC investigations, routine ground water monitoring and other activities associated with the Closed Surface Impoundment Compliance Plan will be performed, but are not included in this summary.

It should also be noted that Interim Stabilization Measures may be implemented during the course of site activities. For example, the off-site portion of the southern drainage ditch (i.e., SWMU 1) has been remediated and an Interim Stabilization Measures report will be submitted under separate cover during the first quarter of 1998.

#### • Phase 1 RFI/EOC

A screening-level investigation of the SWMUs and AOCs was completed to help design a full-scale investigation (i.e., Phase 1). The Phase 1 investigation results suggested that completion of a full-scale soil and ground water investigation of waste management areas was warranted.

#### Phase 2 RFI/EOC

A multi-phase, full-scale investigation was designed to determine the nature and extent of affected media. The Phase 2 investigation is in progress. A plan to complete Phase 2 will be developed and submitted as part of a Risk Reduction Implementation Plan as described below.

#### Baseline Risk Assessment

A baseline risk assessment (BRA) will be completed following completion of Phase 2. If warranted based on the conclusions of the BRA, a corrective measures study (CMS) will be completed.

#### Phase 3 Investigation

Phase 3 will be reserved for investigation related specifically to remedial design, if warranted, following completion of the BRA and CMS.

#### Corrective Measures

If warranted based on the conclusions of the BRA and following completion of the CMS, corrective measures will be implemented. Prior to implementation, a permit and compliance plan modification will be completed to incorporate the objectives and conceptual design of the corrective measures, as well as to establish the protection standards (i.e., remedial goals) that will be achieved.

#### 8.2 PROPOSED PLAN

In order to fully develop the framework for future activities at the site, a Risk Reduction Implementation Plan (RRIP) will be prepared and submitted. The RRIP will describe the conceptual approach to implementing the Risk Reduction Standards in accordance with Provision VIII.I.3 of the permit. The contents of the RRIP will include the following:

- a summary of the RFI/EOC investigation results;
- development of a site conceptual model, including a discussion of the extent of affected media relative to concentration limits appropriate for the site in accordance with the permit;
- the technical approach to addressing the SWMUs and AOCs individually or as groups of waste management units;
- development of preliminary risk goals for the site;

- a description of how the Risk Reduction Rules (or Program) will be applied at the site;
- preliminary risk assessment activities, including comprehensive evaluation of site data and selection of constituents of concern;
- assessment of site-specific risk assessment issues such as risk assessment for dermal exposure to carcinogenic PAHs, and wetlands and ecological assessment issues;
- a work plan for Phase 2-B as described above;
- a technical justification for modifying the permit and compliance following completion of Phase 2 to implement corrective action; and
- a detailed schedule for implementing the remaining requirements of the permit and compliance plan.

SPTCo proposes to submit the RRIP to the TNRCC during the first quarter of 1998. A preliminary outline for the RRIP is provided in Appendix D.

#### 9.0 REFERENCES

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Terranext (1996); Phase 1 RFI/Extent of Contamination Investigation Report, Southern Pacific Transportation Company, Houston Wood Preserving Works, 4910 Liberty Road, Houston, Texas; May 23, 1996.

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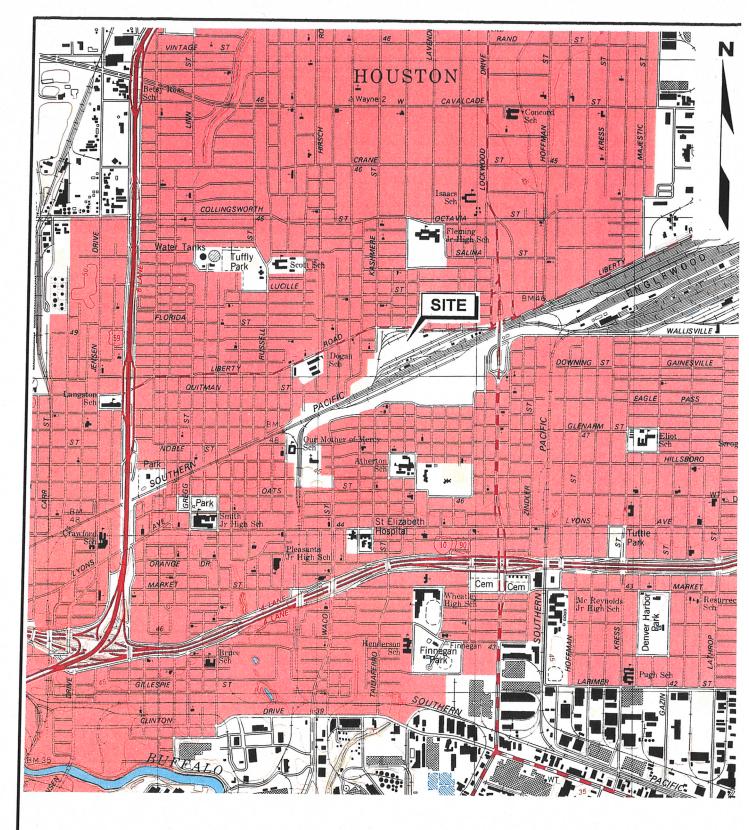
TNRCC (1994b); Compliance Plan for Industrial Solid Waste Management Site, Compliance Plan No. CP-50343, Southern Pacific Transportation Company, Wood Preserving Works, Houston, Texas; June 20,1994.

U.S. EPA (1989); Interim Final RCRA Facility Investigation Guidance, Volume I of IV, EPA 530/SW-89-031; May 1989.

U.S. EPA (1997); The Rapid Optical Screening Tool (ROST<sup>TM</sup>) Laser-Induced Fluorescence (LIF) System for Screening of Petroleum Hydrocarbons in Subsurface Soils, EPA/600/R-97/020: February 1997.

U.S.G.S. (1982); Settegast, Houston Heights, Bellaire, and Park Place, Texas Quadrangles, 7.5 Minute Topographic Series; 1982.

## **Figures**

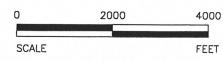


Source: U.S.G.S. Quadrangle

Settegast, Texas

1982

7.5 Minute Series (Topographic)





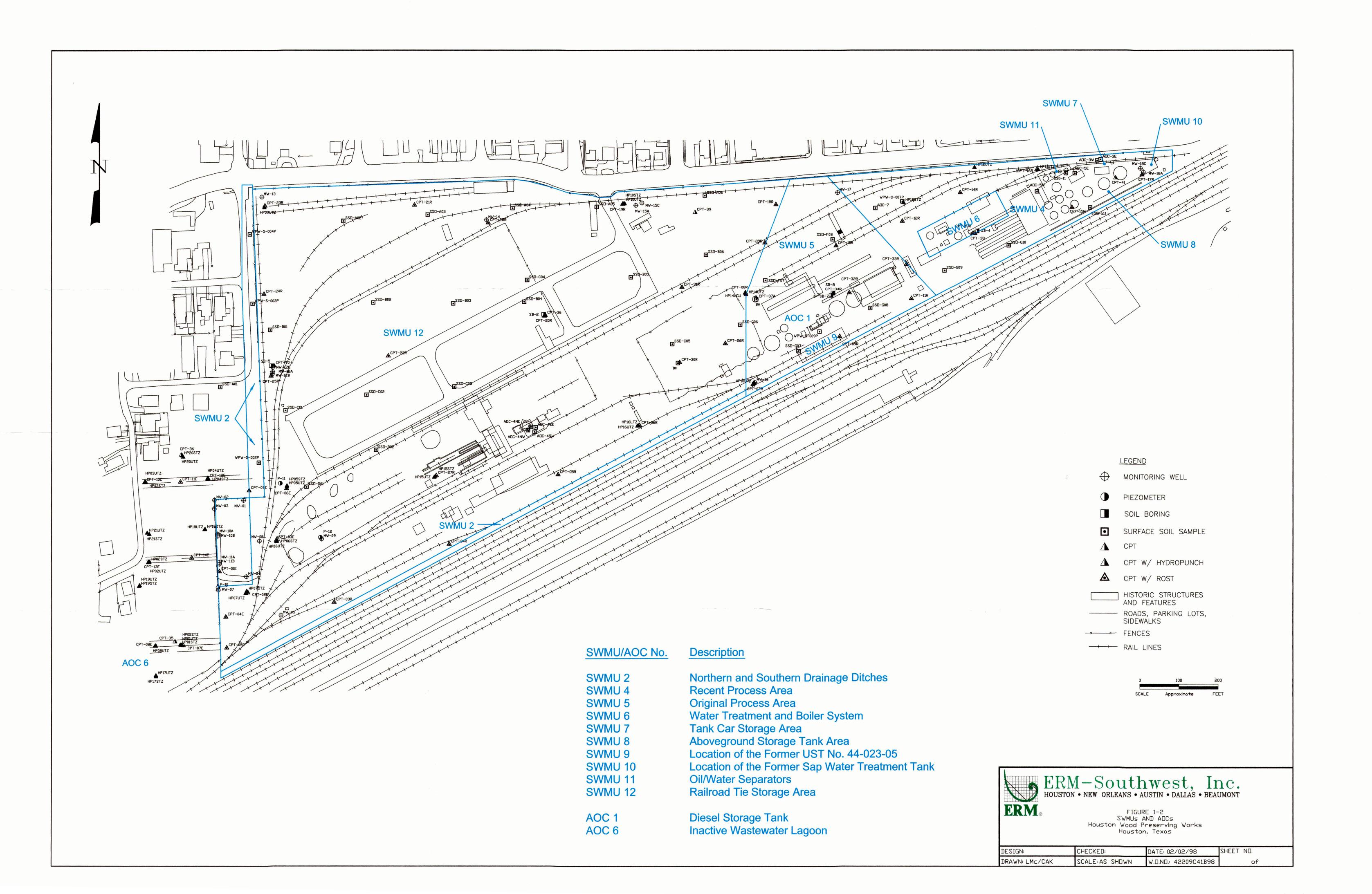
## ERM-Southwest, Inc.

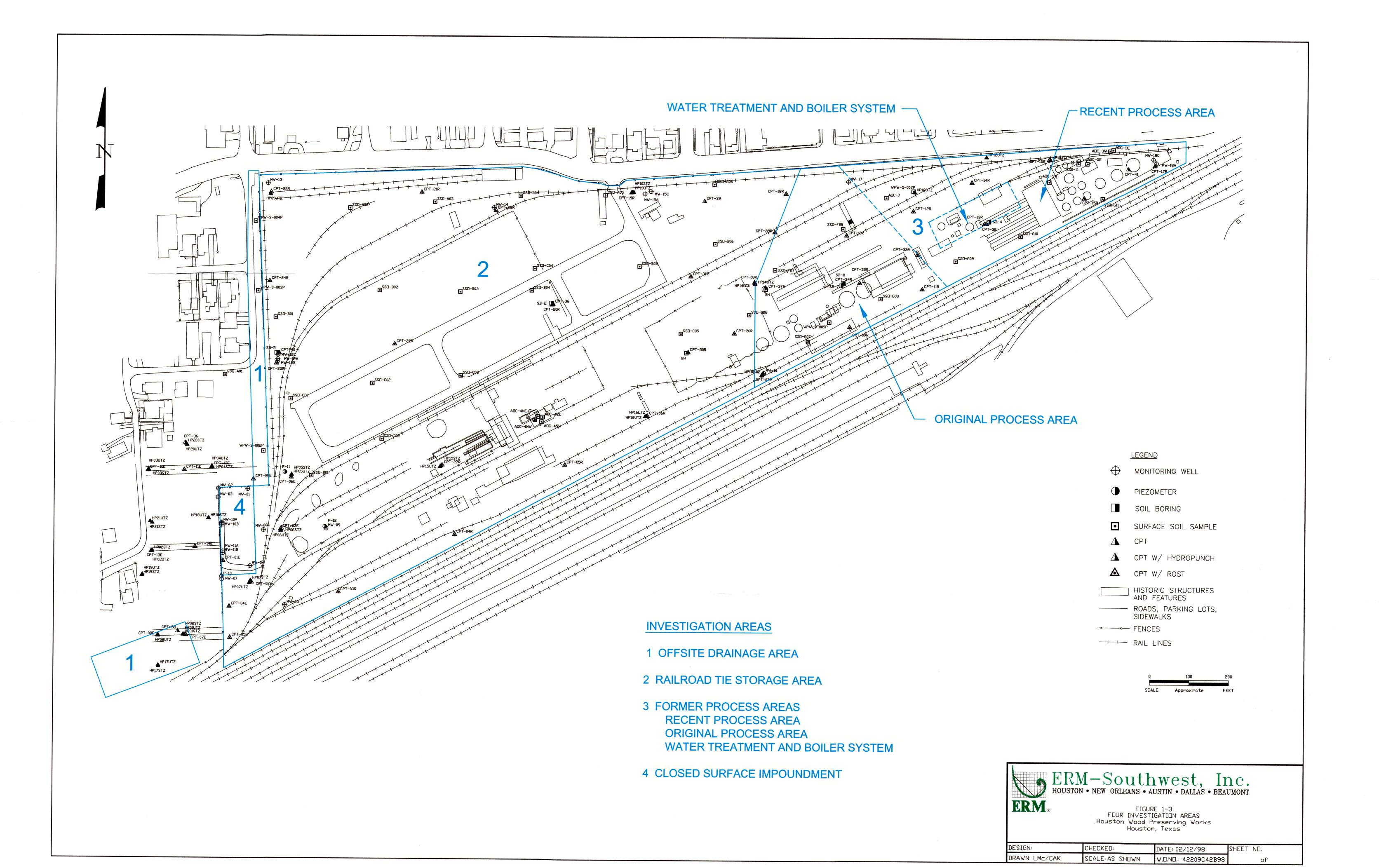
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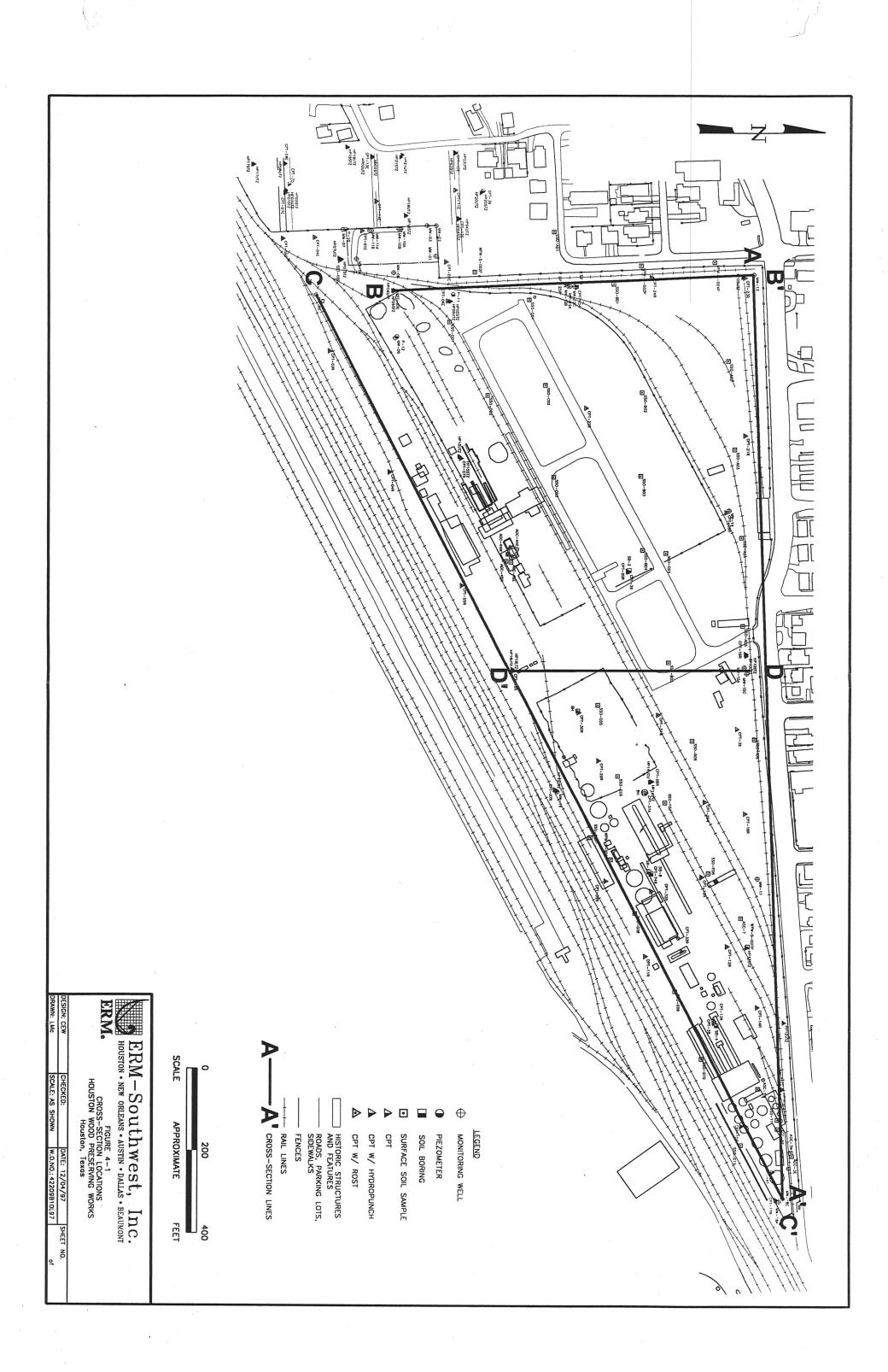
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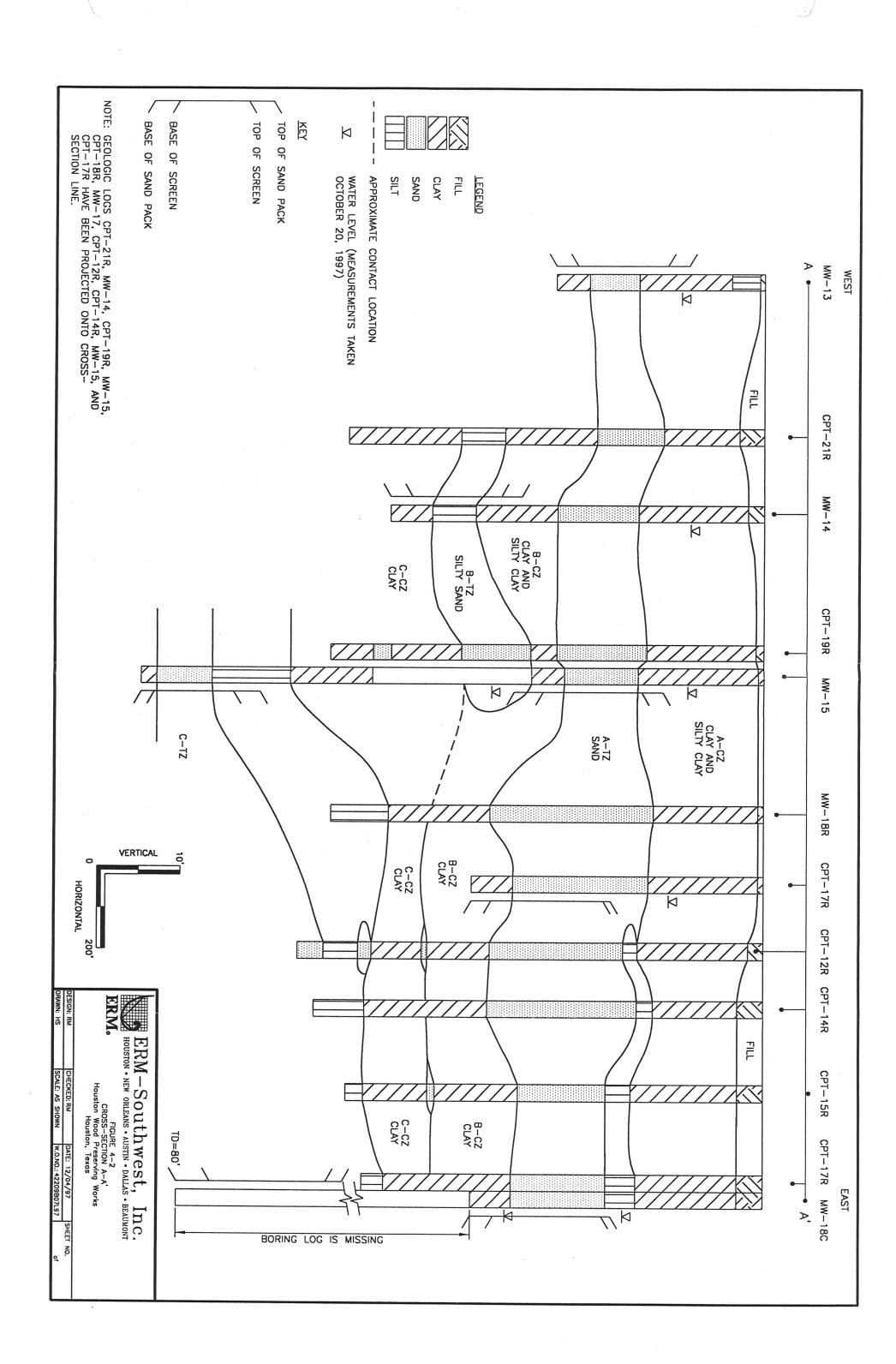
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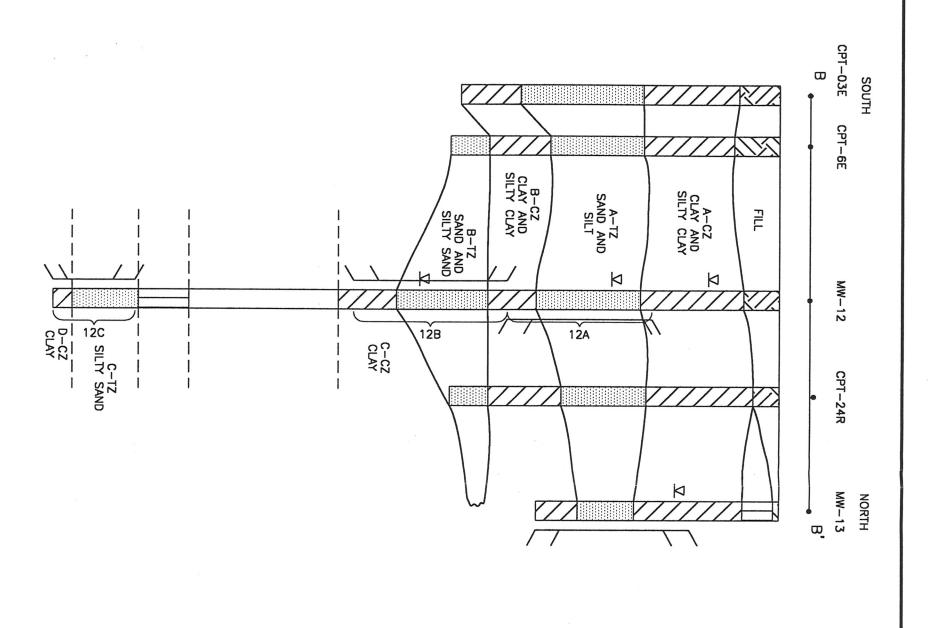
FIGURE 1-1 SITE LOCATION MAP Houston Wood Preserving Works Houston, Texas



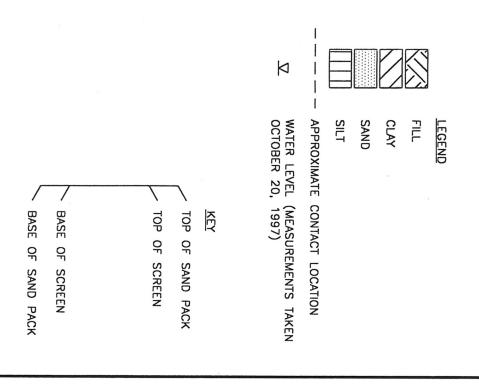








NOTE: GEOLOGIC LOG CPT-24R HAS BEEN PROJECTED ONTO CROSS-SECTION LINE.



ERM—Southwest, Inc.

HOUSTON • NEW ORLEANS • AUSTIN • DALLAS • BEAUMONT

FRURE 4-3

CROSS-SECTION B-B'

Houston Wood Freas

Houston, Texas

DESIGN: RM CHECKED: RM DATE: 12/04/97 SHEET NO.

of

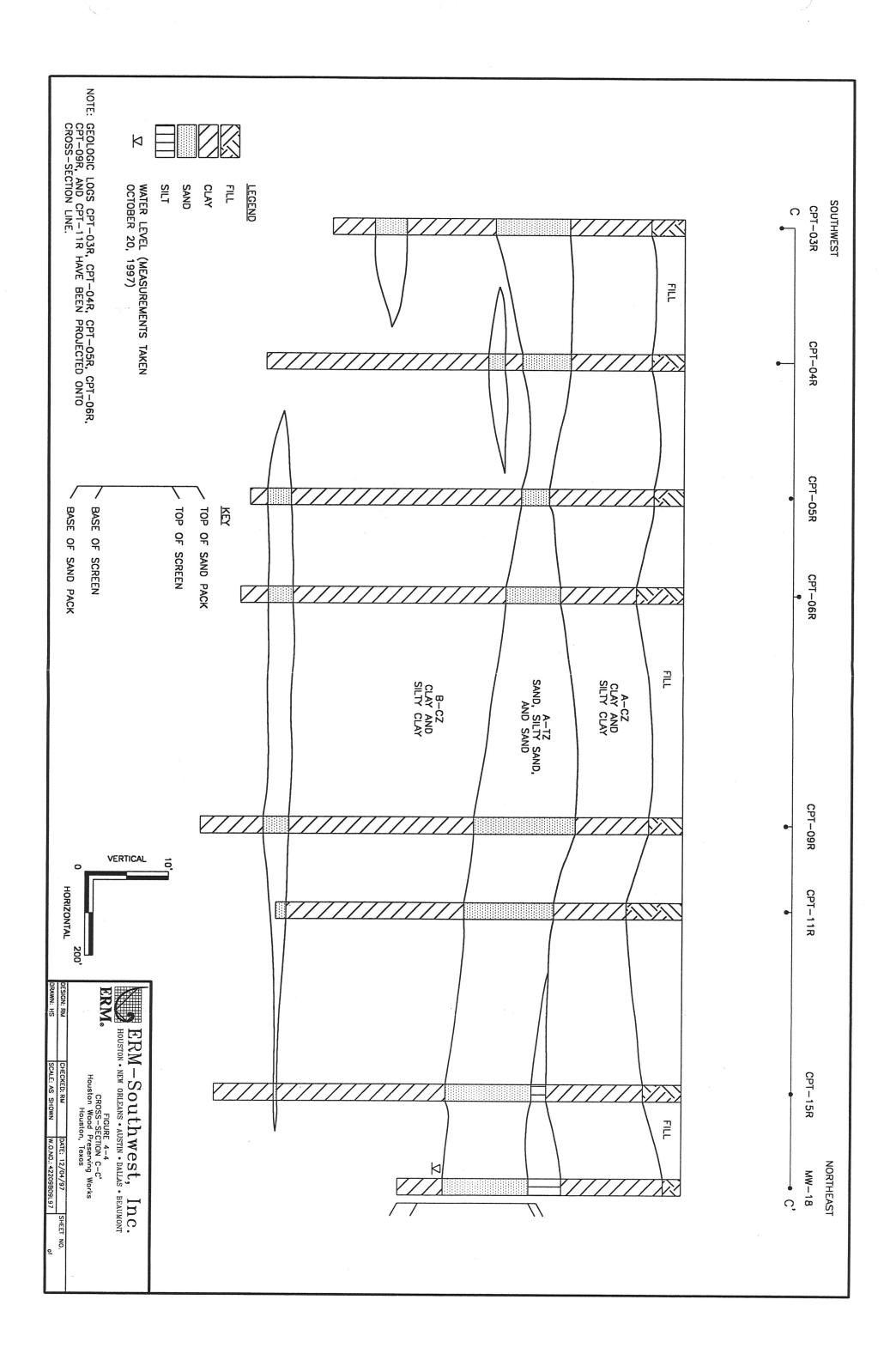
VERTICAL

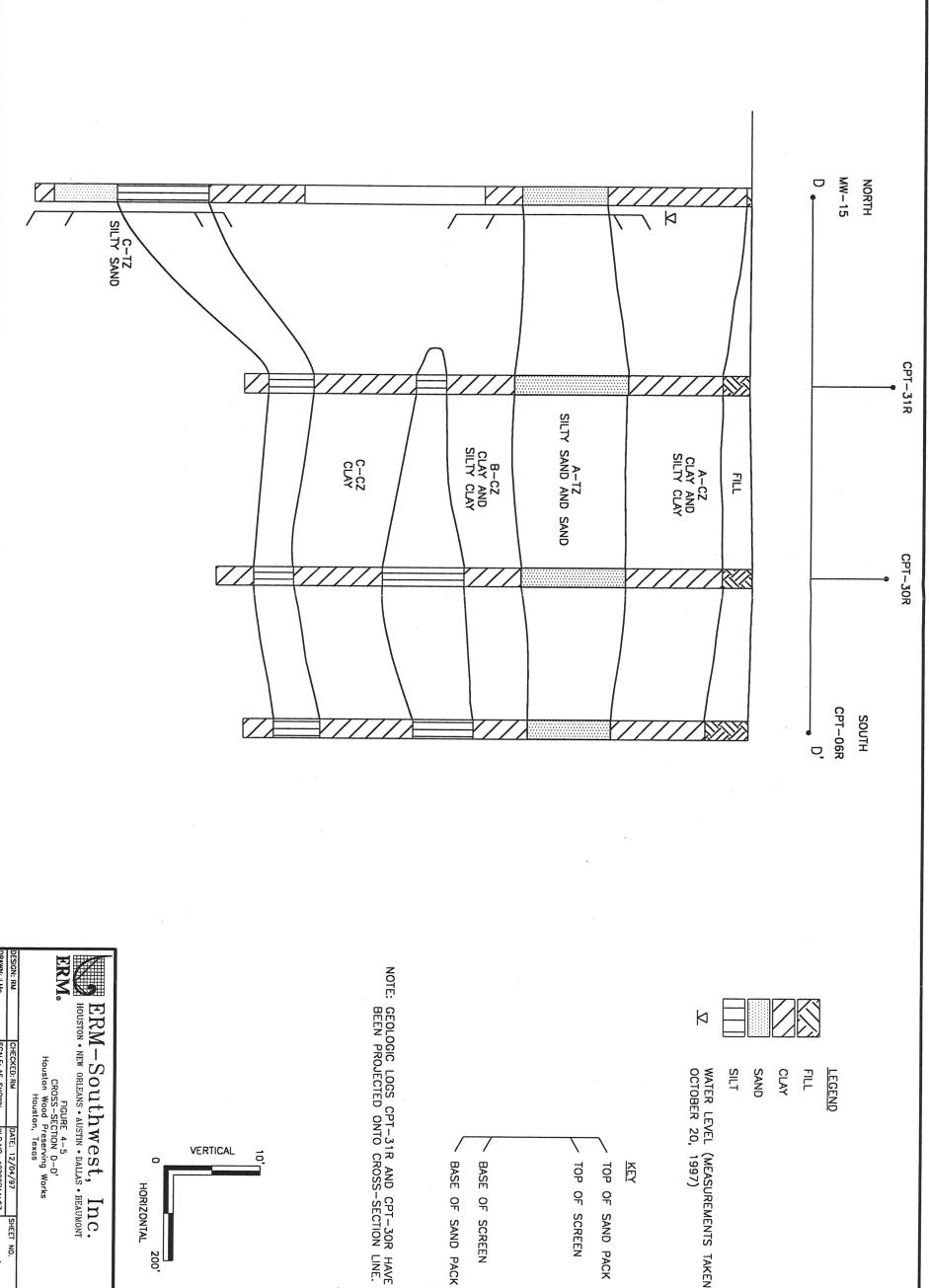
0

200'

HORIZONTAL

10.





WATER LEVEL (MEASUREMENTS TAKEN OCTOBER 20, 1997)

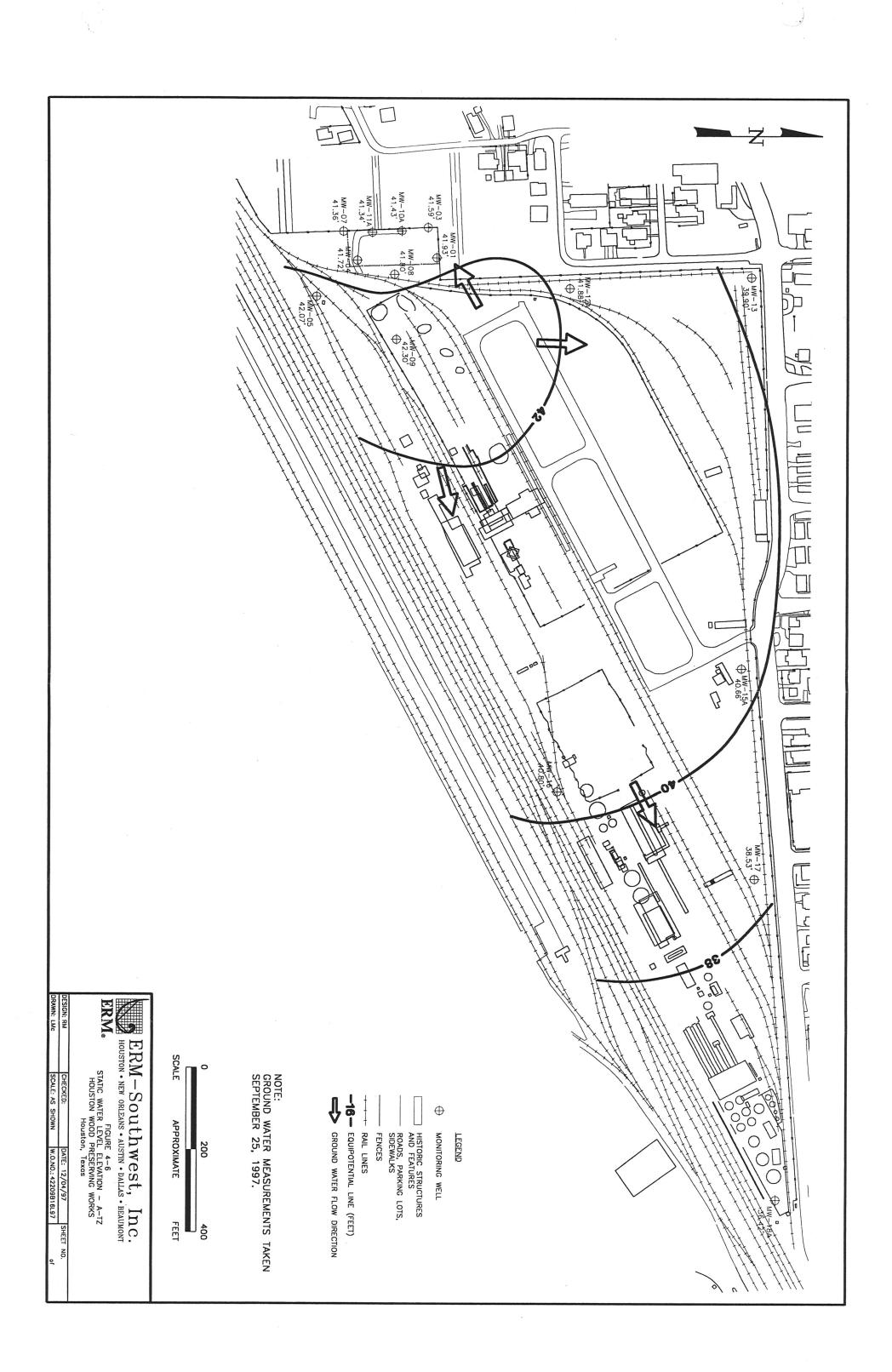
BASE OF SCREEN BASE OF SAND PACK TOP OF SCREEN TOP OF SAND PACK

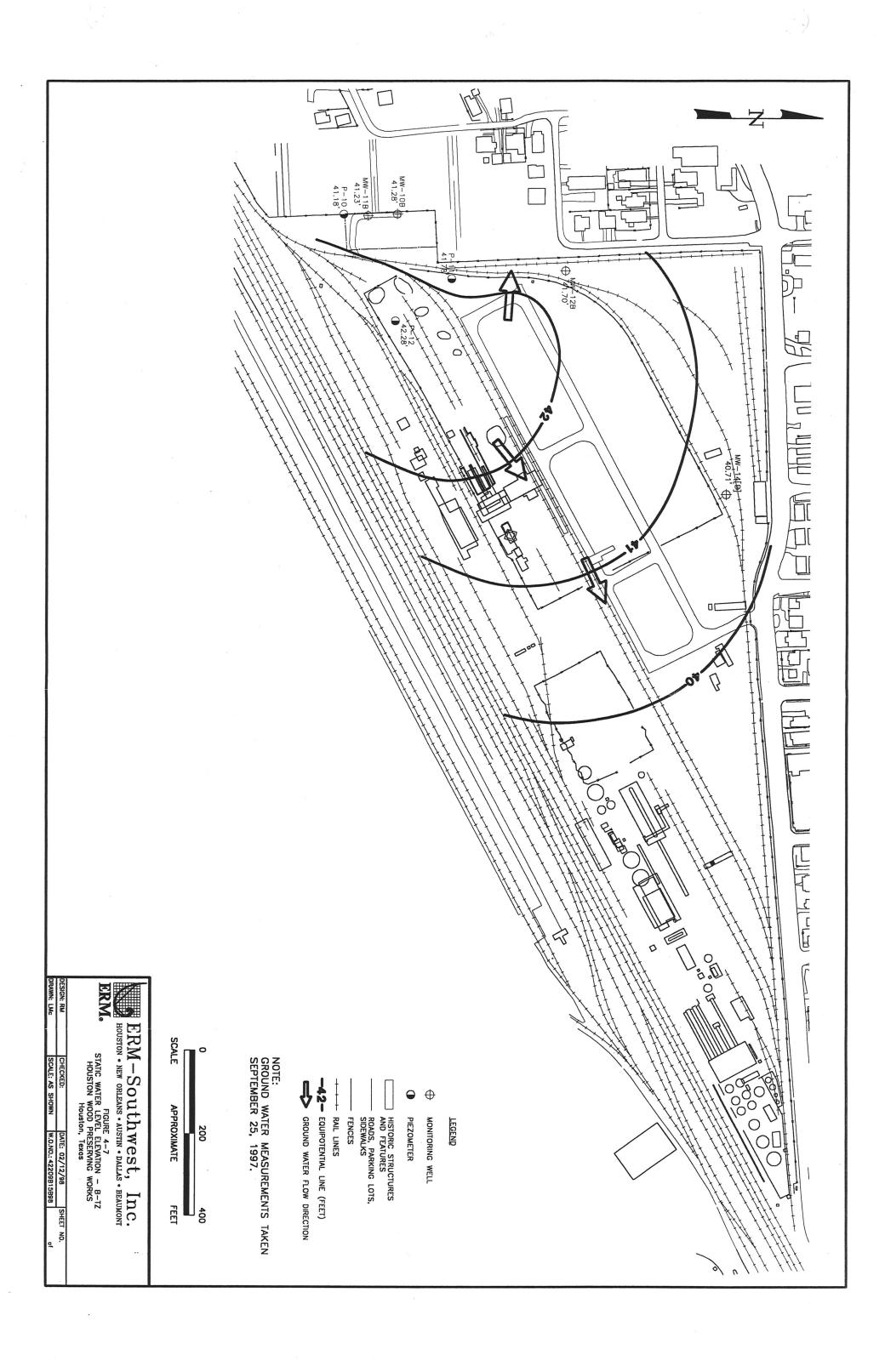
HORIZONTAL

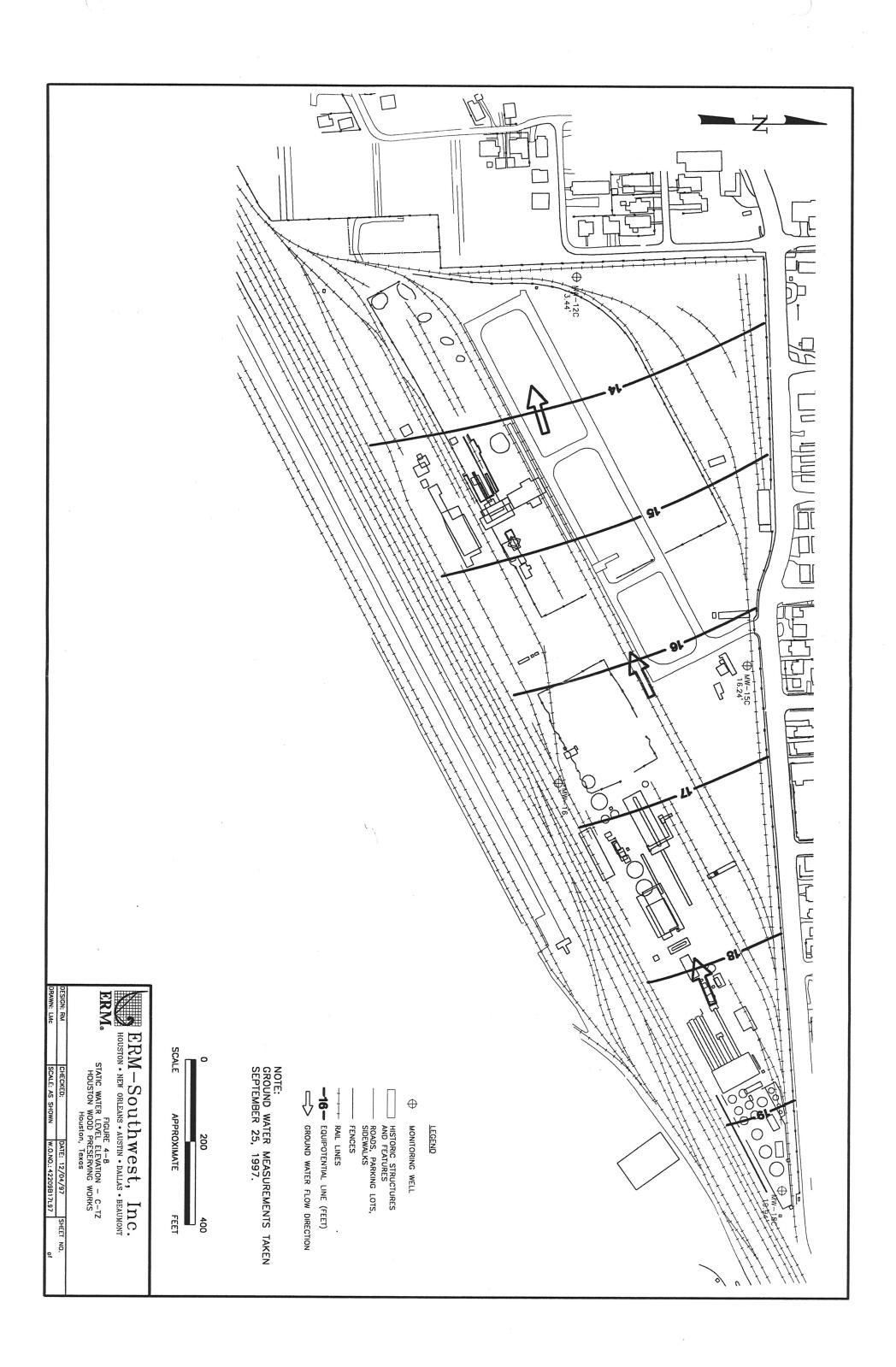
200'

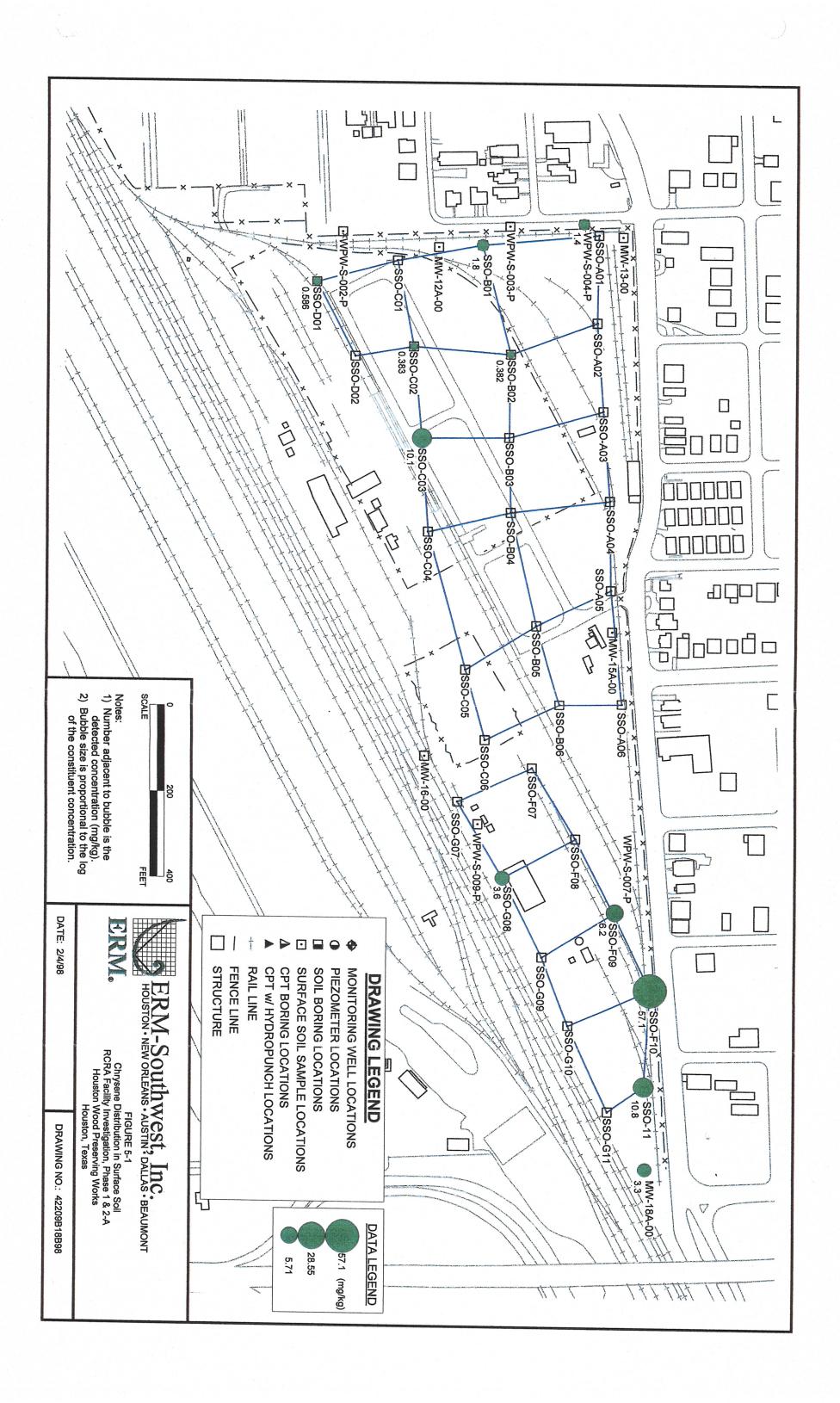
FIGURE 4-5
CROSS-SECTION D-D'
Houston Wood Preserving Works
Houston, Texas

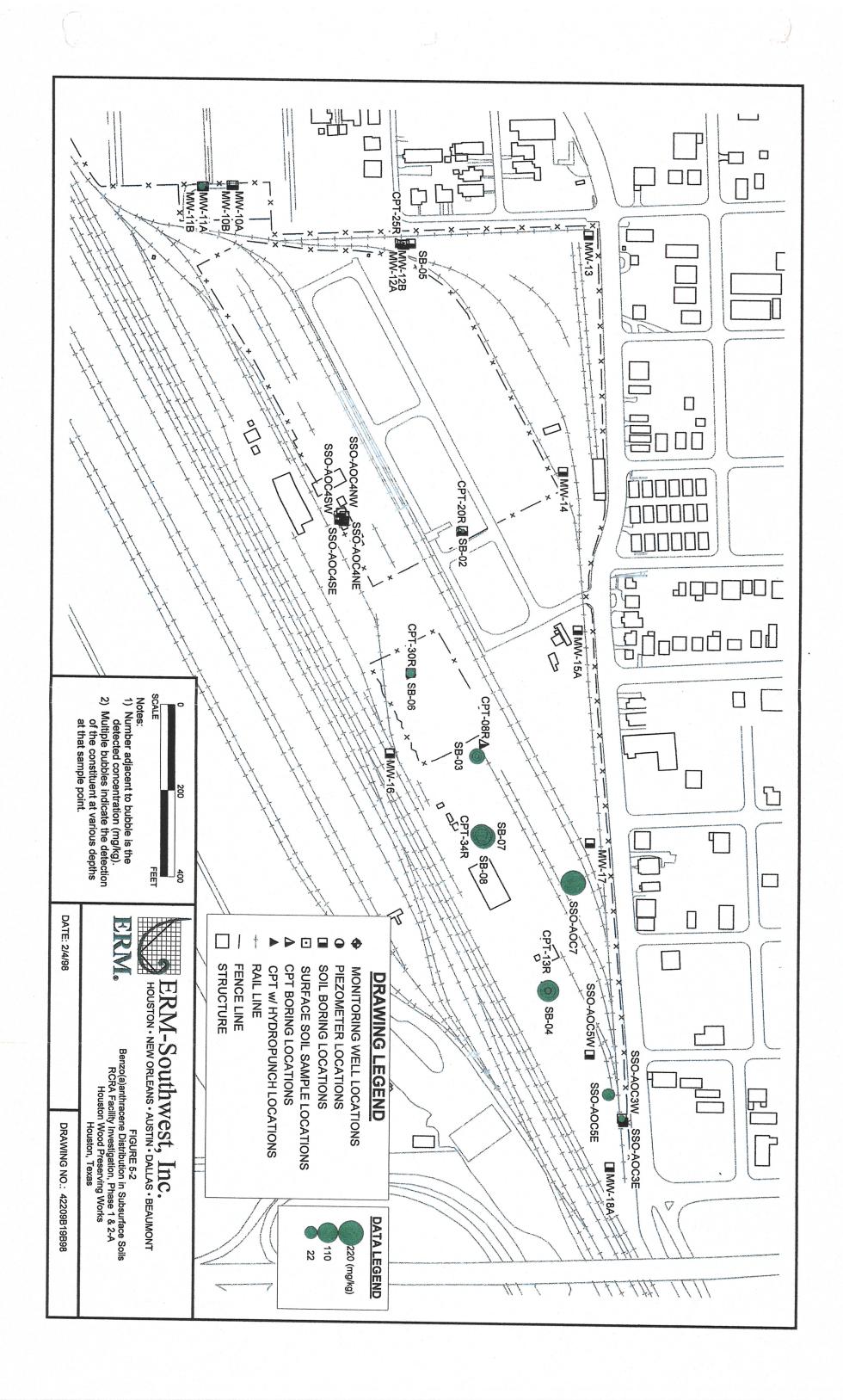
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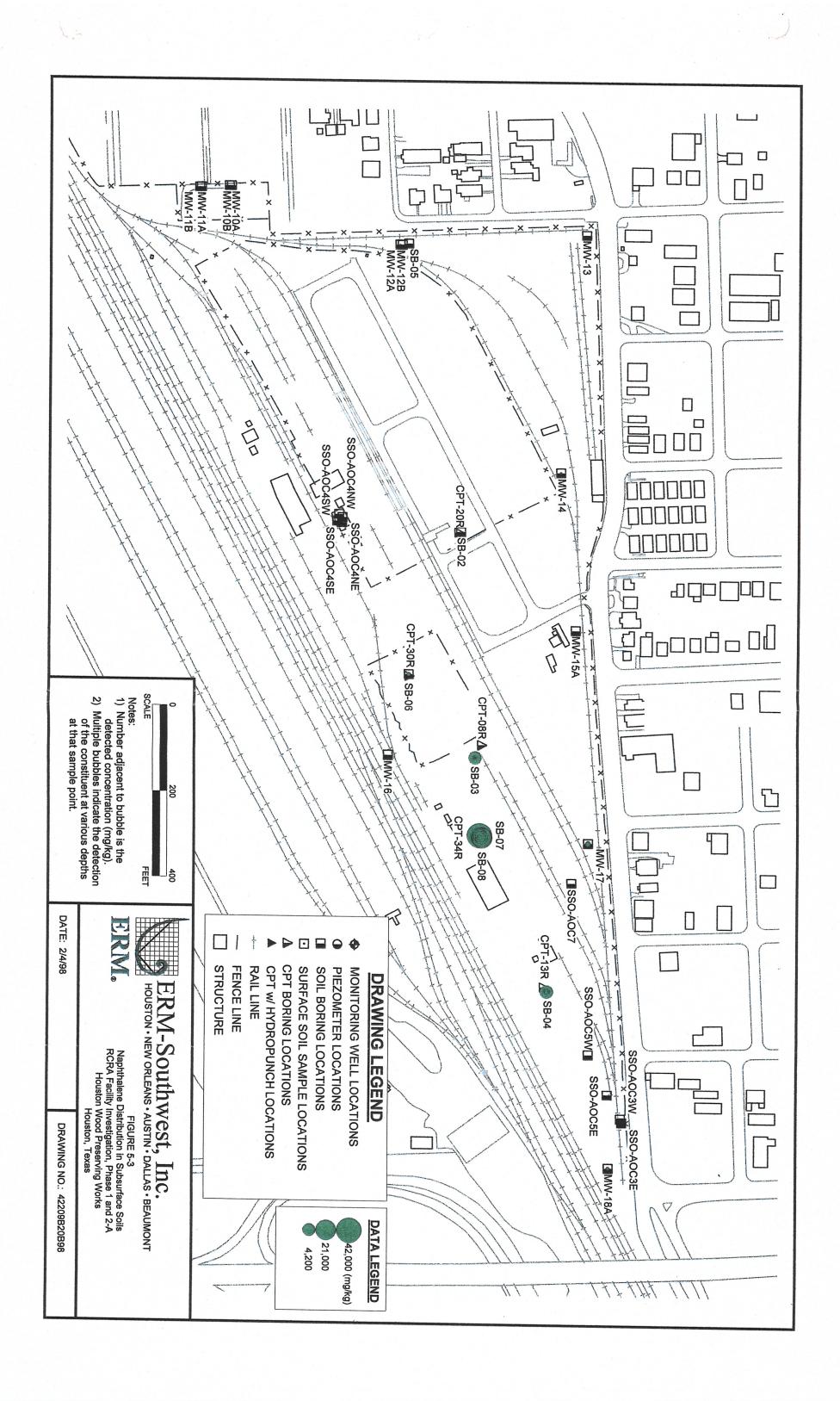


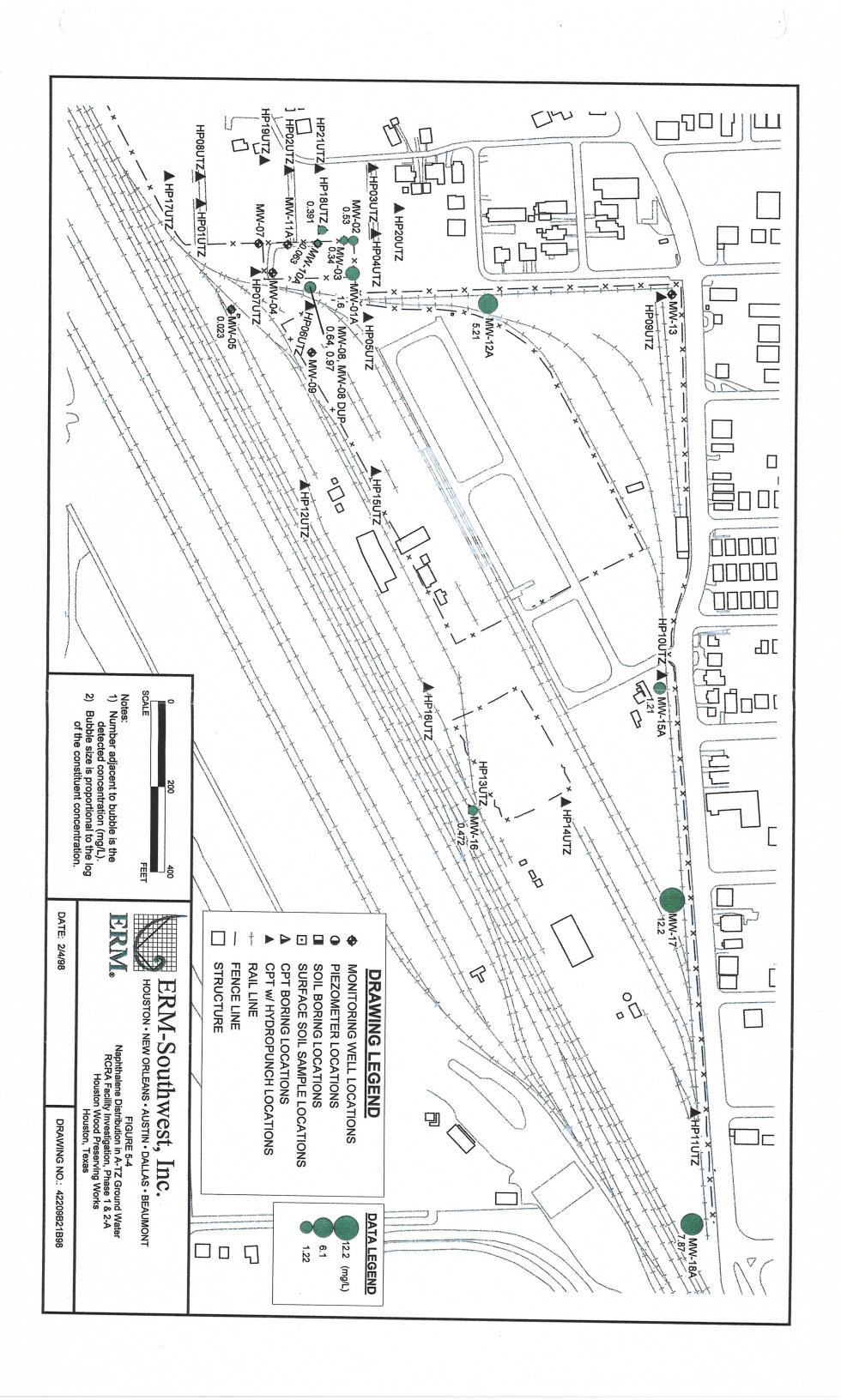


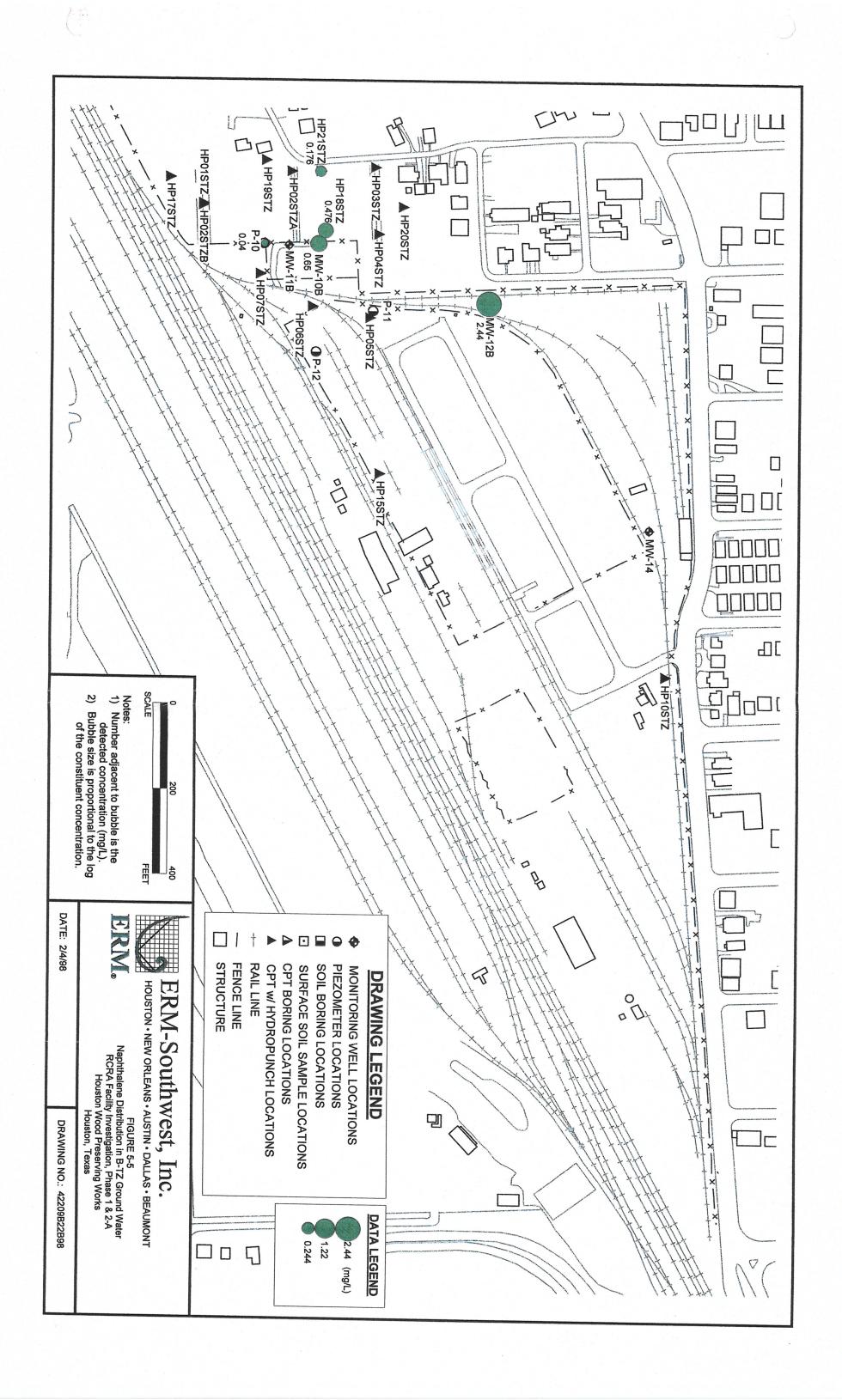


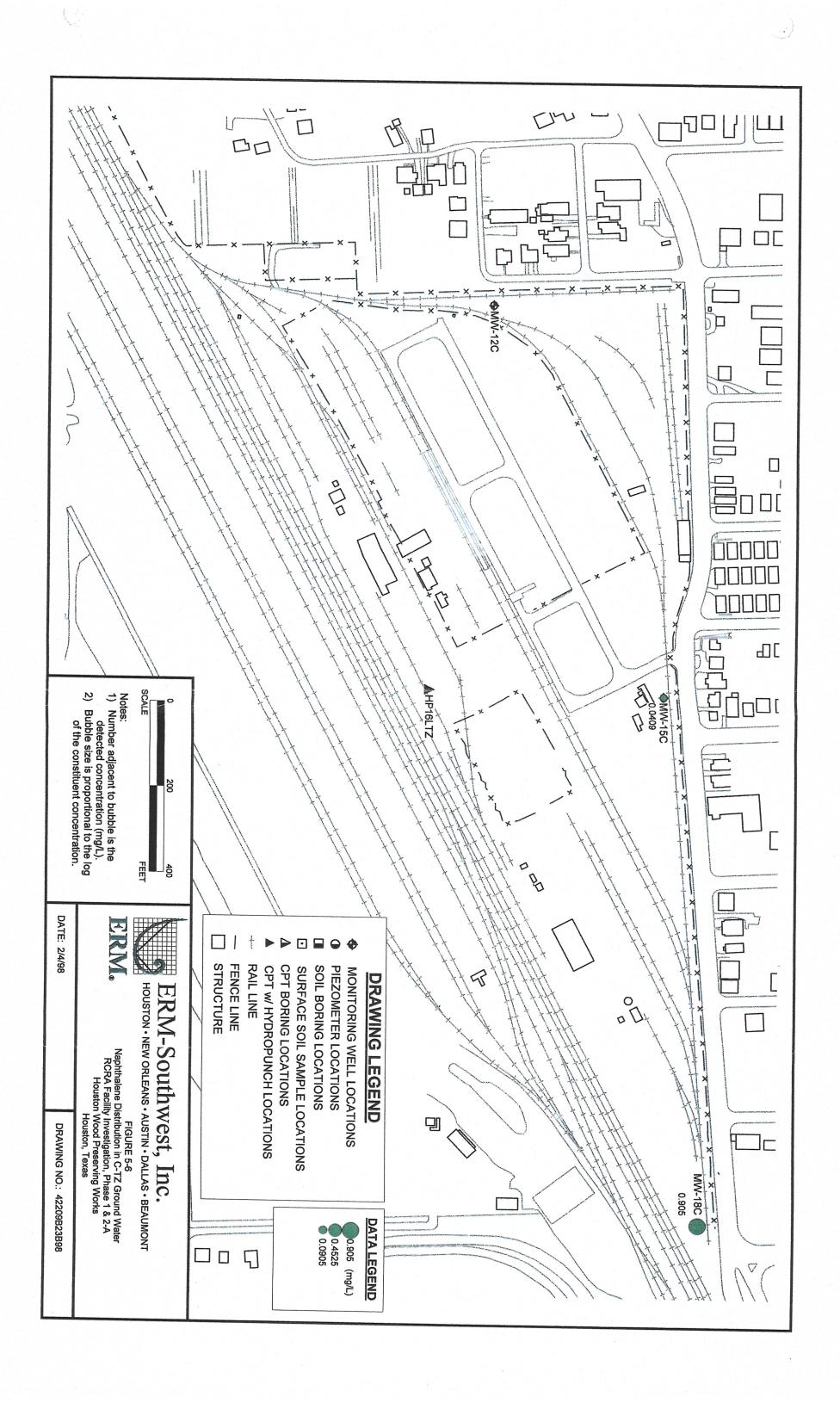












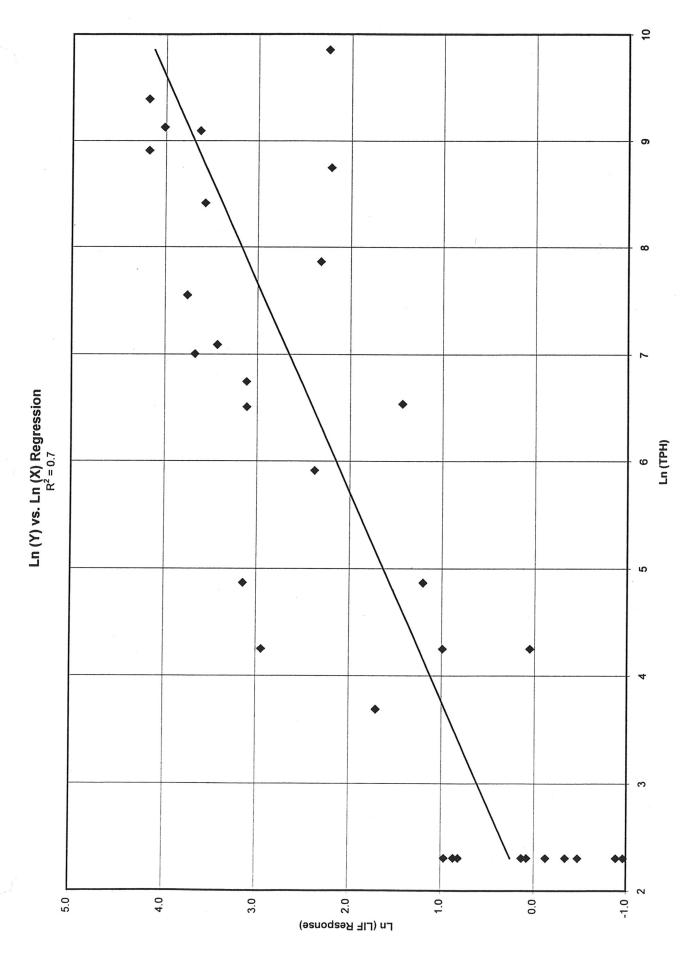


Figure 6-1. Logarithmic transformations and subsequent regression analysis of CPT/ROSTdata.

### **Tables**

TABLE 5-1

#### Constituents of Interest

#### Houston Wood Preserving Works Houston, Texas

Constituent	Practical Quantitation	Method
Acenaphthene	0.010	8270B
Acenaphthylene	0.010	8270B
Anthracene	0.010	8270B
Benzene	0.005	8260A
Benzo(a)anthracene	0.010	8270B
Benzo(a)pyrene	0.010	8270B
Bis(2-ethyl hexyl)phthalate	0.010	8270B
bis(2-Chloroethoxy)methane	0.010	8270B
Chlorobenzene	0.005	8260A
2-Chloronaphthalene	0.010	8270B
Chrysene	0.010	8270B
Dibenzofuran	0.010	8270B
1,2-Dichloroethane	0.005	8260A
Dichloromethane	0.005	8260A
2,4-Dimethylphenol	0.010	8270B
Di-n-butyl phthalate	0.010	8270B
4,6-Dinitro-o-cresol	0.050	8270B
2,4-Dinitrotoluene	0.010	8270B
2,6-Dinitrotoluene	0.010	8270B
1,2-Diphenylhydrazine	0.010	8270B
Ethylbenzene	0.005	8260A
Fluoranthene	0.010	8270B
Fluorene	0.010	8270B
2-Methylnaphthalene	0.010	8270B
Naphthalene	0.010	8270B
Nitrobenzene	0.010	8270B
4-Nitrophenol	0.050	8270B
N-Nitrosodiphenylamine	0.010	8270B
Pentachlorophenol	0.050	8270B
Phenanthrene	0.010	8270B
Phenol	0.010	8270B
Pyrene	0.010	8270B
Toluene	0.005	8260A
Xylenes	0.005	8260A

NOTE:

Practical Quantitation Limits are shown in mg/L.

TABLE 5-2
Surface Soil Analytical Results
Phase 2-A Investigation

Sample Location (a)		<del>\</del> 01		102	-	03	A	04	A	05	A(	)6
Analytical Result	Conc	LOQ	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ
	(m	g/kg)	(m	g/kg)	(mg	/kg)	(mg	g/kg)	(mg	/kg)	(mg	/kg)
Volatile Compounds		-										
Benzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chlorobenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Methylene Chloride	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Toluene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Xylenes (Total)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Semivolatile Compound												
1,2-Diphenylhydrazine	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
2,4-Dimethylphenol	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
2,4-Dinitrotoluene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
2,6-Dinitrotoluene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
2-Chloronaphthalene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
2-Methylnaphthalene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
4,6-Dinitro-o-cresol	ND	12.80	ND	12.80	ND	6.40	ND	32.00	ND	1.60	ND	6.40
4-Nitrophenol	ND	12.80	ND	12.80	ND	6.40	ND	32.00	ND	1.60	ND	6.40
Acenaphthene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Acenaphthylene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Anthracene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Benzo(a)anthracene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Benzo(a)pyrene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
bis(2-Chloroethoxy)methane	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
bis(2-Ethylhexyl)phthalate	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Chrysene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Di-n-butyl phthalate	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND -	0.33	ND	1.32
Dibenzofuran	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Fluoranthene	ND	2.64	9.28	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Fluorene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
N-Nitrosodiphenylamine	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Naphthalene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Nitrobenzene	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Pentachlorophenol	ND	12.80	ND	12.80	ND	6.40	ND	32.00	ND	1.60	ND	6.40
Phenanthrene	ND	2.64	6.12	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Phenol	ND	2.64	ND	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32
Pyrene	ND	2.64	8.16	2.64	ND	1.32	ND	6.60	ND	0.33	ND	1.32

#### NOTES:

Conc. = Reported Concentration LOQ = Limit of Quantitation ND = Non Detect

NS = Not Sampled

(b) Surface soil samples were collected at a depth of 0 to 2 feet.

<sup>(</sup>a) Sample locations begin with the prefix 'SSO' on site maps.

TABLE 5-2
Surface Soil Analytical Results
Phase 2-A Investigation

Sample Location (a)	В	01	В	02	В	03	В	04	В	05	В	06
Analytical Result	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ
	(mg	J/kg)	(mg	/kg)								
Volatile Compounds										-	2 2	
Benzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chlorobenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Methylene Chloride	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Toluene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Xylenes (Total)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Semivolatile Compound												
1,2-Diphenylhydrazine	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
2,4-Dimethylphenol	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
2,4-Dinitrotoluene	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
2,6-Dinitrotoluene	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
2-Chloronaphthalene	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
2-Methylnaphthalene	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
4,6-Dinitro-o-cresol	ND	6.40	ND	1.60	ND	1.60	ND	1.60	ND	6.40	ND	6.40
4-Nitrophenol	ND	6.40	ND	1.60	ND	1.60	ND	1.60	ND	6.40	ND	6.40
Acenaphthene	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Acenaphthylene	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Anthracene	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Benzo(a)anthracene	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Benzo(a)pyrene	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
bis(2-Chloroethoxy)methane	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
bis(2-Ethylhexyl)phthalate	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Chrysene	1.80	1.32	0.38	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Di-n-butyl phthalate	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Dibenzofuran	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Fluoranthene	2.54	1.32	0.50	0.33	ND	0.33	0.67	0.33	ND	1.32	1.37	1.32
Fluorene	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
N-Nitrosodiphenylamine	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Naphthalene	ND :	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Nitrobenzene	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Pentachlorophenol	ND	6.40	ND	1.60	ND	1.60	ND	1.60	ND	6.40	ND	6.40
Phenanthrene	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Phenol	ND	1.32	ND	0.33	ND	0.33	ND	0.33	ND	1.32	ND	1.32
Pyrene	ND	1.32	0.46	0.33	ND	0.33	0.62	0.33	ND	1.32	1.34	1.32

#### NOTES:

Conc. = Reported Concentration

ND = Non Detect

LOQ = Limit of Quantitation

NS = Not Sampled

<sup>(</sup>a) Sample locations begin with the prefix 'SSO' on site maps.

<sup>(</sup>b) Surface soil samples were collected at a depth of 0 to 2 feet.

TABLE 5-2
Surface Soil Analytical Results
Phase 2-A Investigation

Sample Location (a)	(	C01	С	02	(	203		04	C	05	C	06
Analytical Result	Conc	. LOQ	Conc.	LOQ	Conc	LOQ	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ
	(m	g/kg)	(mg	J/kg)	(m	g/kg)	(mg	g/kg)	(mg	/kg)	(mg	ı/kg)
Volatile Compounds							***************************************					
Benzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chlorobenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Methylene Chloride	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Toluene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Xylenes (Total)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Semivolatile Compound												
1,2-Diphenylhydrazine	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
2,4-Dimethylphenol	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
2,4-Dinitrotoluene	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
2,6-Dinitrotoluene	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
2-Chloronaphthalene	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
2-Methylnaphthalene	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
4,6-Dinitro-o-cresol	ND	12.80	ND	1.60	ND	32.00	ND	1.60	ND	1.60	ND	6.40
4-Nitrophenol	ND	12.80	ND	1.60	ND	32.00	ND	1.60	ND	1.60	ND	6.40
Acenaphthene	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
Acenaphthylene	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
Anthracene	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
Benzo(a)anthracene	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
Benzo(a)pyrene	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
bis(2-Chloroethoxy)methane	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
bis(2-Ethylhexyl)phthalate	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
Chrysene	ND	2.64	0.38	0.33	10.10	6.60	ND	0.33	ND	0.33	ND	1.32
Di-n-butyl phthalate	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
Dibenzofuran	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
Fluoranthene	ND	2.64	0.54	0.33	35.20	6.60	ND	0.33	ND	0.33	ND	1.32
Fluorene	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
N-Nitrosodiphenylamine	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
Naphthalene	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
Nitrobenzene	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
Pentachlorophenol	ND	12.80	ND	1.60	ND	32.00	ND	1.60	ND	1.60	ND	6.40
Phenanthrene	ND	2.64	ND	0.33	12.80	6.60	ND	0.33	ND	0.33	ND	1.32
Phenol	ND	2.64	ND	0.33	ND	6.60	ND	0.33	ND	0.33	ND	1.32
Pyrene	ND	2.64	0.47	0.33	20.90	6.60	ND	0.33	ND	0.33	ND	1.32

#### NOTES:

Conc. = Reported Concentration

ND = Non Detect

LOQ = Limit of Quantitation

NS = Not Sampled

<sup>(</sup>a) Sample locations begin with the prefix 'SSO' on site maps.

<sup>(</sup>b) Surface soil samples were collected at a depth of 0 to 2 feet.

TABLE 5-2
Surface Soil Analytical Results
Phase 2-A Investigation

Sample Location (a)	D	01	D	02	F	-07	F	<del>-</del> 08	F	09	F	10
Analytical Result	Conc.	LOQ	Conc.	LOQ	Conc	LOQ	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ
•	(mo	ı/kg)	(ma	/kg)	(m	g/kg)	(m	g/kg)	(mo	/kg)	(m	g/kg)
Volatile Compounds		,,,,,	(11.5			3.1.37		3.1.37	(5	7.197		9/119/
Benzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chlorobenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Methylene Chloride	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Toluene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Xylenes (Total)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Semivolatile Compound												
1,2-Diphenylhydrazine	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
2,4-Dimethylphenol	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
2,4-Dinitrotoluene	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
2,6-Dinitrotoluene	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
2-Chloronaphthalene	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
2-Methylnaphthalene	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
4,6-Dinitro-o-cresol	ND	1.60	ND	1.60	ND	32.00	ND	6.40	ND	6.40	ND	160.00
4-Nitrophenol	ND	1.60	ND	1.60	ND	32.00	ND	6.40	ND	6.40	ND	160.00
Acenaphthene	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
Acenaphthylene	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
Anthracene	0.46	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
Benzo(a)anthracene	0.39	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	44.60	33.00
Benzo(a)pyrene	0.47	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
bis(2-Chloroethoxy)methane	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
bis(2-Ethylhexyl)phthalate	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
Chrysene	0.59	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	57.10	33.00
Di-n-butyl phthalate	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
Dibenzofuran	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
Fluoranthene	1.06	0.33	ND	0.33	ND	6.60	1.46	1.32	ND	1.32	237.00	33.00
Fluorene	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
N-Nitrosodiphenylamine	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
Naphthalene	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
Nitrobenzene	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
Pentachlorophenol	ND	1.60	ND	1.60	ND	32.00	ND	6.40	ND	6.40	ND	160.00
Phenanthrene	0.49	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
Phenol	ND	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	ND	33.00
Pyrene	0.83	0.33	ND	0.33	ND	6.60	ND	1.32	ND	1.32	204.00	33.00

#### NOTES:

Conc. = Reported Concentration

ND = Non Detect

LOQ = Limit of Quantitation

NS = Not Sampled

(b) Surface soil samples were collected at a depth of 0 to 2 feet.

<sup>(</sup>a) Sample locations begin with the prefix 'SSO' on site maps.

TABLE 5-2
Surface Soil Analytical Results
Phase 2-A Investigation

Sample Location (a)	G	07	G	808	G	09	G	10	G	11		11
Analytical Result	Conc.	LOQ										
	(mg	g/kg)	(mg	g/kg)	(mg	g/kg)	(mo	g/kg)	(mc	J/kg)	(mo	g/kg)
Volatile Compounds										, 3,		,
Benzene	NS	NS	NS	· NS	NS	NS	NS	NS	NS	NS	NS	NS
Chlorobenzene	NS											
Ethylbenzene	NS											
Methylene Chloride	NS											
Toluene	NS											
Xylenes (Total)	NS											
Semivolatile Compound												
1,2-Diphenylhydrazine	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
2,4-Dimethylphenol	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
2,4-Dinitrotoluene	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
2,6-Dinitrotoluene	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
2-Chloronaphthalene	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
2-Methylnaphthalene	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
4,6-Dinitro-o-cresol	ND	6.40	ND	8.00	ND	1.60	ND	1.60	ND	6.40	ND	40.00
4-Nitrophenol	ND	6.40	ND	8.00	ND	1.60	ND	1.60	ND	6.40	ND	40.00
Acenaphthene	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
Acenaphthylene	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
Anthracene	4.13	1.32	2.51	1.65	ND	0.33	ND	0.33	ND	1.32	13.00	8.25
Benzo(a)anthracene	ND	1.32	2.72	1.65	ND	0.33	ND	0.33	ND	1.32	10.80	8.25
Benzo(a)pyrene	ND	1.32	1.69	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
bis(2-Chloroethoxy)methane	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
bis(2-Ethylhexyl)phthalate	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
Chrysene	ND	1.32	3.60	1.65	ND	0.33	ND	0.33	ND	1.32	10.80	8.25
Di-n-butyl phthalate	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
Dibenzofuran	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
Fluoranthene	ND	1.32	11.10	1.65	ND	0.33	ND	0.33	ND	1.32	57.80	8.25
Fluorene	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
N-Nitrosodiphenylamine	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
Naphthalene	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
Nitrobenzene	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
Pentachlorophenol	ND	6.40	ND	8.00	ND	1.60	ND	1.60	ND	6.40	ND	40.00
Phenanthrene	ND	1.32	2.63	1.65	ND	0.33	ND	0.33	ND	1.32	60.20	8.25
Phenol	ND	1.32	ND	1.65	ND	0.33	ND	0.33	ND	1.32	ND	8.25
Pyrene	ND	1.32	8.93	1.65	ND	0.33	ND	0.33	1.51	1.32	40.00	8.25

#### NOTES:

Conc. = Reported Concentration

ND = Non Detect

LOQ = Limit of Quantitation

NS = Not Sampled

<sup>(</sup>a) Sample locations begin with the prefix 'SSO' on site maps.

<sup>(</sup>b) Surface soil samples were collected at a depth of 0 to 2 feet.

TABLE 5-2
Surface Soil Analytical Results
Phase 2-A Investigation

Sample Location (a)	MW	-12A	MV	V-13	MV	V-15	MV	V-16	MV	V-18
Analytical Result	Conc.	LOQ								
	(mg	ı/kg)	(mg	J/kg)	(mg	ı/kg)	(mg	g/kg)	(mg	g/kg)
Volatile Compounds	-									
Benzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.62
Chlorobenzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.62
Ethylbenzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	4.20	0.62
Methylene Chloride	ND	0.005	ND	0.005	0.005	0.005	ND	0.005	ND	0.62
Toluene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	1.40	0.62
Xylenes (Total)	ND	0.005	ND	0.005	ND	0.005	ND	0.005	42.00	3.12
Semivolatile Compound										
1,2-Diphenylhydrazine	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
2,4-Dimethylphenol	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
2,4-Dinitrotoluene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
2,6-Dinitrotoluene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
2-Chloronaphthalene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
2-Methylnaphthalene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	6.90	3.30
4,6-Dinitro-o-cresol	ND	1.60	ND	1.60	ND	1.60	ND	16.00	ND	16.00
4-Nitrophenol	ND	1.60	ND	1.60	ND	1.60	ND	16.00	ND	16.00
Acenaphthene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	6.30	3.30
Acenaphthylene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
Anthracene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	9.20	3.30
Benzo(a)anthracene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
Benzo(a)pyrene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
bis(2-Chloroethoxy)methane	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
bis(2-Ethylhexyl)phthalate	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
Chrysene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	3.30	3.30
Di-n-butyl phthalate	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
Dibenzofuran	ND	0.33	ND	0.33	ND	0.33	ND	3.30	4.00	3.30
Fluoranthene	ND	0.33	0.40	0.33	ND	0.33	ND	3.30	16.00	3.30
Fluorene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	5.60	3.30
N-Nitrosodiphenylamine	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
Naphthalene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	46.00	3.30
Nitrobenzene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
Pentachlorophenol	ND	1.60	ND	1.60	ND	1.60	ND	16.00	ND	16.00
Phenanthrene	ND	0.33	0.49	0.33	ND	0.33	ND	3.30	17.00	3.30
Phenol	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	3.30
Pyrene	ND	0.33	ND	0.33	ND	0.33	ND	3.30	9.90	3.30

#### NOTES:

Conc. = Reported Concentration

ND = Non Detect

LOQ = Limit of Quantitation

NS = Not Sampled

<sup>(</sup>a) Sample locations begin with the prefix 'SSO' on site maps.

<sup>(</sup>b) Surface soil samples were collected at a depth of 0 to 2 feet.

# TABLE 5-3 Subsurface Soil Analytical Results Phase 2-A Investigation Houston Wood Preserving Works Houston, Texas

Sample Location	1	MV	MW-12A			MV	/-12B			MV	V-13				MW	-14[B]		
Sample depth	1 2	20 ft	2	25 ft	3	80 ft	4	0 ft	1	5 ft	2	1 ft	1	7 ft	3	5 ft	4	0 ft
Analytical Result	Conc	LOQ	Conc	LOQ	Cana	LOQ	Conc	100	Cono	100	0	100	C	1.00	0	100	0	
Analytical Result		ig/kg)		ig/kg)		g/kg)			Conc		Conc		Conc.		Conc		Conc	
Petroleum Hydrocarbons	NA NA	NA	NA NA	NA	NA	NA	NA NA	g/kg) NA	- NA	g/kg) NA	NA NA	g/kg) NA	NA NA	y/kg) NA	NA NA	g/kg) NA	NA NA	g/kg) NA
Volatile Compound	14/1	147	NA	N/A	INA	IVA	IVA	IVA	IVA	NA	INA	INA	INA	INA	IVA	INA	IVA	IVA
1,2-Dichloroethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chlorobenzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Ethylbenzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Methylene chloride	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Toluene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Xylenes (total)	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Semivolatile Compound	112	0.000	110	0.000	.,,	0.000	140	0.000	110	0.000	140	0.000	,	0.000	ND	0.000	ND	0.003
1,2-Diphenylhydrazine	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
2,4-Dimethylphenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
2,4-Dinitrotoluene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
2,6-Dinitrotoluene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
2-Chloronaphthalene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
?-Methylnaphthalene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	16.00	1.65	ND	0.33	ND	0.33
4,6-Dinitro-o-cresol	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	8.00	ND	1.60	ND	1.60
4-Nitrophenol	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	8.00	ND	1.60	ND	1.60
Acenaphthene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	9.90	1.65	ND	0.33	ND	0.33
Acenaphthylene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
Anthracene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
Benzo(a)anthracene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
Benzo(a)pyrene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
bis(2-Chloroethoxy)methane	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
bis(2-Ethylhexyl)phthalate	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
Chrysene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
Di-n-butyl phthalate	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
Dibenzofuran	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	7.80	1.65	ND	0.33	ND	0.33
Fluoranthene	ND	0.33	ND	0.33	0.62	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
Fluorene	ND	0.33	ND	0.33	0.36	0.33	ND	0.33	ND	0.33	ND	0.33	10.00	1.65	ND	0.33	ND	0.33
N-Nitrosodiphenylamine	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
Naphthalene	ND	0.33	ND	0.33	0.33	0.33	ND	0.33	ND	0.33	ND	0.33	8.60	1.65	ND	0.33	ND	0.33
Nitrobenzene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
Pentachlorophenol	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	8.00	ND	1.60	ND	1.60
Phenanthrene	ND	0.33	ND	0.33	1.10	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33
Phenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	1.65				0.33
Pyrene	ND	0.33	ND	0.33	ND	0.33	ND								ND	0.33	ND	
yrene	ND	0.33	טאו	0.33	טאו	0.33	טאו	0.33	ND	0.33	ND	0.33	ND	1.65	ND	0.33	ND	0.33

<sup>(</sup>a) Subsurface soil samples were collected from greater than 2 feet below ground surface.

<sup>(</sup>b) Conc. = reported concentration; LOQ = limit of quantitation.

<sup>(</sup>c) N/A = not analyzed; ND = non detect

TABLE 5-3
Subsurface Soil Analytical Results
Phase 2-A Investigation
Houston Wood Preserving Works
Houston, Texas

Sample Location	1	MV	N-15			M\	<i>N</i> -16			M	W-17			MV	V-18	
Sample depti	1 2	20 ft	2	25 ft		20 ft		25 ft	2	25 ft	3	30 ft	2	5 ft	3	30 ft
Analytical Result		c. LOQ	Conc (m	LOQ g/kg)	Cond	LOQ		c. LOQ ng/kg)	Conc (m	:. LOQ g/kg)		. LOQ	Conc	. LOQ g/kg)	Conc	: LOQ
Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA.	NA NA	NA.	NA NA	NA NA	NA
Volatile Compound																,
1,2-Dichloroethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.025	ND	0.025	ND	0.005	ND	0.005
Benzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	0.05	0.025	ND	0.025	0.01	0.005	ND	0.005
Chlorobenzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.025	ND	0.025	ND	0.005	ND	0.005
Ethylbenzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	1.2	0.025	0.7	0.025	0.01	0.005	ND	0.005
Methylene chloride	0.01	0.005	0.01	0.005	ND	0.005	ND	0.005	ND	0.025	ND	0.025	ND	0.005	ND	0.005
Toluene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	1	0.025	0.46	0.025	0.01	0.005	ND	0.005
Xylenes (total)	0.01	0.005	ND	0.005	ND	0.005	0.01	0.005	3.5	0.025	2.4	0.025	0.04	0.005	ND	0.005
Semivolatile Compound																
1,2-Diphenylhydrazine	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
2,4-Dimethylphenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
2,4-Dinitrotoluene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
2,6-Dinitrotoluene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
2-Chloronaphthalene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
2-Methylnaphthalene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	32.00	3.30	76.00	9.90	ND	0.33	ND	0.33
4,6-Dinitro-o-cresol	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	16.00	ND	48.00	ND	1.60	ND	1.60
4-Nitrophenol	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	16.00	ND	48.00	ND	1.60	ND	1.60
Acenaphthene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	27.00	3.30	26.00	9.90	ND	0.33	ND	0.33
Acenaphthylene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
Anthracene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	17.00	3.30	21.00	9.90	ND	0.33	ND	0.33
Benzo(a)anthracene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
Benzo(a)pyrene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
bis(2-Chloroethoxy)methane	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
bis(2-Ethylhexyl)phthalate	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
Chrysene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	3.30	3.30	ND	9.90	ND	0.33	ND	0.33
Di-n-butyl phthalate	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
Dibenzofuran	ND	0.33	ND	0.33	ND	0.33	ND	0.33	24.00	3.30	39.00	9.90	ND	0.33	ND	0.33
Fluoranthene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	23.00	3.30	30.00	9.90	ND	0.33	ND	0.33
Fluorene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	28.00	3.30	24.00	9.90	ND	0.33	ND	0.33
N-Nitrosodiphenylamine	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
Naphthalene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	120.00	8.25	260.00	16.50	ND	0.33	ND	0.33
Nitrobenzene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
Pentachlorophenol	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	16.00	ND	48.00	ND	1.60	ND	1.60
Phenanthrene	ND	0.33	ND	0.33	ND	0.33	ND -	0.33	69.00	8.25	92.00	9.90	ND	0.33	ND	0.33
Phenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	9.90	ND	0.33	ND	0.33
Pyrene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	14.00	3.30	17.00	9.90	ND	0.33	ND	0.33

<sup>(</sup>a) Subsurface soil samples were collected from greater than 2 feet below ground surface.

<sup>(</sup>b) Conc. = reported concentration; LOQ = limit of quantitation.

<sup>(</sup>c) N/A = not analyzed: ND = non detect

TABLE 5-3
Subsurface Soil Analytical Results
Phase 2-A Investigation
Houston Wood Preserving Works
Houston, Texas

Sample Location	1	—				S	B02							SE	303	
Sample depti	1	7 ft	2	21 ft	2	24 ft	3	7.5 ft	38	3.5 ft	-	49 ft		5ft	1	9 ft
Analytical Result	Conc	LOQ	Conc	LOQ	Conc	LOQ	Cond	. LOQ	Conc	. LOQ	Conc	LOQ	Conc	. LOQ	Conc	. LOQ
	(m	ıg/kg)	(m	g/kg)	(m	g/kg)	(m	ıg/kg)	(m	g/kg)	(m	ig/kg)	(m	g/kg)	(m	g/kg)
Petroleum Hydrocarbons	20	20	70	20	ND	20	ND	20	130	20	ND	20	670	20	70	20
Volatile Compound																
1,2-Dichloroethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.025	ND	0.005
Benzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.025	ND	0.005
Chlorobenzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.025	ND	0.005
Ethylbenzene	ND	0.005	ND	0.005	ND	0.005	0.01	0.005	0.01	0.005	ND	0.005	ND	0.025	0.04	0.005
Methylene chloride	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.025	0.01	0.005
Toluene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.025	ND	0.005
Xylenes (total)	ND	0.005	ND	0.005	ND	0.005	0.01	0.005	0.01	0.005	ND	0.005	ND	0.025	0.1	0.005
Semivolatile Compound																
1,2-Diphenylhydrazine	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	1.65
2,4-Dimethylphenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	1.65
2,4-Dinitrotoluene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	1.65
2,6-Dinitrotoluene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	1.65
2-Chloronaphthalene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	1.65
2-Methylnaphthalene	ND	0.33	ND	0.33	ND	0.33	1.40	0.33	0.59	0.33	ND	0.33	78.00	16.50	11.00	1.65
4,6-Dinitro-o-cresol	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	16.00	ND	8.00
4-Nitrophenol	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	16.00	ND	8.00
Acenaphthene	ND	0.33	ND	0.33	ND	0.33	2.10	0.33	3.10	0.33	ND	0.33	50.00	3.30	6.10	1.65
Acenaphthylene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	1.65
Anthracene	ND	0.33	ND	0.33	ND	0.33	1.40	0.33	2.00	0.33	ND	0.33	24.00	3.30	3.50	1.65
Benzo(a)anthracene	ND	0.33	ND	0.33	ND	0.33	0.40	0.33	0.56	0.33	ND	0.33	7.90	3.30	ND	1.65
Benzo(a)pyrene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	1.65
bis(2-Chloroethoxy)methane	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	1.65
bis(2-Ethylhexyl)phthalate	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	1.65
Chrysene	ND	0.33	ND	0.33	ND	0.33	0.40	0.33	0.53	0.33	ND	0.33	8.60	3.30	ND	1.65
Di-n-butyl phthalate	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	1.65
Dibenzofuran	ND	0.33	ND	0.33	ND	0.33	1.70	0.33	2.60	0.33	ND	0.33	40.00	3.30	6.40	1.65
Fluoranthene	ND	0.33	ND	0.33	ND	0.33	2.80	0.33	4.00	0.33	ND	0.33	84.00	16.50	7.90	1.65
Fluorene	ND	0.33	ND	0.33	ND	0.33	1.90	0.33	3.10	0.33	ND	0.33	46.00	3.30	5.60	1.65
N-Nitrosodiphenylamine	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	1.65
Naphthalene	ND	0.33	ND	0.33	ND	0.33	3.60	0.33	12.00	3.30	ND	0.33	180.00	16.50	30.00	1.65
Nitrobenzene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30	ND	1.65
Pentachlorophenol	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	16.00	ND	8.00
Phenanthrene	ND	0.33	ND.	0.33	ND	0.33	8.60	0.33	17.00	3.30	ND	0.33	160.00	16.50	16.00	
Phenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	3.30		1.65
Pyrene	ND	0.33	ND	0.33	ND	0.33	1.20	0.33	1.80	0.33	ND	0.33	40.00	3.30	4.30	1.65

<sup>(</sup>a) Subsurface soil samples were collected from greater than 2 feet below ground surface.

<sup>(</sup>b) Conc. = reported concentration; LOQ = limit of quantitation.

<sup>(</sup>c) N/A = not analyzed; ND = non detect

TABLE 5-3 Subsurface Soil Analytical Results Phase 2-A Investigation Houston Wood Preserving Works Houston, Texas

Sample Location	n			SBO	)3						SB04	ı		
Sample dep	th	24 ft		34 ft		52 ft		54 ft		2.5 ft	2	7 ft	2	29 ft
Analytical Result	Con	c. LOQ	Cana	1.00	0	- 100			_					
Analytical Nesult		ig/kg)	Conc.	LOQ mg/kg)		c. LOC		c LOQ	Conc		Conc.			. LOQ
Petroleum Hydrocarbons	- ND		7,400			ng/kg)	_	ng/kg)	(mg/kg			g/kg)		g/kg)
Volatile Compound	110	20	7,400	1.000	ND	20	NA	NA NA	19,000	1000	130	20	70	20
1,2-Dichloroethane	ND	0.005	ND	3.125	ND	0.005	5 NE	0.005	ND	0.005	ND	0.005		
Benzene	ND	0.005		3.125	ND				ND	0.025	ND	0.005		0.005
Chlorobenzene	ND	0.005		3.125	ND	0.005			ND	0.025		0.005		0.005
Ethylbenzene	0.02		46	3.125	0.03				ND ND	0.025	ND	0.005		0.005
Methylene chloride	ND	0.005	ND	3.125	ND	0.005			ND	0.025		0.005	0.03	
Toluene	0.03		32	3.125	0.02				ND	0.025	0.007		0.01	0.005
Xylenes (total)		0.005	170	3.125	0.08		ND		0.07	0.025	0.028	0.005	0.02	0.005
Semivolatile Compound			.,,	0.120	0.00	0.000	ND	0.005	0.07	0.025	0.18	0.005	0.09	0.005
1,2-Diphenylhydrazine	ND	0.33	ND	24.75	ND	0.33	ND	0.33	ND	2.08	ND	1.65	ND	4.05
2,4-Dimethylphenol	ND	0.33	ND	24.75	ND	0.33	ND		ND	2.08	2.30	1.65	ND	1.65
2,4-Dinitrotoluene	ND	0.33	ND	24.75	ND	0.33	ND	0.33	ND	2.08	ND	1.65	ND	1.65
2,6-Dinitrotoluene	ND	0.33	ND	24.75	ND	0.33	ND	0.33	ND	2.08	ND	1.65	ND	1.65 1.65
2-Chloronaphthalene	ND	0.33	ND	24.75	ND	0.33	ND	0.33	ND	2.08	ND	1.65	ND	1.65
2-Methylnaphthalene	1.10	0.33	2200.00		11.00		ND	0.33	320.00	247.50	53.00	8.25	17.00	8.25
4,6-Dinitro-o-cresol	ND	1.60	ND	120.00	ND	1.60	ND	1.60	ND	120.00	ND	8.00	ND	8.00
4-Nitrophenol	ND	1.60	ND	120.00	ND	1.60	ND	1.60	ND	120.00	ND	8.00	ND	8.00
Acenaphthene	1.10	0.33	270.00	24.75	2.90	0.33	ND	0.33	370.00	247.50	16.00	1.65	13.00	1.65
Acenaphthylene	ND	0.33	ND	24.75	ND	0.33	ND	0.33	ND	247.50	ND	1.65	ND	1.65
Anthracene	0.86	0.33	160.00	24.75	1.80	0.33	ND	0.33	250.00	247.50	9.70	1.65	14.00	1.65
Benzo(a)anthracene	ND	0.33	42.00	24.75	0.56	0.33	ND	0.33	130.00	247.50	2.10	1.65	1.80	1.65
Benzo(a)pyrene	ND	0.33	ND	24750.00	ND	0.33	ND	0.33	44.00	247.50	ND	1.65	ND	1.65
bis(2-Chloroethoxy)methane	ND	0.33	ND	24.75	ND	0.33	ND	0.33	ND	247.50	ND	1.65	ND	1.65
bis(2-Ethylhexyl)phthalate	ND	0.33	ND	24.75	ND	0.33	ND	0.33	ND	247.50	ND	1.65	ND	1.65
Chrysene	ND	0.33	42.00	24.75	0.56	0.33	ND	0.33	130.00	247.50	2.10	1.65	1.70	1.65
Di-n-butyl phthalate	ND	0.33	ND	24.75	ND	0.33	ND	0.33	ND	247.50	ND	1.65	ND	1.65
Dibenzofuran	1.20	0.33	240.00	24.75	2.60	0.33	ND	0.33	300.00	247.50	14.00		12.00	1.65
Fluoranthene	1.80	0.33	210.00	24.75	2.90	0.33	ND	0.33	ND	247.50	13.00		11.00	1.65
Fluorene	1.30	0.33	250.00	24.75	3.10	0.33	ND	0.33	370.00	247.50	16.00		14.00	1.65
N-Nitrosodiphenylamine	ND	0.33	ND	24750.00	ND	0.33	ND	0.33	ND	247.50	ND	1.65	ND	1.65
Naphthalene	4.60	0.33	4000.00	500.00	13.00	1.32	0.82	0.33	540.00	2475.00	56.00	8.25	59.00	8.25
Nitrobenzene	ND	0.33	ND	24750.00	ND	0.33	ND	0.33	ND	247.50	ND	1.65	ND	1.65
Pentachlorophenol	ND	1.60	ND	120.00	ND	1.60	ND	1.60	ND	120.00	ND	8.00	ND	8.00
Phenanthrene	3.60	0.33	2500.00	500.00	10.00	1.32	ND	0.33	1600.00	250.00	47.00		46.00	8.25
Phenoi	ND	0.33	ND	24.75	ND	0.33	ND	0.33	ND	2475.00	ND	1.65	ND	1.65
Pyrene	1.20	0.33	190.00	24.75	2.70	0.33	ND .	0.33	ND	2475.00	10.00	1.65	9.80	1.65

<sup>(</sup>a) Subsurface soil samples were collected from greater than 2 feet below ground surface.

<sup>(</sup>b) Conc. = reported concentration; LOQ = limit of quantitation.

<sup>(</sup>c) N/A = not analyzed; ND = non detect

TABLE 5-3
Subsurface Soil Analytical Results
Phase 2-A Investigation
Houston Wood Preserving Works
Houston, Texas

Sample Locatio	n			04								s	B05					
Sample dept	h 3 <sup>-</sup>	1 ft	3	19 ft		51 ft		59 ft	1	9.5 ft	2	24 ft	34	4.5 ft	3	9 ft	5	54 ft
Analytical Result	Conc.	LOG	Conc.	LOQ	Cond	. LOQ	Cond	LOQ	Conc	LOQ	Conc	LOQ	Conc	LOQ	Conc	LOQ	Conc	LOQ
	(mg	J/kg)	(m	g/kg)	(m	ng/kg)	(m	ig/kg)	(m	ıg/kg)	(m	g/kg)	(m	g/kg)	(m	g/kg)	(m	ıg/kg)
Petroleum Hydrocarbons	120	20	NA	NA	40	20	NA	NA	ND	20	ND	20	ND	20	ND	20	NA	NA
Volatile Compound																		
1,2-Dichloroethane	ND	0.625	NA NA	NA	ND	0.025	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Benzene	ND	0.625	NA NA	NA	ND	0.025	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chlorobenzene	ND	0.625	NA	NA	ND	0.025	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Ethylbenzene	1.7	0.625	NA	NA	0.620	0.025	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Methylene chloride	ND	0.625	NA	NA	ND	0.025	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Toluene	0.200	0.625	NA	NA	0.2	0.025	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Xylenes (total)	1.9	0.625	NA	NA	1.9	0.025	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Semivolatile Compound																		
1,2-Diphenylhydrazine	ND	1.65	ND	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
2,4-Dimethylphenol	ND	1.65	ND	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
2,4-Dinitrotoluene	ND	1.65	ND	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
2,6-Dinitrotoluene	ND	1.65	ND	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
2-Chloronaphthalene	ND	1.65	ND	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
2-Methylnaphthalene	29.00	8.25	1100.00	660.00	51.00	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
4,6-Dinitro-o-cresol	ND	8.00	ND	16.00	ND	40.00	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	3.20
4-Nitrophenol	ND	8.00	ND	16.00	ND	40.00	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	3.20
Acenaphthene	23.00	1.65	750.00	660.00	12.00	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Acenaphthylene	ND	1.65	6800.00	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Anthracene	18.00	1.65	470.00	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Benzo(a)anthracene	4.40	1.65	38.00	33.00	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Benzo(a)pyrene	ND	1.65	11.00	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
bis(2-Chloroethoxy)methane	ND	1.65	ND	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
bis(2-Ethylhexyl)phthalate	ND	1.65	ND	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Chrysene	4.40	1.65	ND	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Di-n-butyl phthalate	ND	1.65	ND	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Dibenzofuran	25.00	1.65	750.00	3.30	12.00	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Fluoranthene	20.00	1.65	590.00	660.00	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Fluorene	20.00	1.65	620.00	660.00	9.00	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
N-Nitrosodiphenylamine	ND	1.65	ND	33.00	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Naphthalene	200.00	8.25	4900.00	3.30	73.00	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Nitrobenzene	ND	1.65	ND	660.00	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Pentachlorophenol	ND	8.00	ND	3.30	ND	40.00	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	3.20
Phenanthrene	56.00	8.25	ND	16.00	27.00	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Phenol	ND	1.65	ND	3.30	ND	8.25	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.66
Pyrene	23.00	1.65	430.00	33.00	8.20	8.25	ND	0.33	ND		ND	0.33	ND	0.33	ND	0.33	ND	0.66
														-		-		

<sup>(</sup>a) Subsurface soil samples were collected from greater than 2 feet below ground surface.

<sup>(</sup>b) Conc. = reported concentration; LOQ = limit of quantitation.

<sup>(</sup>c) N/A = not analyzed; ND = non detect

TABLE 5-3
Subsurface Soil Analytical Results
Phase 2-A Investigation
Houston Wood Preserving Works
Houston, Texas

Sample Locatio	n			SB	06				SB07							
Sample dept			19 ft			24 ft		49 ft		2.5 ft		19 ft		1 ft		
,				"		- ,			٤.	<b>2.0</b> II		19 11		. "		
Analytical Result	Conc	. LOQ	Cond	. LOQ	Con	LOQ	Cond	LOQ	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ		
	(m	g/kg)	<u>(n</u>	(mg/kg)		(mg/kg)		ng/kg)	(mg	(mg/kg)		(mg/kg)		g/kg)		
Petroleum Hydrocarbons	690	20	370	370 20		ND 20		NA	6,300	6,300 500		1,900 100		20		
Volatile Compound																
1,2-Dichloroethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.025	ND	0.025	ND	0.025		
Benzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	0.033	0.025	0.23	0.025	0.67	0.025		
Chlorobenzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.025	ND	0.025	ND	0.025		
Ethylbenzene	0.055	0.005	0.04	0.005	ND	0.005	ND	0.005	6.3	0.625	12	0.625	12	0.625		
Methylene chloride	ND	0.005	0.01	0.005	ND	0.005	ND	0.005	ND	0.025	ND	0.025	ND	0.025		
Toluene	0.005	0.005	ND	0.005	ND	0.005	ND	0.005	0.36	0.025	12	0.625	13	0.625		
Xylenes (total)	0.14	0.005	0.07	0.005	ND	0.005	ND	0.005	22	0.625	40	0.625	38	0.625		
Semivolatile Compound																
1,2-Diphenylhydrazine	ND	8.25	ND	6.60	ND	0.33	ND	0.33	ND	24.75	ND	33.00	ND	3.30		
2,4-Dimethylphenol	ND	8.25	ND	6.60	ND	0.33	ND	0.33	ND	24.75	ND	33.00	ND	3.30		
2,4-Dinitrotoluene	ND	8.25	ND	6.60	ND	0.33	ND	0.33	ND	24.75	ND	33.00	ND	3.30		
2,6-Dinitrotoluene	ND	8.25	ND	6.60	ND	0.33	ND	0.33	ND	24.75	ND	33.00	ND	3.30		
2-Chloronaphthalene	ND	8.25	ND	6.60	ND	0.33	ND	0.33	ND	24.75	ND	33.00	ND	3.30		
2-Methylnaphthalene	72.00	8.25	28.00	6.60	ND	0.33	ND	0.33	1300.00	500.00	1700.00	330.00	260.00	165.00		
4,6-Dinitro-o-cresol	ND	40.00	ND	32.00	ND	1.60	ND	1.60	ND	120.00	ND	160.00	ND	16.00		
4-Nitrophenol	ND	40.00	ND	32.00	ND	1.60	ND	1.60	ND	120.00	ND	160.00	ND	16.00		
Acenaphthene	46.00	8.25	18.00	6.60	ND	0.33	ND	0.33	1700.00	500.00	460.00	330.00	400.00	6.60		
Acenaphthylene	ND	8.25	ND	6.60	ND	0.33	ND	0.33	ND	24.75	ND	330.00	ND	3.30		
Anthracene	25.00	8.25	15.00	6.60	ND	0.33	ND	0.33	400.00	24.75	280.00	330.00	220.00	3.30		
Benzo(a)anthracene	8.20	8.25	ND	6.60	ND	0.33	ND	0.33	130.00	24.75	59.00	330.00	17.00	3.30		
Benzo(a)pyrene	ND	8.25	ND	6.60	ND	0.33	ND	0.33	27.00	24.75	ND	330.00	5.00	3.30		
bis(2-Chloroethoxy)methane	ND	8.25	ND	6.60	ND	0.33	ND	0.33	ND	24.75	ND	330.00	ND	3.30		
bis(2-Ethylhexyl)phthalate	ND	8.25	ND	6.60	ND	0.33	ND	0.33	ND	24.75	ND	330.00	ND	3.30		
Chrysene	9.90	8.25	ND	6.60	ND	0.33	ND	0.33	130.00	24.75	56.00	330.00	17.00	3.30		
Di-n-butyl phthalate	ND	8.25	ND	6.60	ND	0.33	ND	0.33	ND	24.75	ND	330.00	ND	3.30		
Dibenzofuran	43.00	8.25	18.00	6.60	ND	0.33	ND	0.33	1100.00		360.00	330.00	300.00	66.00		
Fluoranthene	52.00	8.25	20.00	6.60	0.36	0.33	ND	0.33	2500.00	500.00	330.00	330.00	240.00	3.30		
Fluorene	41.00	8.25	21.00	6.60	ND	0.33	ND	0.33	1600.00	500.00	430.00	330.00	360.00	66.00		
N-Nitrosodiphenylamine	ND	8.25	ND	6.60	ND	0.33	ND	0.33	ND	24.75	ND	330.00	ND	3.30		
Naphthalene	132.00	8.25	61.00	6.60	ND	0.33	ND	0.33	3900.00		7600.00	1650.00	1000.00			
Nitrobenzene	ND	8.25	ND	6.60	ND	0.33	ND	0.33	ND	24.75	ND	330.00	ND	3.30		
Pentachlorophenol	ND	40.00		32.00	ND	1.60	ND	1.60		120.00	ND	160.00	ND	16.00		
Phenanthrene	82.00			6.60	ND	0.33	ND	0.33	4100.00		2600.00	330.00	730.00	66.00		
Phenol	ND	8.25	ND	6.60	ND	0.33	ND	0.33	ND	24.75	ND	330.00	ND	3.30		
Pyrene	30.00	8.25	9.20	6.60	ND	0.33	ND	0.33	1500.00		280.00	330.00	200.00	3.30		

<sup>(</sup>a) Subsurface soil samples were collected from greater than 2 feet below ground surface.

<sup>(</sup>b) Conc. = reported concentration; LOQ = limit of quantitation.

<sup>(</sup>c) N/A = not analyzed; ND = non detect

TABLE 5-3
Subsurface Soil Analytical Results
Phase 2-A Investigation
Houston Wood Preserving Works
Houston, Texas

Sample Location	n	SB			SB08										
Sample dept	th 22 ft		24 ft		4 ft		14 ft		18 ft		21 ft		2	2 ft	
Analytical Result	Conc	LOQ	Conc	. LOQ	Conc	. LOQ	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ	
	(n	ng/kg)	(mg/kg)		(mg/kg)		(mg/kg)		(mg	(mg/kg)		(mg/kg)		g/kg)	
Petroleum Hydrocarbons	1,100	20	9,200	1000	2,600	500	850	20	8,900	500	4,500	100	21,000	500	
Volatile Compound															
1,2-Dichloroethane	ND	0.625	ND	6.250	ND	0.005	ND	0.005	ND	0.625	ND	0.005	ND	0.005	
Benzene	ND	0.625	ND	6.250	ND	0.005	0.071	0.005	1.1	0.625	ND	0.005	0.057	0.005	
Chlorobenzene	ND	0.625	ND	6.250	ND	0.005	ND	0.005	ND	0.625	ND	0.005	ND	0.005	
Ethylbenzene	9.1	0.625	31	6.250	0.024	0.005	3.4	0.625	19	0.625	0.074	0.005	12	0.625	
Methylene chloride	ND	0.625	ND	6.250	ND	0.005	ND	0.005	ND	0.625	ND	0.005	ND	0.005	
Toluene	9.8	0.625	31	6.250	ND	0.005	2.6	0.625	13	0.625	0.036	0.005	7.5	0.625	
Xylenes (total)	28	0.625	90	6.250	0.046	0.005	11	0.625	55	0.625	0.23	0.005	43	0.625	
Semivolatile Compound															
1,2-Diphenylhydrazine	ND	330.00	ND	2.48	ND	33.00	ND	330.00	ND	2.48	ND	165.00	ND	247.50	
2,4-Dimethylphenol	ND	330.00	ND	2.48	ND	33.00	ND	330.00	25.00	2.48	ND	165.00	ND	247.50	
2,4-Dinitrotoluene	ND	330.00	ND	2.48	ND	33.00	ND	330.00	ND	2.48	ND	165.00	ND	247.50	
2,6-Dinitrotoluene	ND	330.00	ND	2.48	ND	33.00	ND	330.00	ND	2.48	ND	165.00	ND	247.50	
2-Chloronaphthalene	ND	330.00	ND	2.48	ND	33.00	ND	330.00	ND	2.48	ND	165.00	ND	247.50	
2-Methylnaphthalene	790.00	330.00	3.70	2.48	420.00	33.00	360.00	330.00	400.00	2.48	350.00	165.00	420.00	247.50	
4,6-Dinitro-o-cresol	ND	1600.00	ND	12.00	ND	160.00	ND	1600.00	ND	12.00	ND	800.00	ND	1200.00	
4-Nitrophenol	ND	1600.00	ND	12.00	ND	160.00	ND	1600.00	ND	12.00	ND	800.00	ND	1200.00	
Acenaphthene	630.00	330.00	3.20	2.48	450.00	330.00	ND	330.00	320.00	2.48	200.00	165.00	400.00	247.50	
Acenaphthylene	ND	330.00	ND	2.48	ND	33.00	ND	330.00	ND	2.48	ND	165.00	ND	247.50	
Anthracene	ND	330.00	ND	2.48	480.00	33.00	ND	330.00	200.00	2.48	580.00	165.00	ND	247.50	
Benzo(a)anthracene	ND	330.00	ND	2.48	160.00	33.00	ND	330.00	37.00	2.48	ND	165.00	ND	247.50	
Benzo(a)pyrene	ND	330.00	ND	2.48	62.00	33.00	ND	330.00	ND	2.48	ND	165.00	ND	247.50	
bis(2-Chloroethoxy)methane	ND	330.00	ND	2.48	ND	33.00	ND	330.00	ND	2.48	ND	165.00	ND	247.50	
bis(2-Ethylhexyl)phthalate	ND	330.00	ND	2.48	ND	33.00	ND	330.00	ND	2.48	ND	165.00	ND	247.50	
Chrysene	ND	330.00	ND	2.48	180.00	33.00	ND	330.00	37.00	2.48	ND	165.00	ND	247.50	
Di-n-butyl phthalate	ND	330.00	ND	2.48	ND	33.00	ND	330.00	ND	2.48	ND	165.00	ND	247.50	
Dibenzofuran	470.00	330.00	2.50	2.48	600.00	330.00	ND	330.00	270.00	2.48	230.00	165.00	300.00	247.50	
Fluoranthene	380.00	330.00	2.50	2.48	430.00	33.00	ND	330.00	250.00	2.48	ND	165.00	300.00	247.50	
Fluorene	560.00	330.00	2.70	2.48	460.00	330.00	330.00	330.00	300.00	2.48	180.00	165.00	350.00	247.50	
N-Nitrosodiphenylamine	ND	330.00	ND	2.48	ND	33.00	ND	330.00	ND	2.48	ND	165.00	ND	247.50	
Naphthalene	5300.00	330.00	42.00	2.48	970.00	33.00	4600.00	330.00	17000.00	990.00	20000.00	165.00		1320.00	
Nitrobenzene	ND	330.00	ND	2.48	ND	33.00	ND	330.00	ND	2.48	ND	165.00	ND	247.50	
Pentachlorophenol	ND	1600.00	ND	12.00	ND	160.00	ND	1600.00	ND	120.00	ND	800.00	ND	1200.00	
Phenanthrene	1200.00	330.00	6.90	2.48	930.00	330.00	590.00	330.00	1400.00	99.00	610.00	165.00	840.00	247.50	
Phenol	ND	330.00	ND	2.48	ND	33.00	ND	330.00	ND	2.48	ND	165.00	ND	247.50	
Pyrene	ND	330.00	ND	2.48	ND	33.00	ND	330.00	160.00	2.48	ND	165.00	ND	247.50	

<sup>(</sup>a) Subsurface soil samples were collected from greater than 2 feet below ground surface.

<sup>(</sup>b) Conc. = reported concentration; LOQ = limit of quantitation.

<sup>(</sup>c) N/A = not analyzed; ND = non detect

TABLE 5-3
Subsurface Soil Analytical Results
Phase 2-A Investigation
Houston Wood Preserving Works
Houston, Texas

Sample Location	AOC3-W		AOC3-E		AOC4-SE		AOC4-SW		AOC4-NE		AOC4-NW		AOC5-E		AOC7		
Sample depth	n 5 FT		5 FT		5 FT		5 FT		5 FT		5 FT		5 FT		5 FT		
Applytical Beauty	0		0		0		•										
Analytical Result		LOQ		LOQ	Conc		Con		Con	LOQ	Con	LOQ		. LOQ	Conc.	LOQ	
Petroleum Hydrocarbons		MA NA		(mg/kg)		(mg/kg)		(mg/kg)		(mg/kg)		(mg/kg)		(mg/kg)		(mg/kg)	
Volatile Compound	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1000	
1,2-Dichloroethane	NIA	0.005	NIA	0.005		0.005											
Benzene	NA	0.005	NA		NA	0.005	NA			0.005	NA		NA	0.005	NA	0.005	
Chlorobenzene	NA NA	0.005	NA	0.005	NA	0.005	NA		NA		NA		NA	0.005	NA	0.005	
Ethylbenzene	NA	0.005	NA	0.005	NA	0.005	NA		NA		NA		NA	0.005	NA	0.005	
Methylene chloride	NA	0.005	NA	0.005	NA	0.005	NA	0.005	NA		NA		NA	0.625	NA	0.005	
Toluene			NA		NA	0.005	NA		NA		NA		NA	0.005	NA	0.005	
Xylenes (total)	NA NA	0.005	NA NA		NA	0.005	NA	0.005	NA	0.005	NA	0.005	NA	0.005	NA	0.005	
Semivolatile Compound	INA	0.005	INA	0.005	NA	0.005	NA	0.005	NA	0.005	NA	0.005	NA	0.625	NA	0.005	
1,2-Diphenylhydrazine	ND	3.30	ND	0.22	ND	0.00	ND	0.00	ND	0.00							
2,4-Dimethylphenol	ND	3.30	ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
2,4-Dinitrotoluene	ND	3.30	ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
2,6-Dinitrotoluene	ND	3.30		0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
2-Chloronaphthalene			ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
	ND E 00	3.30	ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
2-Methylnaphthalene	5.00	3.30	ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
4,6-Dinitro-o-cresol	ND	16.00	ND	1.60	ND	3.20	ND	1.60	ND	1.60	ND	3.20	ND	16.00	ND	800.00	
4-Nitrophenol	ND	16.00	ND	1.60	ND	3.20	ND	1.60	ND	1.60	ND	3.20	ND	16.00	ND	800.00	
Acenaphthene	8.80	3.30	ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	270.00	165.00	
Acenaphthylene	ND	3.30	ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
Anthracene	8.60	3.30	ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	460.00	165.00	
Benzo(a)anthracene	3.60	3.30	ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	21.50	3.30	220.00	165.00	
Benzo(a)pyrene	ND	3.30	ND ·	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	17.80	3.30	ND	165.00	
bis(2-Chloroethoxy)methane	ND	3.30	ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
bis(2-Ethylhexyl)phthalate	ND	3.30	ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
Chrysene Di a butul abthalata	3.50	3.30	ND	0.33	0.92	0.66	ND	0.33	ND	0.33	ND	0.66	34.00	3.30	210.00	165.00	
Di-n-butyl phthalate	ND	3.30	ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
Dibenzofuran	6.70	3.30	ND	0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	190.00		
Fluoranthene	20.00	3.30	ND	0.33	2.80	0.66	ND	0.33	ND	0.33	ND	0.66	50.90	3.30	1100.00		
Fluorene	12.00	3.30		0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	330.00		
N-Nitrosodiphenylamine	ND	3.30		0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
Naphthalene	ND	3.30		0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	220.00	165.00	
Nitrobenzene	ND	3.30		0.33	ND	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
Pentachiorophenol	ND	16.00		1.60	ND	3.20	ND	1.60	ND	1.60	ND	3.20	ND	16.00	ND	800.00	
Phenanthrene	36.00			0.33	1.10	0.66	ND	0.33	ND	0.33	ND	0.66	ND	3.30	950.00	165.00	
Phenol	ND	3.30		0.33	ND	0.66		0.33	ND	0.33	ND	0.66	ND	3.30	ND	165.00	
Pyrene	13.00	3.30	ND	0.33	3.60	0.66	ND	0.33	ND	0.33	ND	0.66	58.30	3.30	880.00	165.00	

<sup>(</sup>a) Subsurface soil samples were collected from greater than 2 feet below ground surface.

<sup>(</sup>b) Conc. = reported concentration; LOQ = limit of quantitation.

<sup>(</sup>c) N/A = not analyzed; ND = non detect

TABLE 5-4
Soil Leachate Testing Results
Phase 2-A Investigation

Sample Location	180	SB03		SB04	SB06
Sample depth	5 ft	19 ft	24 ft	51 ft	19 ft
Analytical Result	Conc.	Conc.	Conc.	Conc.	Conc.
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Compound			- Character of the Landson Company		
1,2-Dichloroethane	ND	ND	ND	ND	ND
Benzene	ND	ND	0.024	ND	0.016
Chlorobenzene	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	0.036	ND
Methylene chloride	ND	ND	0.03	ND	ND
Toluene	ND	ND	0.26	0.12	ND
Xylenes (total)	ND	ND	0.011	0.10	ND
Semivolatile Compound					
1,2-Diphenylhydrazine	ND	ND	ND	ND	ND
2,4-Dimethylphenol	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND ·	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	0.041	0.044	1.6	0.1
4,6-Dinitro-o-cresol	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND
Acenaphthene	ND	0.04	0.085	0.38	0.1
Acenaphthylene	ND	ND	ND	ND	ND
Anthracene	ND	ND	0.031	ND	0.026
Benzo(a)anthracene	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND
Di-n-butyl phthalate	ND	ND	ND	ND	ND
Dibenzofuran	ND	0.035	0.06	0.35	0.096
Fluoranthene	ND	0.01	0.032	ND	0.035
Fluorene	ND	0.028	0.088	0.28	0.09
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND
Naphthalene	ND	0.075	ND	2.2	0.36
Nitrobenzene	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	ND	ND
Phenanthrene	ND.	0.054	0.17	0.82	0.14
Phenol	ND	ND	ND	ND	ND
Pyrene	ND	ND	0.015	0.25	0.018

TABLE 5-5
Geotechnical Sample Results
Phase 2-A Investigation

Lithologic Unit	Sample Location	Sample Depth (bgs)	Dry Density (lb/ft³)	Moisture Content (%)	Specific Gravity (g/cm <sup>3</sup> )	Fraction Organic Carbon (%)	pН
A-CZ	MW-14[B]	5	115.0	15.6	2.667	3.0	7.3
A-TZ	MW-14[B] SB02	15 21	105.8 97.4	20.4 25.9	2.673 2.653	0.4 0.3	7.5 7.8
	Average A-TZ	18	101.6	23.15	2.663	0.3	7.6
B-CZ	MW-12B MW-14 SB06 SB02	30 28 55 38	102.6 109.9 99.3 96.9	19.7 18.6 25.3 25.9	2.680 2.686 2.779 2.695	0.6 1.7 2.1 1.9	7.7 7.3 7.5 7.9
B-TZ	Average B-CZ MW-14	38 35	102.2 99.2	22.4 23.4	<ul><li>2.710</li><li>2.675</li></ul>	0.6	7.6 7.8
C-CZ	MW-12B MW-14 Average C-CZ	43 43.5 43	102.7 101.8 101.2	23.0 24.4 23.7	2.754 2.755 2.754	2.5 2.6 2.5	7.3 7.5 7.4

NOTE:

ft btgs = feet below ground surface

TABLE 5-6
Summary of Well Completion Data

Well Designation	Transmissive Zone	Top Of Casing Elev. (ft MSL)	Installation Date	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Total Depth of Boring (ft bgs)
MW-01	A-TZ	47.95	4/17/84	8.5	18.5	18.5
MW-02 MW-03	A-TZ A-TZ	48.03 48.55	4/17/84	8.5	18.5	18.5
MW-04	A-TZ A-TZ	49.85	4/17/84	8.5	18.5	18.5
MW-05	A-TZ A-TZ	49.35	4/18/84 3/27/91	11 10	21 25	21
MW-07	A-TZ A-TZ	48.86	3/27/91	14.1	19.1	26
MW-08	A-TZ A-TZ	49.37	3/27/91	14.1	19.1	23 24
MW-09	A-TZ	49.29	3/26/91	14.2	19.2	24
MW-10A	A-TZ	49.90	9/13/94	11	20.5	23
MW-10B	B-TZ	49.97	9/14/94	27.1	41.6	46
MW-11A	A-TZ	50.04	9/15/94	10	19.3	22
MW-11B	B-TZ	50.19	9/19/94	27.5	41.2	44
MW-12A	A-TZ	49.96	2/27/97	13	27.5	30
MW-12B	B-TZ	50.02	2/27/97	28	42.5	45
MW-12C	C-TZ	50.14	4/21/97	69	73.5	75.3
MW-13	A-TZ	50.65	2/25/97	9	22.5	25
MW-14	A-TZ	50.66	2/27/97	28	42.5	45
MW-15A	A-TZ	50.41	2/25/97	12	26.1	30
MW-15C	C-TZ	50.01	4/25/97	64	73.5	75
MW-16	A-TZ	51.51	2/26/97	12.5	27	30
MW-17	A-TZ	50.92	3/25/97	18	32.5	35
MW-18A	A-TZ	51.57	2/26/97	18	32.5	35
MW-18C	C-TZ	51.47	4/25/97	62	76.5	80.2
P-10	B-TZ	47.72	6/13/91	36.2	38.2	50
P-11	B-TZ	49.02	6/13/91	36.2	38.2	50
P-12	B-TZ	48.82	6/13/91	36.3	38.3	50

NOTES:

bgs = below ground surface MSL = mean sea level

TABLE 5-7
Gound Water Analytical Results - Monitor Wells
Phase 2-A Investigation
Houston Wood Preserving Works
Houston, Texas

Sample Location:			MW1	2			M	W13	MW14[B]				
Transmissive Zone:	A-	ΓZ	B-1	ΓZ	С	-TZ	A	-TZ		-TZ			
Analytical Result:	Conc.	LOQ	Conc.	LOQ	Conc.	LOQ	Conc	LOQ	Conc.	LOQ			
	(mg	J/L)	(mg	/L)	(m	g/L)	(n	ng/L)	(m	g/L)			
Total Disolved Solids	705	5	1088	5	1,566	10	738	5	1020	5			
Volatile Compound													
1,2-Dichloroethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005			
Benzene	ND	0.005	0.0065	0.005	ND	0.005	ND	0.005	ND	0.005			
Chlorobenzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005			
Ethylbenzene	0.0171	0.005	0.0276	0.005	ND	0.005	ND	0.005	ND	0.005			
Methylene chloride	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005			
Toluene	0.0085	0.005	0.0065	0.005	ND	0.005	ND	0.005	ND	0.005			
Xylenes (total)	0.0281	0.005	0.0287	0.005	ND	0.005	ND	0.005	ND	0.005			
Semivolatile Compound													
1,2-Diphenylhydrazine	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
2,4-Dimethylphenol	0.012	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
2,4-Dinitrotoluene	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
2,6-Dinitrotoluene	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
2-Chloronaphthalene	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
2-Methylnaphthalene	0.397	0.100	0.233	0.100	ND	0.100	ND	0.100	ND	0.100			
4,6-Dinitro-o-cresol	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050			
4-Nitrophenol	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050			
Acenaphthene	0.186	0.100	0.216	0.100	ND	0.010	ND	0.100	ND	0.100			
Acenaphthylene	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Anthracene	0.016	0.010	0.020	0.010	ND	0.010	ND	0.010	ND	0.010			
Benzo(a)anthracene	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Benzo(a)pyrene	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
bis(2-Chloroethoxy)methane	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
bis(2-Ethylhexyl)phthalate	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Chrysene	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Di-n-butyl phthalate	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Dibenzofuran	0.148	0.100	0.158	0.100	ND	0.010	ND	0.100	ND	0.100			
Fluoranthene	0.018	0.010	0.022	0.010	ND	0.010	ND	0.010	ND	0.010			
Fluorene	0.125	0.100	0.154	0.100	ND	0.010	ND	0.100	ND	0.100			
N-Nitrosodiphenylamine	ND	0.100	ND	0.100	ND	0.010	ND	0.100	~ND	0.100			
Naphthalene	5.210	2.000	2.440	1.000	ND	0.010	ND	0.100	ND	0.100			
Nitrobenzene	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Pentachlorophenol	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050			
Phenanthrene	0.133	0.100	0.144	0.100	ND	0.100	ND	0.100	ND	0.100			
Phenol	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Pyrene	ND	0.010	0.010	0.010	ND	0.010	ND	0.010	ND	0.010			

<sup>(</sup>a) Samples collected on May 13 and 14, 1997.

TABLE 5-7
Gound Water Analytical Results - Monitor Wells
Phase 2-A Investigation
Houston Wood Preserving Works
Houston, Texas

Analytical Result:	Sample Location:	MV			V15	MW16			MW17			
Total Disolved Solids	Transmissive Zone:			C-	C-TZ		A-TZ		A-	-TZ		
Total Disolved Solids	Analytical Result:					Co						
Volatile Compound   1,2-Dichloroethane		(mg	3/L)	(m	g/L)	-	(mg	<u>J/L)</u>	(m	g/L)		
1,2-Dichloroethane		945	5	705	5	5	38	5	758	5		
Benzene         0.0068         0.005         ND         0.005         DO         0.025         CLS												
Chlorobenzene         ND         0.005         ND         0.005         ND         0.005         DO         0.025         CLD	1,2-Dichloroethane		0.005	ND	0.005	N	D	0.005	ND	0.025		
Ethylbenzene         0.0151         0.005         ND         0.005         0.0321         0.005         ND         0.025           Methylene chloride         ND         0.005         ND         0.005         ND         0.005         ND         0.025           Toluene         ND         0.005         ND         0.005         0.0083         0.005         0.780         0.025           Xylenes (total)         0.0238         0.005         0.005         0.0666         0.005         0.105         0.025           Semivolatile Compound         1.2-Diphenylhydrazine         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2.4-Dimethylphenol         ND         0.010         ND         0.010         ND         0.010         ND         0.10         ND         0.500           2.4-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2.6-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.050           2.6-Dini	Benzene	0.0068	0.005	ND	0.005	0.0	101	0.005	0.580	0.025		
Methylene chloride         ND         0.005         ND         0.005         ND         0.005         ND         0.005         ND         0.005         0.0083         0.005         0.780         0.025           Toluene         ND         0.005         0.005         0.005         0.005         0.005         0.025         0.025           Xylenes (total)         0.0238         0.005         0.020         0.005         0.0666         0.005         0.105         0.025           Semivolatile Compound         1         2-Diphenylhydrazzine         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2,4-Dimethylphenol         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2,4-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2,5-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2,6-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0		ND	0.005	ND	0.005	N	D	0.005	ND	0.025		
Toluene         ND         0.005         ND         0.005         0.0083         0.005         0.780         0.025           Xylenes (total)         0.0238         0.005         0.02         0.005         0.0666         0.005         0.105         0.025           Semivolatile Compound         Value         Value<	Ethylbenzene	0.0151	0.005	ND	0.005	0.0	321	0.005	0.205	0.025		
Xylenes (total)         0.0238         0.005         0.02         0.005         0.0666         0.005         0.105         0.025           Semivolatile Compound         1,2-Diphenylhydrazine         ND         0.010         ND         0.010         ND         0.010         ND         0.050           2,4-Dimethylphenol         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.050           2,4-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.050           2,6-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2-Chloronaphthalene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2-Methylnaphthalene         0.138         0.100         0.020         0.100         0.039         0.100         0.711         0.500           4,6-Dinitro-o-cresol         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         0.050 <td>Methylene chloride</td> <td>ND</td> <td>0.005</td> <td>ND</td> <td>0.005</td> <td>N</td> <td>D</td> <td>0.005</td> <td>ND</td> <td>0.025</td>	Methylene chloride	ND	0.005	ND	0.005	N	D	0.005	ND	0.025		
Semivolatile Compound   1,2-Diphenylhydrazine	Toluene	ND	0.005	ND	0.005	0.0	083	0.005	0.780	0.025		
1,2-Diphenylhydrazine         ND         0.010         ND         0.010         ND         0.500           2,4-Dimethylphenol         ND         0.010         ND         0.010         0.029         0.010         7.140         2.500           2,4-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2,6-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2-Chloronaphthalene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2-Methylnaphthalene         0.138         0.100         0.020         0.100         0.039         0.100         0.711         0.500           4,6-Dinitro-o-cresol         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         0.500           4-Ritrophenol         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         0.500           Acenaphthylene<	Xylenes (total)	0.0238	0.005	0.02	0.005	0.0	366	0.005	0.105	0.025		
2,4-Dimethylphenol         ND         0.010         ND         0.010         0.029         0.010         7.140         2.500           2,4-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.050           2,6-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2-Chloronaphthalene         ND         0.010         ND         0.010         ND         0.010         ND         0.050           2-Methylnaphthalene         0.138         0.100         0.020         0.100         0.039         0.100         0.711         0.500           4-Nitrophenol         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         2.500           Acenaphthene         0.142         0.100         ND         0.050         ND         0.050         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)anthracene	Semivolatile Compound											
2,4-Dinitrotoluene         ND         0.010         ND         0.050           2-Chloronaphthalene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2-Methylnaphthalene         0.138         0.100         0.020         0.100         0.039         0.100         0.711         0.500           4,6-Dinitro-o-cresol         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         0.500           4-Nitrophenol         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)anthracene         ND         0.010         ND         0.010         ND         0.010         ND	1,2-Diphenylhydrazine	ND	0.010	ND	0.010	N	D	0.010	ND	0.500		
2,6-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2-Chloronaphthalene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2-Methylnaphthalene         0.138         0.100         0.020         0.100         0.039         0.100         0.711         0.500           4,6-Dinitro-o-cresol         ND         0.050         ND         0.050         ND         0.050         ND         0.500           4-Nitrophenol         ND         0.050         ND         0.050         ND         0.050         ND         0.500           Acenaphthene         0.142         0.100         0.038         0.100         0.139         0.100         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)anthracene         ND         0.010         ND         0.010         ND         0.010	2,4-Dimethylphenol	ND	0.010	ND	0.010	0.0	29	0.010	7.140	2.500		
2,6-Dinitrotoluene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2-Chloronaphthalene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2-Methylnaphthalene         0.138         0.100         0.020         0.100         0.039         0.100         0.711         0.500           4,6-Dinitro-o-cresol         ND         0.050         ND         0.050         ND         0.050         ND         0.500           4-Nitrophenol         ND         0.050         ND         0.050         ND         0.050         ND         0.500           Acenaphthene         0.142         0.100         0.038         0.100         0.139         0.100         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         <	2,4-Dinitrotoluene	ND	0.010	ND	0.010	N	D	0.010	ND	0.500		
2-Chloronaphthalene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           2-Methylnaphthalene         0.138         0.100         0.020         0.100         0.039         0.100         0.711         0.500           4,6-Dinitro-o-cresol         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         2.500           4-Nitrophenol         ND         0.050         ND         0.050         ND         0.050         ND         0.500           Acenaphthene         0.142         0.100         0.038         0.100         0.139         0.100         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Acenaphthylene         ND         0.010         ND	2,6-Dinitrotoluene	ND	0.010	ND	0.010	N	D	0.010	ND			
2-Methylnaphthalene         0.138         0.100         0.020         0.100         0.039         0.100         0.711         0.500           4,6-Dinitro-o-cresol         ND         0.050         ND         0.050         ND         0.050         ND         0.250           4-Nitrophenol         ND         0.050         ND         0.050         ND         0.050         ND         0.250           Acenaphthene         0.142         0.100         0.038         0.100         0.139         0.100         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Anthracene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)anthracene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)pyrene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           bis(2-Ethylhexyl)phthalate         ND         0.010	2-Chloronaphthalene	ND	0.010	ND	0.010	N	D	0.010	ND			
4,6-Dinitro-o-cresol         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         0.050         ND         2.500           4-Nitrophenol         ND         0.050         ND         0.050         ND         0.050         ND         2.500           Acenaphthene         0.142         0.100         0.038         0.100         0.139         0.100         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Anthracene         ND         0.010         ND         0.016         0.010         ND         0.500           Benzo(a)anthracene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)pyrene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)pyrene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND	2-Methylnaphthalene	0.138	0.100	0.020	0.100	0.0	39	0.100	0.711			
4-Nitrophenol         ND         0.050         ND         0.050         ND         0.050         ND         0.250           Acenaphthene         0.142         0.100         0.038         0.100         0.139         0.100         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Anthracene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)anthracene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)pyrene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)pyrene         ND         0.010         ND         0.050         ND         0.500	4,6-Dinitro-o-cresol	ND	0.050	ND	0.050	N	D					
Acenaphthene         0.142         0.100         0.038         0.100         0.139         0.100         ND         0.500           Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Anthracene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)anthracene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)pyrene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)pyrene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           bis(2-Chloroethoxy)methane         ND         0.010         ND         0.500           Chrysene         ND         0.010	4-Nitrophenol	ND	0.050	ND	0.050	N	D	0.050	ND			
Acenaphthylene         ND         0.010         ND         0.010         ND         0.010         ND         0.0500           Anthracene         ND         0.010         ND         0.010         0.016         0.010         ND         0.500           Benzo(a)anthracene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Benzo(a)pyrene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           bis(2-Chloroethoxy)methane         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           bis(2-Ethylhexyl)phthalate         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Chrysene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Dibenzofuran         0.042         0.100         ND         0.010         ND         0.020         ND         0.500           F	Acenaphthene	0.142	0.100	0.038	0.100	0.1	39	0.100				
Anthracene         ND         0.010         ND         0.010         0.016         0.010         ND         0.500           Benzo(a)anthracene         ND         0.010         ND         0.010         ND         0.010         ND         0.0500           Benzo(a)pyrene         ND         0.010         ND         0.0500         ND         0.500         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.0500         ND         0.0500         ND         0.010         ND         0.010         ND         0.010         ND         0.0500         ND         0.500         ND         0.010         ND         0.010         ND         0.0500         ND         0.0500         ND         0.0500         ND         0.0500         ND         0.0500         ND         0.0500         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.010<	Acenaphthylene	ND	0.010	ND	0.010	N	)	0.010	ND			
Benzo(a)anthracene         ND         0.010         ND         0.010         ND         0.010         ND         0.0500           Benzo(a)pyrene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           bis(2-Chloroethoxy)methane         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.050           bis(2-Ethylhexyl)phthalate         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Chrysene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Di-n-butyl phthalate         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Dibenzofuran         0.042         0.100         0.104         0.020         0.080         0.020         ND         0.500           Fluorenthene         ND         0.010         ND         0.010         ND         0.026         0.010         ND         0.500           N-Nitrosod	Anthracene	ND	0.010	ND	0.010	0.0	16					
Benzo(a)pyrene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           bis(2-Chloroethoxy)methane         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.0500           bis(2-Ethylhexyl)phthalate         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Chrysene         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Di-n-butyl phthalate         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Dibenzofuran         0.042         0.100         0.104         0.020         0.080         0.020         ND         0.500           Fluoranthene         ND         0.010         ND         0.010         ND         0.026         0.010         ND         0.500           Fluorene         0.043         0.100         ND         0.100         ND         0.083         0.010         ND         0.500           N-Nitrosodiphenylamine         <	Benzo(a)anthracene	ND	0.010	ND		NI	)					
bis(2-Chloroethoxy)methane         ND         0.010         ND         0.010         ND         0.010         ND         0.500           bis(2-Ethylhexyl)phthalate         ND         0.010         ND         0.010         ND         0.010         ND         0.050           Chrysene         ND         0.010         ND         0.010         ND         0.010         ND         0.050           Di-n-butyl phthalate         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Dibenzofuran         0.042         0.100         0.104         0.020         0.080         0.020         ND         0.500           Fluoranthene         ND         0.010         ND         0.010         ND         0.026         0.010         ND         0.500           Fluorene         0.043         0.100         ND         0.100         0.083         0.010         ND         0.500           N-Nitrosodiphenylamine         ND         0.100         ND         0.100         ND         0.010         ND         0.500           Naphthalene         1.210         0.100         0.041         0.100         0.472	Benzo(a)pyrene	ND	0.010	ND	0.010	NI	)					
bis(2-Ethylhexyl)phthalate         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Chrysene         ND         0.010         ND         0.010         ND         0.010         ND         0.050           Di-n-butyl phthalate         ND         0.010         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Dibenzofuran         0.042         0.100         0.104         0.020         0.080         0.020         ND         0.500           Fluoranthene         ND         0.010         ND         0.010         ND         0.026         0.010         ND         0.500           Fluorene         0.043         0.100         ND         0.100         0.083         0.010         ND         0.500           N-Nitrosodiphenylamine         ND         0.100         ND         0.100         ND         0.010         ND         0.500           Naphthalene         1.210         0.100         0.041         0.100         0.472         0.100         12.200         2.500           Nitrobenzene         ND         0.050         ND         0.050         ND         0.	bis(2-Chloroethoxy)methane	ND	0.010	ND	0.010	NI	)					
Chrysene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Di-n-butyl phthalate         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Dibenzofuran         0.042         0.100         0.104         0.020         0.080         0.020         ND         0.500           Fluoranthene         ND         0.010         ND         0.010         0.026         0.010         ND         0.500           Fluorene         0.043         0.100         ND         0.100         0.083         0.010         ND         0.500           N-Nitrosodiphenylamine         ND         0.100         ND         0.100         ND         0.010         ND         0.500           Naphthalene         1.210         0.100         0.041         0.100         0.472         0.100         12.200         2.500           Nitrobenzene         ND         0.050         ND         0.050         ND         0.050         ND         0.050	bis(2-Ethylhexyl)phthalate	ND	0.010	ND	0.010	NI	)	0.010				
Di-n-butyl phthalate         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Dibenzofuran         0.042         0.100         0.104         0.020         0.080         0.020         ND         0.500           Fluoranthene         ND         0.010         ND         0.010         0.026         0.010         ND         0.500           Fluorene         0.043         0.100         ND         0.100         0.083         0.010         ND         0.500           N-Nitrosodiphenylamine         ND         0.100         ND         0.100         ND         0.010         ND         0.050           Naphthalene         1.210         0.100         0.041         0.100         0.472         0.100         12.200         2.500           Nitrobenzene         ND         0.010         ND         0.050         ND         0.050         ND         0.050         ND         0.500	Chrysene	ND	0.010	ND	0.010	NI	)	0.010	ND			
Dibenzofuran         0.042         0.100         0.104         0.020         0.080         0.020         ND         0.500           Fluoranthene         ND         0.010         ND         0.010         0.026         0.010         ND         0.500           Fluorene         0.043         0.100         ND         0.100         0.083         0.010         ND         0.500           N-Nitrosodiphenylamine         ND         0.100         ND         0.100         ND         0.010         ND         0.050           Naphthalene         1.210         0.100         0.041         0.100         0.472         0.100         12.200         2.500           Nitrobenzene         ND         0.050         ND         0.050         ND         0.050         ND         0.050           Pentachlorophenol         ND         0.050         ND         0.050         ND         0.050         ND         0.050	Di-n-butyl phthalate	ND	0.010	ND	0.010	NI	)	0.010		0.500		
Fluoranthene         ND         0.010         ND         0.010         0.026         0.010         ND         0.500           Fluorene         0.043         0.100         ND         0.100         0.083         0.010         ND         0.500           N-Nitrosodiphenylamine         ND         0.100         ND         0.100         ND         0.010         ND         0.010         ND         0.500           Naphthalene         1.210         0.100         0.041         0.100         0.472         0.100         12.200         2.500           Nitrobenzene         ND         0.010         ND         0.010         ND         0.010         ND         0.050         ND         0.050         ND         0.050         ND         2.500	Dibenzofuran	0.042	0.100	0.104	0.020	0.0	30	0.020	ND			
Fluorene         0.043         0.100         ND         0.100         0.083         0.010         ND         0.500           N-Nitrosodiphenylamine         ND         0.100         ND         0.100         ND         0.010         ND         0.500           Naphthalene         1.210         0.100         0.041         0.100         0.472         0.100         12.200         2.500           Nitrobenzene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Pentachlorophenol         ND         0.050         ND         0.050         ND         0.050         ND         0.250	Fluoranthene	ND	0.010	ND	0.010	0.0	26	0.010				
N-Nitrosodiphenylamine         ND         0.100         ND         0.100         ND         0.010         ND         0.500           Naphthalene         1.210         0.100         0.041         0.100         0.472         0.100         12.200         2.500           Nitrobenzene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Pentachlorophenol         ND         0.050         ND         0.050         ND         0.050         ND         0.250	Fluorene	0.043	0.100	ND	0.100	0.0	33	0.010	ND			
Naphthalene         1.210         0.100         0.041         0.100         0.472         0.100         12.200         2.500           Nitrobenzene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Pentachlorophenol         ND         0.050         ND         0.050         ND         0.050         ND         2.500	N-Nitrosodiphenylamine	ND	0.100	ND	0.100	N	)					
Nitrobenzene         ND         0.010         ND         0.010         ND         0.010         ND         0.500           Pentachlorophenol         ND         0.050         ND         0.050         ND         0.050         ND         2.500	Naphthalene	1.210	0.100	0.041	0.100	0.4	72					
Pentachlorophenol ND 0.050 ND 0.050 ND 0.050 ND 2.500	Nitrobenzene	ND	0.010	ND		NE	)					
	Pentachlorophenol	ND										
Phenanthrene 0.019 0.100 0.019 0.100 0.097 0.050 ND 0.500	Phenanthrene	0.019	0.100									
Phenol ND 0.010 ND 0.010 ND 0.010 29.700 10.000	Phenol	ND										
Pyrene ND 0.010 ND 0.010 0.015 0.010 ND 0.500	Pyrene	ND										

<sup>(</sup>a) Samples collected on May 13 and 14, 1997.

<sup>(</sup>b) Conc. = reported concentration; LOQ = limit of quantiation; ND = non detect

TABLE 5-7
Gound Water Analytical Results - Monitor Wells
Phase 2-A Investigation
Houston Wood Preserving Works
Houston, Texas

Sample Location	:	N	1W18	
Transmissive Zone	7	С	-TZ	
Analytical Result	: Cond	LOQ	Conc	LOQ
	(mg/L	_)	(m	g/L)
Total Disolved Solids	1480	10	1050	5
Volatile Compound				
1,2-Dichloroethane	ND	50	ND	0.005
Benzene	0.700	50	ND	0.005
Chlorobenzene	ND	50	ND	0.005
Ethylbenzene	0.919	50	0.028	0.005
Methylene chloride	ND	50	ND	0.005
Toluene	0.805	50	0.012	0.005
Xylenes (total)	0.218	50	0.067	0.005
Semivolatile Compound				
1,2-Diphenylhydrazine	ND	0.200	ND	0.010
2,4-Dimethylphenol	9.210	2.000	ND	0.010
2,4-Dinitrotoluene	ND	0.200	ND	0.010
2,6-Dinitrotoluene	ND	0.200	ND	0.010
2-Chloronaphthalene	ND	0.200	ND	0.010
2-Methylnaphthalene	0.617	0.200	0.125	0.100
4,6-Dinitro-o-cresol	ND	1.000	ND	0.050
4-Nitrophenol	ND	1.000	ND	0.050
Acenaphthene	0.350	0.200	0.054	0.100
Acenaphthylene	ND	0.200	ND	0.010
Anthracene	ND	0.200	ND	0.010
Benzo(a)anthracene	ND	0.200	ND	0.010
Benzo(a)pyrene	ND	0.200	ND	0.010
bis(2-Chloroethoxy)methane	ND	0.200	ND	0.010
bis(2-Ethylhexyl)phthalate	ND	0.200	ND	0.010
Chrysene	ND	0.200	ND	0.010
Di-n-butyl phthalate	ND	0.200	ND	0.010
Dibenzofuran	ND	0.200	0.049	0.020
Fluoranthene	ND	0.200	ND	0.010
Fluorene	ND	0.200	0.032	0.010
N-Nitrosodiphenylamine	ND	0.200	ND	0.010
Naphthalene	7.870	2.000	0.905	0.010
Nitrobenzene	ND	0.200	ND	0.200
Pentachlorophenol	ND	1.000	ND	0.050
Phenanthrene	ND	0.200	0.053	0.010
Phenol	1.410	1.000	ND	0.010
Pyrene	ND	0.200	ND	0.010

<sup>(</sup>a) Samples collected on May 13 and 14, 1997.

<sup>(</sup>b) Conc. = reported concentration; LOQ = limit of quantitation; ND = non detect

TABLE 5-8

# Ground Water Analytical Results - Hydropunch Phase 2-A Investigation

# Houston Wood Preserving Works Houston, Texas

Sample Location:		HP17				ŀ	HP18	11	HP19					
Transmissive Zone:	A	\-TZ	В	-TZ	/	A-TZ	В	-TZ	. A	\-TZ	В	-TZ		
Analytical Result:			Conc.	LOQ	Conc	. LOQ	Conc.	LOQ	Conc.	LOQ	Conc	LOQ		
		ng/L)	(m	ng/L)	(r	ng/L)	(m	ng/L)	(m	ng/L)	(m	ng/L)		
Total Disolved Solids	NA	NA	NA	NA	914	5	881	5	748	5	NA	NA		
Volatile Compound														
1,2-Dichloroethane	ND	0.005	ND	0.005										
Benzene	ND	0.005	ND	0.005										
Chlorobenzene	ND	0.005	ND	0.005										
Ethylbenzene	ND	0.005	ND	0.005										
Methylene chloride	ND	0.005	ND	0.005										
Toluene	ND	0.005	ND	0.005										
Xylenes (total)	ND	0.005	ND	0.005										
Semivolatile Compound														
1,2-Diphenylhydrazine	ND	0.010	NA	NA										
2,4-Dimethylphenol	ND	0.010	NA	NA										
2,4-Dinitrotoluene	ND	0.010	NA	NA										
2,6-Dinitrotoluene	ND	0.010	NA	NA										
2-Chloronaphthalene	ND	0.010	NA	NA										
2-Methylnaphthalene	ND	0.010	ND	0.010	ND	0.010	0.064	0.010	ND	0.010	NA	NA		
4,6-Dinitro-o-cresol	ND	0.050	NA	NA										
4-Nitrophenol	ND	0.050	NA	NA										
Acenaphthene	0.033	0.010	ND	0.010	0.218	0.050	0.185	0.050	ND	0.010	NA	NA		
Acenaphthylene	ND	0.010	NA	NA										
Anthracene	ND	0.010	NA	NA										
Benzo(a)anthracene	ND	0.010	NA	NA										
Benzo(a)pyrene	ND	0.010	NA	NA										
bis(2-Chloroethoxy)methane	ND	0.010	NA	NA										
bis(2-Ethylhexyl)phthalate	ND	0.010	ND	0.010	ND	0.010	ND	0.010	0.032	0.010	NA	NA		
Chrysene	ND	0.010	NA	NA										
Di-n-butyl phthalate	ND	0.010	0.014	0.010	ND	0.010	ND	0.010	ND	0.010	NA	NA		
Dibenzofuran	ND	0.010	ND	0.010	0.110	0.050	0.145	0.050	ND	0.010	NA	NA		
Fluoranthene	ND	0.010	NA	NA										
Fluorene	0.016	0.010	ND	0.010	0.116	0.050	0.126	0.050	ND	0.010	NA	NA		
N-Nitrosodiphenylamine	ND	0.010	NA	NA										
Naphthalene	ND	0.010	ND	0.010	0.391	0.050	0.476	1.000	ND	0.010	NA	NA		
Nitrobenzene	ND	0.010	NA	NA										
Pentachlorophenol	ND	0.050	NA	NA										
Phenanthrene	ND	0.010	ND	0.010	0.013	0.010	0.078	0.010	ND	0.010	NA	NA		
	0.018	0.010	0.021	0.010	ND	0.010	0.013	0.010	ND	0.010	NA	NA		
Pyrene	ND	0.010	NA	NA										

<sup>(</sup>a) NA = Not Applicable

<sup>(</sup>b) Conc. = reported concentration; LOQ = limit of quanitation; ND = non detect

TABLE 5-8

Ground Water Analytical Results - Hydropunch
Phase 2-A Investigation

Sample Location:		HP	20		HP21						
Transmissive Zone:	Α	-TZ	1	B-TZ		A-TZ	B-	TZ			
Analytical Result:		LOQ	Conc	. LOQ	Cond	. LOQ	Conc.	LOQ			
	(m	g/L)	1)	ng/L)	(1	mg/L)	(mg	g/L)			
Total Disolved Solids	912	5	1310	10	1119	5	1054	5			
Volatile Compound											
1,2-Dichloroethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005			
Benzene	ND	0.005	ND	0.005	ND	0.005	0.0067	0.005			
Chlorobenzene	ND	0.005	ND	0.005	ND	0.005	ND	0.005			
Ethylbenzene	ND	0.005	ND	0.005	ND	0.005	0.0643	0.005			
Methylene chloride	ND	0.005	ND	0.005	ND	0.005	ND	0.005			
Toluene	ND	0.005	ND	0.005	ND	0.005	ND	0.005			
Xylenes (total)	ND	0.005	ND	0.005	ND	0.005	0.0158	0.005			
Semivolatile Compound											
1,2-Diphenylhydrazine	ND	0.010	ND	0.010	ND	0.010	1.054	0.010			
2,4-Dimethylphenol	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
2,4-Dinitrotoluene	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
2,6-Dinitrotoluene	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
2-Chloronaphthalene	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
2-Methylnaphthalene	ND	0.010	ND	0.010	ND	0.010	0.118	0.050			
4,6-Dinitro-o-cresol	ND	0.050	ND	0.050	ND	0.050	ND	0.050			
4-Nitrophenol	ND	0.050	ND	0.050	ND	0.050	ND	0.050			
Acenaphthene	ND	0.010	ND	0.010	ND	0.010	0.212	0.050			
Acenaphthylene	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Anthracene	ND	0.010	ND	0.010	ND	0.010	0.010	0.010			
Benzo(a)anthracene	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Benzo(a)pyrene	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
bis(2-Chloroethoxy)methane	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
bis(2-Ethylhexyl)phthalate	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Chrysene	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Di-n-butyl phthalate	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Dibenzofuran	ND	0.010	ND	0.010	ND	0.010	0.026	0.010			
Fluoranthene	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Fluorene	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
N-Nitrosodiphenylamine	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Naphthalene	ND	0.010	ND	0.010	ND	0.010	0.176	0.050			
Nitrobenzene	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Pentachlorophenol	ND	0.050	ND	0.050	ND	0.050	ND	0.050			
Phenanthrene	ND	0.010	ND	0.010	ND	0.010	0.045	0.010			
Phenol	ND	0.010	ND	0.010	ND	0.010	ND	0.010			
Pyrene	ND	0.010	ND	0.010	ND	0.010	ND	0.010			

<sup>(</sup>a) NA = Not Applicable

TABLE 6-1
ROST/TPH Correlation Data
Phase 2-A Investigation
Houston Wood Preserving Works
Houston, Texas

1/(Y)	0 32760	0.23733	0.10593		0.42194	0.02328	0.03219	0.02660	0.02814	0.01531	1 40845	0.37175	0.181.0	0.101.43	1.61290	2.43302	0.09775	0.29940	0.0000	0.044440	0.01537	0.38168	0.09217	0.04435	0 95238	0 92593	0.32333	0.44444	0.04316	0.05288	1.13636	2.63158	0.87719	0.02533	0.01806
1/(X)	0.00148	0.00143	0.00005		0.10000	0.00053	0.00083	0.00011	0.00022	0.00008	0.10000	0.01429	0.02500	0.0000	0.10000	0.000	0.00038	0.00769	0.00140	0.000	0.00014	0.10000	0.00270	0.00118	0.01429	0.1000	0.1000	0.1000	0.00769	0.01429	0.10000	0.10000	0.10000	0.00091	0.00011
Ln (Y)	1.43746	2.21812	2.24496		0.86289	3.76004	3.43624	3.62700	3.57066	4.17945	-0.34249	0.98954	1.70656	000770	-0.47.004		2.32532	1.20597	3 11307	4 17531	1.1.00	0.96317	2.3841/	5.115/4	0.04879	0.07696	0.81093	3 14286	202060	2.33303	-0.12/83	-0.96758	0.13103	3.67579	4.01422
Ln (X)	6.53669	8.74830	9.85219	0000	2.30259	7.54961	7.09008	9.09381	8.41183	9.39266	2.30259	4.24850	3.68888	2 30250	2.30259		7.86327	4.86753	6.50728	8 90924	20002	2.30239	6 74524	t70t/0	4.24850	2.30259	230259	4 86753	7 24850	2000	2.30239	2.30259	2.30259	7.00307	9.12696
Flag <sup>(c)</sup>																									×										
TPH Result <sup>(b)</sup>	۵	O	Ω	2	2	ם מ	י כ	Ω	۵	۵	N	۵	۵	QN	QN	ı	Ω	۵	Δ	۵	S	<u></u>	۵ ۵	ì	Q	ND	ND	Q		S	2 2	2 2	<u>S</u> (	۵	۵
LIF Result <sup>(a)</sup>	۵	Ω	Q	QN	<u></u>	ם ב	ם מ	ם נ	ם ו	Ω !	Q	۵	۵	Q	ND	۵	2	۵	Ω	۵	ND	<u> </u>	۵ ۵		Q N	ND	ND	۵	۵	CN	S	2 2	<u> </u>	2	۵
LIF Response (Y)	4.21	9.19	9.44	2.37	42 95	31.07	0.10	37.60	50.05	65.33	0.71	2.69	5.51	0.62	0.41	10.22	10.23	3.34	22.49	90.29	2.62	10.85	22.55		1.05	1.08	2.25	23.17	18.91	0.88	0.38	114	1000	33.48	55.38
TPH Result (X)	069	6,300	19,000	QN	1,900	1.200	006 8	4 500	7,000	000,21	Q (	0/	40	Q	QN	2 600	1,000	130	0/9	7,400	QN	370	850	í	S :	Q.	Q	130	70	QN	QN	QN	1 100	000,	9,200
Soil Type	FIL	HE	SAND	Clayey SILT	Clayey SILT	Clayey SILT	Clavev SILT	Clavey SII T	Clayey SII T	SILT	CILT	SIL I	SILI	SILI	SILT	Silty CLAY	Cilty Cl AV	Silty CLAT	Silty CLAY	0.14.0	Silty SAND	Silty SAND	Silty SAND	Silty SAND	Silty SAND	Silty SAND	Silty SAND	Silty SAND	Silty SAND	Cilty CAND	JNIK SHIND				
Sample ID	SB06-S4	3507-52.5	SB04-52.5	SB02-37.5	SB07-S19	SB07-S21	SB08-S18	SB08-S21	SB08-S22	SB02-49	SB03-519	CBOA CE1	SEOF-331	3503-518.5	SB05-S34.5	SB08-S4	SB02-38 F	SB03-SE	00000	SB03-S34	SB03-S52	SB06-S19	SB08-S14	CB02.21	25025	3502-24 SB02-24	3803-524	SB04-S27	SB04-S29	SB05-S24	SB05-S39	SB06-S24	SB07-S22	SB07.534	140-1000

(a) Background response estimated at 2.65. Any result greater than background is a detect (D), less than background is a non-detect (ND).

<sup>(</sup>b) D - Detect, result greater than the laboratory detection limit of 10 mg/kg. ND - Non-detect, result below laboratory detection limit.(c) Flag denotes when a TPH result is in disagreement with an LIF result at the given background level.

# Field Procedures Report

Appendix A

February 13, 1998 W.O. #422-09

ERM-SOUTHWEST, INC. 16300 Katy Freeway, Suite 300 Houston, Texas 77094-1611 (281) 579-8999

#### PHASE 2 RFI/EOC FIELD PROCEDURES

Southern Pacific Transportation Company Houston Wood Preserving Works 4910 Liberty Road Houston, Texas

Terranext Project No. 17101961

Prepared For:

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December 8, 1997

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#### 1.0 INTRODUCTION

Pursuant to the Texas Natural Resource Conservation Commission (TNRCC) Corrective Action and Permits Section's approval of the Phase 2 scope of work as described in the Phase 1 RCRA Facility Investigation (RFI)/Extent of Contamination (EOC) Investigation Report (Terranext, May 23, 1996), Terranext performed field investigation activities on behalf of Southern Pacific Transportation Company (SPTCo) at the former Houston Wood Preserving Works (HWPW) site at 4910 Liberty Road; Houston, Texas.

Post-closure Care Permit Number HW-50343-000 (hereinafter, Permit) and Compliance Plan Number CP-50343 (hereinafter, Compliance Plan), issued by the TNRCC on June 20, 1994, required SPTCo to prepare two work plans to investigate the extent of affected soil and ground water at the HWPW site (Figure 1-1). Provision VIII of the Permit requires the completion of an RFI. The purpose of the RFI is to determine whether hazardous substances have been released into the environment from the industrial Solid Waste Management Units (SWMUs) and Areas of Concern (AOC) identified in the Permit. Pursuant to the Permit, an RFI Work Plan was prepared and submitted by SPTCo to the TNRCC on October 14, 1994. The RFI Work Plan was approved by TNRCC with modifications on October 16, 1995.

The EOC Work Plan was prepared by SPTCo to comply with the requirements of the Permit and to a greater extent, the Compliance Plan. The Compliance Plan requires assessment of the extent of contamination offsite in ground water attributable to past operation of the closed surface impoundment, TNRCC Permit Unit No. II.B.l, located in the southwest corner of the site and, based on the results of the investigation, an assessment of the necessity and feasibility of ground water remediation. The EOC Work Plan was submitted by SPTCo on May 19, 1995, and was approved by the TNRCC on September 29, 1995.

Phase 1 of the combined RFI/EOC Investigation was performed in November and December 1995, and the results are documented in the aforementioned Phase 1 RFI/EOC Report. The purpose of this report is to document the field procedures and activities conducted under the Phase 2 RFI/EOC investigation at the site in February through May 1997, in accordance with the approved RFI and EOC Work Plans and the Phase 2 scope of work.

# 1.1 Site Description

The site consists of a 33-acre tract of land that was formerly operated as SPTCo's Houston Wood Preserving Works, including the closed surface impoundment (TNRCC Permit Unit No. II.B.l) located in the southwest portion of the site. The facility is located at 4910 Liberty Road, Houston, Harris County, Texas, approximately 2 miles northeast of the intersection of Highway 59 and Interstate Highway 10. The property to the north and west is mixed residential and light industrial, with heavy industry further to the west. The adjacent property to the east and south is owned by SPTCo and is presently used for railroad and intermodal operations.

The closed surface impoundment is approximately 180 feet long and 106 feet wide and is currently flat, grass-covered vacant property. The southern side of the impoundment is bordered by an earthen berm, approximately 2 feet high, 3 feet wide, and 100 feet long. A portion of the property boundary contains a chain-link security fence, located along the northern and western sides of the closed surface impoundment. The permitted unit is fully enclosed by fencing and required signs are posted. The original surface impoundment dimensions were approximately 106 by 180 feet at the surface, and extended to a depth of approximately 7 feet below ground surface, yielding a potential capacity of approximately 4,950 cubic yards. A clay liner was installed during the original impoundment construction; during closure, after contaminated materials were removed, the impoundment was filled and revegetated.

# 1.2 Phase 2 Investigation Overview

The scope of work for the Phase 2 RFI/EOC Investigation is described in detail in Section 5.0 of the Phase 1 RFI/EOC Investigation Report. As an amendment to the Phase 2 scope of work outlined in the Phase 1 report, three monitoring wells were installed in a third water bearing zone at approximately 70 feet below ground surface with the prior approval of the TNRCC.

The EOC investigation portion of Phase 2 involved the use of the Hydropunch™ method to collect ground water samples offsite to delineate the extent of impacted ground water attributable to the closed surface impoundment. The onsite/RFI portion of the Phase 2 investigation involved the installation of a total of eleven ground water monitoring wells, deep CPT soundings to define the lithology below 60 feet, and a subsurface and surface soil sampling and analyses program.

#### 1.3 Previous Site Studies

Two studies were performed prior to the Phase 1 RFI/EOC investigation conducted in November and December 1995, in the vicinity of the closed surface impoundment. The first investigation was performed in 1984 by Professional Service Industries, Inc. This investigation involved the installation of four monitoring wells, designated MW-1, MW-2, MW-3, and MW-4, and collection of ground water samples for chemical analysis.

In 1991, to establish a ground water monitoring network to meet the requirements for the RCRA Part B closure permit application, Geo Associates installed four ground water monitoring wells (designated MW-5, MW-7, MW-8, and MW-9), three piezometers (designated P-10, P-11, and P-12), and drilled seven exploratory borings. Geo Associates also performed three slug tests and collected ground water and soil samples for chemical analysis.

In September 1994, pursuant to Paragraph XI the Compliance Plan, SPTCo installed two nested point of compliance (POC) wells (MW-10A, MW-10B, MW-11A, MW-11B) within the two water bearing zones, the upper transmissive zone (UTZ) and second transmissive zone (STZ), at the downgradient boundary of the surface impoundment. These wells were monitored quarterly for a one-year period, and have been integrated into the current semi-annual ground water monitoring program. Boring logs and well construction details were provided to the TNRCC in October 1994.

Pursuant to TNRCC approval of the RFI and EOC Work Plan, SPTCo contracted Terranext to perform the combined Phase 1 RFI/EOC Investigation beginning in November 1995.

#### 1.4 Ground Water Monitoring

In accordance with the provisions of Paragraph VI of the Compliance Plan, SPTCo has conducted periodic ground water monitoring for potential contaminants of concern listed in Table I of the Compliance Plan for all existing on-site wells. Having previously completed quarterly ground water monitoring for all on-site wells for approximately two years, SPTCo conducted the first semi-annual period of 1996 ground water sampling related to the closed surface impoundment area on January 23 and 24, 1996. The ground water monitoring network includes ten ground water monitor wells: MW-1a, MW-2, MW-3, MW-4, MW-5, MW-7, MW-8, MW-9, MW-10A, and MW-11A completed in the UTZ, and two monitor wells (MW-10B and MW-11B) and three piezometers (P-10, P-11, and P-12) completed in the STZ.

The results of the semi-annual ground water monitoring events are documented in Compliance Plan Semi-annual Reports due January 21, and July 21, each year. Annual Reports due each year by January 25, include a summary of ground water compliance monitoring.

#### 1.5 Offsite Access

Written authorization to access offsite areas was required prior to conducting activities under the EOC Investigation. Private property owners and the City of Houston were contacted to obtain access to areas to perform the required investigation. Access was granted to some parcels adjacent to the closed impoundment by some of the private property owners.

#### 1.5.1 Private Properties

Permission to access private properties adjacent to the HWPW site was solicited by SPTCo from approximately 48 individual property owners. SPTCo hired a Houston, Texas consulting firm (Allen, Williford, and Seale) to assist SPTCo in the identification of owners of adjacent properties along the western portion of the site near the closed surface impoundment. Since June 1995, Terranext has conducted three complete mailings on behalf of SPTCo to all non-responsive property owners. Through December 1995, a total of only 15 private property owners had granted permission for SPTCo to access their property for the environmental investigation.

#### 1.5.2 City of Houston Property

The City of Houston possesses several rights-of-way (ROW) in the EOC investigation area which currently exist as platted but unpaved streets. The pertinent ROWs consist of Ranch Street, First Street, and Second Street shown on Figure 1-2 (page 5). Permit applications to access city ROWs for environmental test borings or permanent installations (e.g., monitoring wells) were completed and submitted to the City of Houston Department of Public Works and Engineering.

The City of Houston access permits were issued on January 1997 for the work to be performed on in the offsite area west of the closed surface impoundment. These permits are

valid for one calendar year from the date of issue. Any additional work in the ROWs will require additional permits.

Prior to performing the CPT/Hydropunch™ work for the EOC Investigation, the ROWs were located by a licensed surveyor. Survcon, Inc. (Survcon) of Houston, Texas was contracted to locate and stake the ROW boundaries for Ranch Street, First Street, and Second Street. After locating the ROWs, clearing of overgrown vegetation was subcontracted and completed to allow access by the CPT vehicle. Ranch Street and First Street were accessed directly from Amboy Street. Second Street was accessed from SPTCo property.

#### 1.6 Wetlands Permit

The 0.28-acre area offsite along the southwest corner of the HWPW site, referred to as Inactive Wastewater Lagoon (AOC 6), is frequently saturated with ponding storm water. A wetlands delineation was conducted by Terranext on behalf of SPTCo in September 1994, to characterize the nature and extent of the wetlands. On May 22, 1995, SPTCo filed a permit application with the U.S. Army Corps of Engineers, Galveston District, for Nationwide Permits No. 5, 6, and 26. On June 13, 1995, the Corps of Engineers provided authorization to conduct investigation activities in this area.

The wetland area is comprised of the City of Houston ROWs (for 2nd Street and Amboy Street) and five to six privately-owned parcels of land, from which only two access agreements have been executed (as of March 1996). This area is a natural topographic depression within the local drainage basin, and was not constructed as a containment pond, wastewater lagoon or any other designed structure. In November 1995, at the start of the EOC Investigation, the lagoon area was completely dry and covered with grassy vegetation.

#### 2.0 PHASE 2 INVESTIGATION ACTIVITIES

The scope of work and technical approach to the Phase 2 RFI/EOC Investigation was developed based on the findings of Phase 1. Under Phase 2, quantitative soil, ground water and hydrogeologic data were obtained. The objectives, rationale, scope, and procedures conducted under the Phase 2 investigation are described in the following sections.

# 2.1 Objectives

The objectives of the Phase 2 Investigation as described in Section 5 of the Phase I Report (Terranext, 1996) were to:

- determine the vertical extent of BTEX, PAH, and creosote migration in soil within areas shown to be most significantly impacted from past releases;
- confirm, compare and, if possible, correlate soil borings and soil sampling data with existing CPT and ROST™ data;
- determine lateral extent of offsite impact attributable to the Inactive Wastewater Lagoon (AOC 6);
- determine if AOC's 3, 4, 5, 6 and 7 are sources of onsite contamination;
- collect representative ground water samples and obtain hydrogeologic data across the entire site;
- develop and apply fate and transport analyses to predict possible contaminant levels offsite and support natural attenuation of contaminants in the subsurface;
- collect data to assess natural attenuation processes in soil and ground water;
- obtain an understanding of the relationship between concentrations of contaminants in soil, and how these concentrations have or may affect ground water quality;
- derive risk-based concentrations through risk assessment using available site data;
   and,

• subsequently modify the Compliance Plan and the Permit as necessary to assure that site-specific elements form the basis for any further investigation, corrective measures, and post-closure activities required under the Permit.

## 2.2 Investigation Procedures

The Phase 2 investigation consisted of the following: 1) eight deep CPT soundings onsite and offsite to attempt to identify the lithology to approximately 100 feet; 2) an onsite soil boring and sampling program to provide quantitative soil data for AOCs and investigation units, and comparison to Phase 1 CPT and ROST<sup>TM</sup> data; 3) installation of eleven ground water monitoring wells (six UTZ wells, two STZ wells and three wells in the Lower Sand Unit-LSU) and collection of ground water samples from these wells to provide quantitative chemical data for onsite ground water; 4) an offsite Hydropunch ground water sampling program; 5) an aquifer slug testing program; and 6) a surface soil sampling program to collect data needed for risk analysis.

# 2.3 Cone Penetrometer Testing Program

Prior to drilling the soil borings, a total of eight CPT soundings was performed to depths below the extent of creosote contamination as indicated by existing ROST™ fluorescence data, or to a maximum depth of approximately 100 feet. The purpose of the CPT soundings was to: 1) confirm the previous site lithology based upon CPT soundings, and 2) define the site lithology at depths below the previous CPT soundings.

Four CPT soundings were proposed to be advanced to a maximum depth of 100 feet under the Phase 2 scope of work at locations CPT35, CPT36, CPT37, and CPT38. The four proposed CPT soundings were located to further investigate the following areas:

- CPT35 Inactive Wastewater Lagoon (AOC 6)
- CPT36 Tie Storage Area (SWMU 12)

- CPT37 Original Process Area (SWMU 5)
- CPT38 Recent Process Area (SWMU 4)

During the execution of the Phase 2 CPT sounding program, a dense sand layer was encountered at a depth of approximately 65 feet below ground surface in all four CPT locations. This sand was not anticipated; therefore, additional CPTs (CPT39, 40, 41, and 42) were completed to determine if this 65-foot sand layer was laterally continuous across the site and impoundment areas.

As shown in Figure 3-1, eight CPT sounding locations were completed, both onsite and offsite. Due to inclement weather and wet soil conditions, the CPTs were performed in two separate mobilizations. Soundings CPT36 through CPT41, associated with the onsite RFI investigation activities, were completed between February 25 and 26, 1997. Upon the improvement of previously very wet soil and access conditions in the area adjacent (offsite) to the closed surface impoundment, the two offsite CPTs soundings (CPT35 and CPT42) were completed between May 8 and 9, 1997.

#### 2.3.1 CPT Sounding Procedure

The CPT soundings were performed in accordance with the procedures used in the previous Phase 1 investigation as outlined in the approved EOC and RFI Work Plans. Six of the eight CPTs encountered refusal between 64.5 and 70.5 feet, corresponding to the dense sand encountered at that depth interval. Consequently, total depths of the CPT soundings ranged from 64.5 to 100 feet.

Since shallow subsurface obstructions were encountered during the previous Phase 1 CPT sounding program, a 4-inch diameter hole was pre-drilled to approximately 3 feet below surface to allow to the CPT to be advanced without damaging the equipment.

The CPT system was housed in the cabin of a 20-ton truck. The penetrometer cone was pushed into the subsurface at a constant, controlled rate of 2 centimeters per second (cm/sec) while the data acquisition system recorded and plotted the data from the instrument. The data acquisition system had a total of four recording channels to record the cone tip resistance, sleeve friction resistance, depth, and pore pressure. The electrical signals were plotted in milli-volts (mv) during the sounding and recorded to the hard drive of a lap top portable computer.

The CPT cones were laboratory-calibrated before the field activities and field-checked before each sounding. The laboratory calibration procedure consisted of applying a series of known loads and hydraulic pressures to the probe and recording the transducer outputs. The field check consisted of a zero load check and a vacuum check on the piezometer during the deairing procedure. After each sounding, the cone was decontaminated and the tip disassembled for cleaning and de-airing.

Preliminary decontamination of the CPT equipment was performed as the rods were extracted from the ground. After removal, the rods were steam-cleaned with a high-pressure washer. Wash water was stored in the temporary decontamination pad during the day and stored in 55-gallon drums at the end of each day. All open CPT holes were tremie-grouted with a bentonite cement grout from total depth to surface.

# 2.3.2 CPT Data Analysis

Field plots of the cone tip resistance, sleeve friction resistance, friction ratio, and pore pressure versus depth were made in the field and immediately interpreted so that adjustments could be made in the field, if necessary. The CPT logs produced by Fugro Geosciences, Inc. are provided in Attachment I.

Lithologic interpretations of the CPT data were performed in the field using a computer program that incorporates the Campanella and Robertson Classification method. To verify that the lithologic interpretations prepared by the computer program were consistent with site conditions, soil borings were advanced adjacent to the previous CPT soundings. A comparison of the computer's lithologic interpretation of the CPTs with the soil boring logs, indicated that the CPT sounding program correctly identified the cohesive soils (clays and silts) and granular soils (sand and silty sand) that underlie the site.

# 2.4 Soil Boring and Sampling Program

The following sections describe the soil boring program. Soil boring logs are provided in Attachment II.

# 2.4.1 Scope and Objectives

Seven exploratory soil borings, exclusive of the eleven borings related to well installation, were drilled to delineate the vertical extent of creosote impact in soils. These seven borings (SB02 through SB-08), plus one STZ monitoring well boring (well MW-12B, near CPT25R), were drilled to accomplish the following objectives:

- define the vertical extent of soil contamination;
- determine the lithology below a depth of 60 feet;
- determine the distribution of creosote with depth and within the five hydrologic units;
- confirm, compare, and possibly correlate the CPT and ROST™ fluorescence data collected during the Phase 1 investigation with data collected from the soil borings;
- determine the potential for natural attenuation; and,
- define the hydrogeologic characterization of the site.

Prior to drilling the soil borings, the CPT sounding program revealed a sand layer encountered at approximately 65 feet below grade. To minimize the potential for cross-contamination of this sand unit, the exploratory borings were terminated at depths less than 60 feet. The four soil borings (SB05, SB06, SB07, and SB08) in addition to the borings in the proposed Phase 2 scope of work were advanced to correlate the soil lithology with the additional CPT soundings added to the Phase 2 program (CPT39, CPT40, and CPT41).

#### 2.4.2 Soil Boring Locations

A total of seven soil borings, including the boring for monitoring well MW-12B, was completed from March 3 to March 6, 1997 as shown on Figure 3-1. The borings were continuously sampled and lithologic descriptions recorded. To determine the vertical extent of creosote-impacted soil, soil samples were collected from select intervals throughout each boring, depending on the objective for specific areas of investigation.

The rationale for each soil boring location is described below.

#### Boring SB01

Soil boring SB01 and CPT35 were proposed to be located in the offsite drainage area [Inactive Wastewater Lagoon (AOC 6)]. However, due to the wet soil conditions in this area, soil boring SB-01 was not completed.

#### Boring SB02

Boring SB02 and CPT36 were completed in the Tie Storage Area (SWMU 12) adjacent to CPT20R. A total of six soil samples was collected from boring SB02 for chemical analysis.

### Boring SB03

Boring SB03 and CPT37 were completed in the Original Process Area (SWMU 5) adjacent to CPT08R. A total of six soil samples was collected from boring SB03 for chemical analysis.

# Boring SB04

Boring SB04 and CPT38 were completed in the Recent Process Area (SWMU 4) adjacent to Phase 1 CPT/ROST<sup>TM</sup> CPT13R. A total of seven soil samples was collected from boring SB04 for chemical analysis.

#### Boring MW-12B

Soil boring MW-12B was installed in the Tie Storage Area adjacent to CPT25R near the North Drainage Ditch (SWMU 2), and to further characterize the hydrogeology and extent of contamination in this area of the site. Two soil samples were collected from boring MW-12B for chemical analysis.

### **Boring SB05**

Soil boring SB05 and CPT40 were advanced in close proximity to the MW-12 well nest. This boring and CPT were added to the boring program following the discovery of the third sand unit. The purpose of these investigations was to assess if the sand unit was laterally continuous across the site, determine the depth of the sand unit, if present, and establish the soil lithology below 60 feet. A total of five soil samples was collected from boring SB05 for chemical analysis.

#### Boring SB06

SB06 was completed in the southeast portion of the Tie Storage Area, adjacent to CPT30. A total of three soil samples was collected from boring SB06 for chemical analysis.

#### Boring SB07 and SB08

Borings SB07 and SB08 were completed in the Original Process Area to provide soil analytical data for comparison with high ROST™ responses detected in Phase 1 CPT/ROST™ locations CPT32R and CPT34R. Both borings were drilled to a depth of 25 feet. A total of five soil samples was collected for chemical analysis from each boring (ten total samples).

#### 2.4.3 Soil Borings in AOCs

In January 1997, the TNRCC requested that SPTCo address investigation activities for Areas of Concern: AOC3 - Contaminated Portion of the City Water Line; AOC5 - City Storm Sewer; AOC4 - Location of Former Incinerator; and AOC7 - Location of Former UST No. 44-023-21. During the onsite Phase 2 investigation in March 1997, the following scope of work was conducted specific to the AOCs.

#### AOC3 - Contaminated Portion of City Water Line

SPTCo located the area of the water line leak, and drilled two soil borings to a depth 1 foot below the bottom of the water line. From these borings, two composite soil samples (AOC3W-S00 and AOC3E-S00) were collected from 0 to 5 feet below ground surface for PAH by EPA Method 8270 and select volatile organic compounds (VOC) analyses by EPA Method 8270 at the offsite laboratory.

#### AOC4 - Location of Former Incinerator

The area occupied by the former incinerator within Unit/Tie Storage Area was delineated into four quadrants. From these quadrants, a total of four composite soil samples (AOC4-SE, SW, NE, and NW - S00) was collected from the depth interval of 0 to 5 feet below ground surface. The four soil samples were analyzed for PAH and VOC at the offsite laboratory.

#### AOC5 - City Storm Sewer

SPTCo located the subject storm sewer, and one sample of sediment (AOC5E-S00) from the bottom of a storm sewer drainage basin was collected for PAH analysis at the offsite laboratory. In addition, one soil boring was drilled to a total depth of 7 feet approximately 100 feet southwest of the storm drain inlet. One soil sample (AOC5W-S00) was composited from the depth interval of 0 to 7 feet below ground surface for PAH and VOC analyses at the offsite laboratory.

# AOC 7 Location of Former UST No. 44-023-21

One soil boring was drilled to a depth of 10 feet below ground surface in the area where the former 200-gallon capacity UST was removed. One soil sample was collected and composited from the depth interval of 0 to 5 feet for PAH and VOC analyses at the offsite laboratory.

# 2.4.4 Monitoring Well Borings

The ground water monitoring well installation program included the installation of six 2-inch PVC monitoring wells in the UTZ (MW-12A, MW-13, MW-15, MW-16, MW-17, and MW-18) and two 2-inch monitoring wells in the STZ (MW-12B and MW-14). The discovery of the lower sand unit following the completion of the CPT sounding and soil boring programs prompted a follow-up boring and well installation program for three additional wells, designated MW-12C, MW-15C, and MW-18C. These three wells were installed to characterize the lithology, contaminant concentrations, and ground water flow direction in the lower sand unit. All monitoring well locations and elevations were surveyed by a licensed professional land surveyor (Survcon, Inc.) as shown on Figure 3-2.

### 2.4.5 Soil Analytical Program

Select soil samples were collected from each soil boring for VOC analysis by EPA Method 8260 and PAH analyses by EPA Method 8270. Five soil samples were collected for the SPLP Leaching procedure to determine the potential for creosote constituents in soil to leach to ground water.

For ROST™ correlation and assessment of potential spatial variations in the creosote chemistry, the soil sample collection depths were targeted to intervals of low fluorescence (0 to 30%), medium fluorescence (30% to 70%), and high fluorescence (>70%) as determined from the Phase 1 investigation within all five lithologic units. Each soil sample collected for ROST™ correlation was homogenized and split for concurrent testing by bench scale ROST™ and modified EPA Method 418.1 for total recoverable petroleum hydrocarbons (TRPH).

#### PAH and VOC Analyses

The following soil samples were collected from the designated borings for PAH and VOC analyses. The soil boring number (e.g., MW-13) precedes the depth intervals from which soil samples were collected for analyses. The soil samples were identified by the soil boring number, followed by "S" for soil, and the depth interval from which the soil sample was collected, for example: SB03-S52 or MW-13-S021.

Soil Borings:

SB02-S07/21/24/37.5/38.5/49 (sample depths; "00" - composite 0-5 ft.)

SB03-S05/19/24/34/52/54 SB04-S2.5/29/27/31/39/51/59 SB05-S19.5/24/34.5/39/54

SB06-S04/19/24/49 SB07-S2.5/19/21/22/24 SB08-S04/14/18/21/22

# Monitoring well

Borings: MW-12A-S00/20/25

MW-12B-S30/40/ MW-13-S00/15/21 MW-14-S17/35/40 MW-15-S00/20/25 MW-16-S00/20/25 MW-17-S25/30 MW-18-S00/25/30

**AOC Borings:** 

AOC-3W/00 (composite soil sample 0-5 ft.)

AOC-3E/00 AOC4-SE/00 AOC4-SW/00 AOC4-NE/00 AOC4-NW/00

AOC-5W/00 (composite soil sample 0-7 ft.) AOC7/00 (composite soil sample 0-10 ft.)

A0C5E (grab sediment sample from storm water inlet - analyzed for

PAH only)

# TRPH and ROST™ Bench-scale Analyses

The following soil samples were analyzed for TRPH and ROST™ bench-scale analyses in an attempt to provide correlation of ROST™ to quantitative data.

Soil boring SB02:

SB02-S21 (sample collected at depth of 21 ft. below ground surface)

SB02-S24 SB02-S37.5 SB02-S38.5 SB02-S49

Soil boring SB03

SB03-S19

SB03-S24 SB03-S34 SB03-S39 SB03-S52 Soil boring SB04: SB04-S2.5

SB04-S27 SB04-S29 SB04-S51

Soil boring SB05: SB05-S19.5

SB05-S24 SB05-S34.5 SB05-S39

Soil boring SB06: SB06-S4

SB06-S19 SB06-S24

Soil boring SB07: SB07-S2.5

SB07-S19 SB07-S21 SB07-S22 SB07-S24

Soil boring SB08: SB08-S4

SB08-S14 SB08-S18 SB08-21 SB08-22

#### SPLP Leaching Procedure

The following soil samples were collected for the SPLP Leaching Procedure. The leachate from each laboratory test was analyzed for PAHs by EPA Method 8270.

- SB03-S5 (Soil boring SB03 at depth of 5 feet below ground surface)
- SB06-S19
- SB04-S51
- SB03-S19
- SB03-S24

# PAH Analysis - Surface Soil Samples

The following surface soil samples were collected and analyzed offsite for PAH constituents of concern.

Surface soil samples				
Tie Storage Area:	A1-SS0	B1-SS0	C1-SS0	D1-SS0
_	A2-SS0	B2-SS0	C2-SS0	D2-SS0
	A3-SS0	<b>B3-SS0</b>	C3-SS0	
	A4-SS0	B4-SS0	C4-SS0	
	A5-SS0	B5-SS0	C5-SS0	
	A6-SS0	B6-SS0	C6-SS0	
Surface soil samples				
Former Process Areas:	7F-SS0	7G-SS0	11 <b>-</b> SS0	
	8F-SS0	8G-SS0		
	9F-SS0	9G-SS0		
	10F-SS0	10G-SS0		
		11G-SS0		

### Geotechnical Analyses

Select soil samples were collected for geotechnical analyses which included dry density, pH, and total organic carbon (TOC) for the purpose of soil characterization and preliminary assessment of natural attenuation potential in soils.

MW12B-S030 MW12B-S043 MW14-S05 MW14-S015 MW14-S028 MW14-S043.5 SBO2-S021

SB02-S038 SB06-S055

### 2.5 Monitoring Well Program

The monitoring well installation program was performed as described in Section 5.4 of the Phase 1 Investigation Report. Best Drilling Services, Inc. (Best) of Friendswood, Texas under subcontract to Terranext, provided drilling services for all of monitoring well installation activities conduct during the Phase 2 investigation. Based on the findings of the Phase 2 investigations, Terranext designated the lower sand unit present at 65-70 feet below grade as the LSU. For ease of discussion and mutual understanding, this designation is used throughout this Terranext report. The UTZ and STZ wells were installed between February 25, and March 3, 1997. The three LSU wells, installed during the follow-up drilling program, were completed between April 21 and 24, 1997. Monitoring well completion diagrams are provided in Attachment III.

#### 2.5.1 Objectives

The objectives of the monitoring well installation program were to:

- characterize the soil lithology by collecting soil samples from monitor well borings;
- determine the ground water flow direction and hydraulic gradient of each waterbearing zone;
- collect representative ground water samples;
- provide an understanding of the relationship between contaminant concentrations in soil and partitioning of compounds in ground water;
- estimate the hydraulic conductivity of the UTZ, STZ, and LSU through slug testing;
- provide reproducible data over a period of time to allow for statistical evaluation of data, if warranted;
- provide ground water chemistry data near the property boundaries on the east, west, and northern portions of the site for indications of possible impact to ground water offsite; and,

• gather data for possible use in fate and transport analyses to help identify the potential degree and extent of possible offsite impact.

# 2.5.2 UTZ Monitoring Wells

The six UTZ monitoring wells were installed in locations across the site to provide information relative to the hydraulic gradient, hydraulic conductivity, geology, contaminant concentrations in the UTZ, and to assess the potential for offsite migration of contaminants.

Monitoring well MW-12A was installed adjacent to the west-central property boundary near Phase 1 CPT/ROST™, CPT25R. Well MW-12A was drilled to a total depth of 30 feet and screened in the UTZ from 25 to 15 feet bgs. Three soil samples were collected from the MW-12A boring and analyzed for VOCs by EPA Method 8260 and PAHs by EPA Method 8270.

Monitoring well MW-13 was installed in the northwest corner of the site near Phase 1 CPT/ROST™, CPT23R to provide hydrogeologic information in the Tie Storage Area. MW-13 was drilled to a total depth of 25 feet and was screened in the UTZ from 21 to 11 feet bgs. Three soil samples were collected from the MW-13 boring and analyzed for VOCs and PAH.

Monitoring well MW-15 was installed in the UTZ near the north property boundary adjacent to Phase 1 CPT/ROST™, CPT19R. The well was located in the assumed hydraulic downgradient direction from the Original Process Area (SWMU 5) and Phase 1 Hydropunch™ ground water sample HP14UTZ, which contained the highest detected concentration of dissolved PAHs. Monitoring well MW-15 was drilled to a total depth of 27 feet and screened in the UTZ from 24 to 14 feet bgs. Three soil samples were collected from the MW-15 boring and analyzed for VOCs and PAH.

Monitoring well MW-16 was installed near the south property boundary within the Original Process Area (SWMU 5) adjacent to Phase 1 CPT/ROST™, CPT07R. Monitoring well MW-16 was drilled to a total depth of 30 feet and screened in the UTZ from 24.5 to 14.5 feet bgs. Three soil samples were collected from the MW-16 boring and analyzed for VOCs and PAH.

Monitoring well MW-17 was installed near the north property boundary in the assumed hydraulic downgradient direction from the Recent Process Area. Monitoring well MW-17 was drilled to a total depth of 35 feet and screened in the UTZ from 30 to 20 feet bgs. Two soil samples were collected from the MW-17 boring and analyzed for VOCs and PAH.

Monitoring well MW-18 was installed near the east property boundary within the Recent Process Area adjacent to Phase 1 CPT/ROST™, CPT17R. Monitoring well MW-18 was drilled to a total depth of 35 feet and screened from 30 to 20 feet bgs. Three soil samples were collected from the MW-18 boring for VOCs and PAH analyses.

#### 2.5.3 STZ Monitoring Wells

Monitoring well MW-12B was installed adjacent to the west-central property boundary near Phase 1 CPT/ROST<sup>TM</sup>, CPT25R to provide information relative to the hydraulic gradient, hydraulic conductivity, geology, and contaminant concentrations in the STZ on the west property boundary. Affected soils based on field screening was observed through the entire depth of the MW-12B soil boring; therefore, surface isolation casing was not installed. Monitoring well MW-12B was drilled from surface to a total depth of 45 feet and screened in the STZ from 40 to 30 feet bgs. Two soil samples were collected from the MW-12B boring for VOCs and PAH analyses.

Monitoring well MW-14 was installed near the north property boundary adjacent to Phase 1 CPT/ROST™, CPT28R to obtain information on the hydraulic gradient, hydraulic conductivity, geology, and contaminant concentrations in the center of the STZ channel at the property boundary. Isopach maps indicated that the thickness of the STZ is greatest in this area onsite. A 10-inch diameter isolation casing was installed from surface to 56 feet bgs to minimize the potential for cross-contamination. Monitoring well MW-14 was drilled to a total depth of 45 feet and screened in the STZ from 40 to 30 feet bgs. Three soil samples were collected from the MW-14 boring and analyzed for VOCs and PAH.

#### 2.5.4 LSU Monitoring Wells

The purpose for the installation of the LSU wells is to characterize the soil lithology below 60 feet, determine the relative depth, thickness, and lateral continuity of the sand, obtain information regarding contaminant concentrations between 60 feet and the base of the LSU, and determine the direction of ground water flow. To accomplish this, three wells were installed onsite in the LSU. The wells were installed in locations in close proximity to impacted wells completed in the UTZ to provide information relative to the possible attenuation of creosote constituents with depth.

Monitoring well MW-12C was installed adjacent to the MW-12A/MW-12B well nest on the western property boundary. A 10-inch diameter isolation casing was installed from surface to 56 feet bgs to minimize the potential for cross-contamination. The well was drilled to a total depth of 75 feet and screened from 74 to 69 feet bgs. No soil samples were collected for laboratory analyses.

Monitoring well MW-15C was installed adjacent to UTZ monitoring well MW-15 on the north central property boundary. A 10-inch diameter isolation casing was installed from surface to 55 feet bgs to minimize the potential for cross-contamination. The well was

drilled to a total depth of 75 feet and screened from 74 to 64 feet bgs. No soil samples were collected for laboratory analyses.

Monitoring well MW-18C was installed adjacent to UTZ monitoring well MW-18 on the extreme northeast corner of property. A 10-inch diameter isolation casing was installed from surface to 55 feet bgs to minimize the potential for cross-contamination. The well was drilled to a total depth of 80 feet and screened from 77 to 62 feet bgs. No soil samples were collected for laboratory analyses.

### 2.5.5 Drilling Procedures

Drilling associated with the installation of wells completed in the UTZ was conducted using standard 4¼-inch inside diameter (I.D.) hollow-stem augers from surface to total depth. Due to the presence of affected soil in the upper soil horizons, surface isolation casing was installed in the wells completed in the STZ and the LSU with wet rotary techniques using a nominal 16-inch diameter bit. Well installation in the STZ and LSU monitoring wells was conducted using standard 4¼-inch hollow-stem augers by drilling through the base of the surface casing to total depth. All well materials were installed inside the augers.

Continuous soil samples were collected from each boring using 5-foot long split-barrel sampling devices. The soil samples were obtained for lithologic description and classification using the Unified Soil Classification System (USCS). Upon completion of each boring, the drilling equipment and tools were decontaminated using a high-pressure steam-cleaner at the on-site temporary decontamination pad.

Contaminated soil cuttings, drilling mud and decontamination wastewaters were transported offsite for treatment or disposal as listed hazardous wastes (F001 or F032 contaminated media).

### 2.5.5.1 UTZ Well Construction

Each permanent well was constructed of 2-inch ID, Schedule 40, flush-threaded, PVC casing and screen. The well screen was constructed of factory-slotted, Schedule 40, PVC screen with 0.010-inch slots. The well casing was cut off approximately 5 feet above the surface grade to facilitate the installation of steel protective covers.

A 20 to 40 sieve silica sand filter pack was installed around the screen to a minimum of 2 feet above the screened interval. A 2-foot thick bentonite pellet seal was installed above the filter pack and hydrated with potable water. The remaining annular space to the ground surface was filled with a tremied cement/bentonite grout. Surface completions consisted of a steel protective surface casing with lockable cap, a 4-foot by 4-foot concrete pad constructed around the base of the well riser, and four protective steel guard posts installed around each well to minimize the potential for damage to the wells.

Well construction details are provided in Attachment III.

#### 2.5.5.2 STZ and LSU Well Construction

A nominal 16-inch diameter borehole was drilled to approximately 5 feet above the STZ or LSU. To prevent downward migration of potentially contaminated material during the drilling operations, the upper soil water-bearing zones (UTZ and STZ) were isolated using 10-inch ID, Schedule 80, flush-threaded PVC casing. A plaster of paris plug was placed in the base of the surface casing to keep contaminated formation water from entering the casing and to facilitate drilling below the surface casing to install the well materials. A cement/bentonite grout was tremied into the annular space from the base of the casing to surface grade and allowed to cure for a minimum of 24 hours following placement.

From the base of the surface casing, the borings for the STZ and LSU wells were advanced from inside the 10-inch surface casing to the total depth using standard 4¼-inch augers. Soil below the surface casing was continuously sampled using 5-foot barrel samplers.

The STZ and LSU wells were constructed of 2-inch ID, Schedule 40, flush-threaded, PVC casing and screen. The well screen consisted of factory-slotted screen with 0.010-inch slots. The well casing was cut off approximately 5 feet above the surface grade to facilitate the installation of steel protective covers.

A 20 to 40 sieve silica sand filter pack was installed around the screen to a minimum of 2 feet above the screened interval. A 2-foot thick bentonite pellet seal was installed above the filter pack and hydrated with potable water. The remaining annular space to the ground surface was filled with a tremied cement/bentonite grout. Surface completions consisted of a steel protective surface casing with lockable cap, a 4-foot by 4-foot concrete pad constructed around the base of the well riser, and four protective steel bollards installed around each well to minimize the potential for damage to the wells.

Well construction details for the STZ and LSU wells are provided in Attachment III.

## 2.5.6 Monitoring Well Development

Development of the new monitoring wells was initially performed using a disposable bailer to purge the well and remove the majority of sediment remaining in the well following drilling activities. Bailing was continued until the ground water in each well appeared to be relatively free of sediment. Following bailing, the new monitoring wells were further developed using a submersible pump to purge an additional three casing volumes of ground water. Purged ground water was contained in DOT-approved 55-gallon drums and was disposed offsite as hazardous waste.

# 2.5.7 Ground Water Sampling Procedures

On May 6, 1997, QED Environmental Systems, Inc. (QED) dedicated Micropurge® bladder pumps were installed in each of the 11 new onsite wells. Ground water sampling using low flow technique provided by the dedicated bladder pumps was selected to help provide ground water samples representative of the actual dissolved-phase concentrations of contaminants. Typical bailing or pumping methods may create turbid samples that could result in false positive interferences during analytical testing due to the presence of contaminants adsorbed to colloidal material. The Micropurge® pumps are designed for low flow rate purging to minimize the turbidity of the samples and eliminate the need for purging large volumes of stagnated water from the well casing.

Ground water sampling using the Micropurge® pumps was performed on all of the new wells installed during the Phase 2 investigation between May 13 and 14, 1997. The ground water samples were submitted to Pace under standard chain-of-custody procedures. The primary objective of the sampling event was to collect ground water samples to evaluate the contaminant concentrations in the newly installed wells.

## 2.5.7.1 Sampling Equipment

Each well was equipped with a QED bladder pump, air-line and discharge tubing, and a well head cap with quick-connect fittings and access port for water level measurements. Each pump was positioned within the screened interval of each well. Nitrogen gas, regulated through a pump controller, was used to actuate the Teflon® bladder within the pump housing.

### 2.5.7.2 Sampling Procedures

Water level measurements were recorded in each well on May 13, 1997. Using the length and diameter of the discharge tubing, sampling personnel calculated the amount of water necessary to purge three volumes from the discharge tubing.

Ground water sampling was initiated on May 14, 1997. At each well, the pump controller was connected to the nitrogen bottle regulator and the well head and the discharge tubing connected from the well head into a 55-gallon drum. The nitrogen bottle valve was then opened, feeding gas to the pump controller. The flow was regulated through the pump controller at rates between approximately 100 and 200 milli-liters per minute (ml/min). Three tube volumes of water were purged from the well to help ensure collection of a representative sample.

If the discharge water was turbid or cloudy during evacuation of the tubing, purging was continued until the discharge water appeared to be clear and sediment free. Also during tubing evacuation, sampling personnel regulated (reduced) the flow rate if air bubbles were present in the discharge to minimize aeration of the sample.

Ground water samples were collected directly into clean glass sample jars provided and prepared by the laboratory. Each ground water sample was submitted to Pace and analyzed for Compliance Plan Table I constituents including VOCs by EPA Method 8260, PAHs by EPA Method 8270, TDS, and TSS.

Once the ground water samples were collected from each well, the nitrogen bottle valve was closed and the tubing disconnected from the well head. Dedicated ground water discharge tubing was used for each individual well to minimize the possibility for cross-contamination.

# 2.6 Hydropunch™ Sampling Program

The objective of the Hydropunch<sup>™</sup> sampling program under the Phase 2 investigation was to assess if the ground water impact in the offsite area west of the site. A minimum of four Hydropunch<sup>™</sup> locations were proposed to be collected from accessible property in the offsite area west and northwest of AOC 6. Two Hydropunch<sup>™</sup> locations (HP17 and HP19) were

positioned to assess AOC 6. The remaining two locations would be determined in the field based upon access to city right-of-ways (ROWs) and/or private property.

On May 8, 1997, Phase 2 Hydropunch<sup>™</sup> sampling activities were initiated and the field work was completed on May 12. A total of five Hydropunch<sup>™</sup> locations were completed in the offsite area as shown on Figure 3-3. The following provides the rationale for each Hydropunch<sup>™</sup> location:

- Hydropunch™ HP17 was located within the footprint of the Inactive Wastewater Lagoon (AOC 6), at the extreme southwest portion of the accessible property.
- Hydropunch™ HP18 was located on private property immediately adjacent to impoundment wells MW-10A and MW-10B.
- Hydropunch™ HP19 was placed in the apparent downgradient direction from the Inactive Wastewater Lagoon.
- Hydropunch™ HP20 was located in a City of Houston ROW, approximately 200 feet west of HP18.
- Hydropunch™ HP21, was located on private property north of the Ranch Street ROW.

Two ground water samples were collected at each of the five Hydropunch™ locations. One ground water sample was collected from the UTZ at each location, ranging in depth from 16.5 to 18 feet bgs. Once the UTZ sample was obtained, the Hydropunch™ was pulled from the ground, the boring was tremie-grouted to surface, and the CPT rig moved approximately 5 feet in order to obtain a sample from the STZ in a separate direct-push hole following equipment decontamination. This method was utilized to minimize the possibility for cross-contamination. Hydropunch™ samples collected from the STZ were obtained at depths ranging from 32.5 to 37 feet bgs. The following procedures were implemented in obtaining each Hydropunch™ sample.

The sampling was performed using the CPT vehicle with a 14-ton hydraulic system. Fugro utilized 1¾-inch I.D., 12-inch long stainless steel screens and 1¼-inch I.D. steel rods. Ground water samples were collected using 18-inch long stainless steel bailers.

Target intervals were selected for ground water collection based on CPT/ROST<sup>M</sup> logs. The rig was positioned over the location and the sampler was pushed to the target interval. When the desired depth was reached, the push rods were retracted to expose the screen to the water-bearing zone. Following a short waiting period, a small-diameter bailer was lowered through the push rods to collect a ground water sample. The bailer was pulled to the surface and the ground water transferred into laboratory-supplied sample containers.

If the water-bearing zone would not recharge enough to enable collection of the required volume of ground water for the samples, the Hydropunch™ location was abandoned. Of the ten Hydropunch™ samples attempted, one sample collected from the UTZ (HP17) and one sample from the STZ (HP19) did not yield sufficient water volume to fill the appropriate sample containers for separate PAH, TDS and TSS analyses.

Immediately upon retrieval of the bailer from the Hydropunch<sup>™</sup> sampler, the water sample was transferred from the bailer to the sample containers which were labeled and placed in ice filled coolers. Under chain-of-custody (COC) control, the ground water samples were submitted to the PACE, Inc. (Pace) laboratory located in Houston, Texas. All Hydropunch<sup>™</sup> samples, except as noted above, were analyzed for VOCs by EPA Method 8260, PAHs by EPA Method 8270, total dissolved solids (TDS) by EPA Method 160.1, and total suspended solids (TSS) by EPA Method 160.2.

Immediately following the collection of ground water samples, the sampler and push rods were pulled and each hole was tremie-grouted to surface. Following collection of each Hydropunch™ sample, the rods and sampler used to obtain the water sample were transported

to the decontamination pad on the SPTCo property for decontamination. The equipment was washed with a high pressure steam cleaner using potable water and Alconox<sup>®</sup>. The samplers were then rinsed with potable water.

### 2.7 Slug Tests

Slug tests were proposed in the EOC Investigation and the RFI Work Plans to be performed at monitoring wells MW-10A, MW-10B, MW-11A, and MW-11B. The purpose of the slug testing was to provide information on the hydraulic conductivity of the deposits screened in the UTZ and STZ. To provide a larger population of data, the slug testing program was modified to include additional wells completed during the Phase 2 investigation. Slug tests were performed on a total of ten monitoring wells between May 1 and May 2, 1997, consisting of seven UTZ wells: MW-10A, MW-12A, MW-13, MW-15, MW-16, MW-17, and MW-18; two STZ wells: MW-12B and MW-14; and one LSU well, MW-12C. The slug tests were performed using the following procedure.

The static water level in each monitoring well was measured using an electric sounding device. A transducer was placed in the monitoring well to a depth of 10 feet below the static water level and was connected to a Hermit 2000 data logger. After setting the transducer in the well, the water level was measured the monitoring well. Once the water level returned to the static level, the slug was lowered to approximately 1-foot above the static water level. The slug was completely submersed below the water while simultaneously starting the data logger. The data logger was operated for a period of ten minutes to collect falling-head data.

After stopping the data logger, the water level was again measured in the well. When the water level returned to static conditions, the slug was elevated above the water level and the data logger simultaneously restarted. The data logger was operated for a period of ten minutes to collect rising-head data.

At the completion of each test, the transducer and slug were removed from the well.

The transducer and slug were decontaminated with a brush using an Alconox® and distilled water solution. The equipment was then rinsed twice with distilled water.

Each slug test was analyzed using the Bouwer and Rice Method (Bouwer and Rice, 1976).

### 2.8 Surface Soil Sampling Program

Surface soil samples were collected onsite to provide necessary data to determine the distribution and concentrations of PAHs in surface soils and to allow for risk-based analyses of the data. The objectives for the collection of surface soil samples were to:

- define the nature and extent of creosote and BTEX contaminants in surface soils in the Tie Storage Area and the Former Process Areas;
- provide sufficient soil data for conducting a baseline risk assessment; and,
- provide a basis to identify areas of surface soils that meet or attain risk-based cleanup levels as calculated in the risk assessment.

In accordance with EPA RFI Guidance document EPA 530/SW89-031, a systematic grid established at 200-foot centers was used for the collection of surface soil samples from within the Former Process Area and the Tie Storage Area. Figure 3-4 shows the surface soil sample locations collected at each grid node.

A total of 20 surface soil samples were collected within the Tie Storage Area. Surface soil samples were collected at each grid node at a depth of approximately 6 inches bgs.

A total of ten surface soil samples were collected within the Former Process Areas at each grid node at a depth of approximately 6 inches bgs.

Each surface sample location was prepared by removing the asphalt or gravel surface and the upper 5 inches of soil using a pick. The soil samples were obtained from approximately 5.5 to 6 inches bgs using a decontaminated stainless steel spoon. Each soil sample was placed directly into laboratory-supplied glass soil jars with Teflon® lined lids and filled as completely as possible to minimize headspace. Upon collection, each sample was labeled and placed directly on ice in a laboratory supplied cooler. The soil samples were transported under COC control to Pace for PAH analysis.

Prior to collecting each sample, the stainless steel spoon and pick were decontaminated with a brush using an Alconox® and distilled water solution. The spoon was rinsed twice with distilled water.

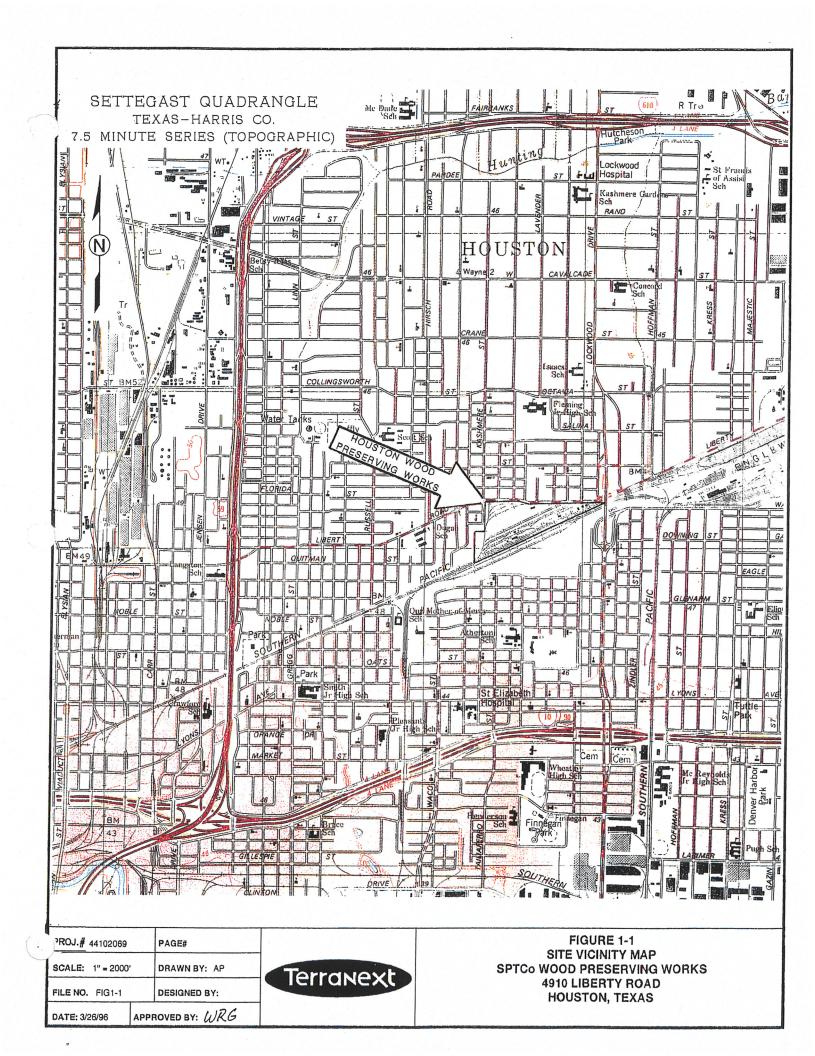
### 3.0 REFERENCES

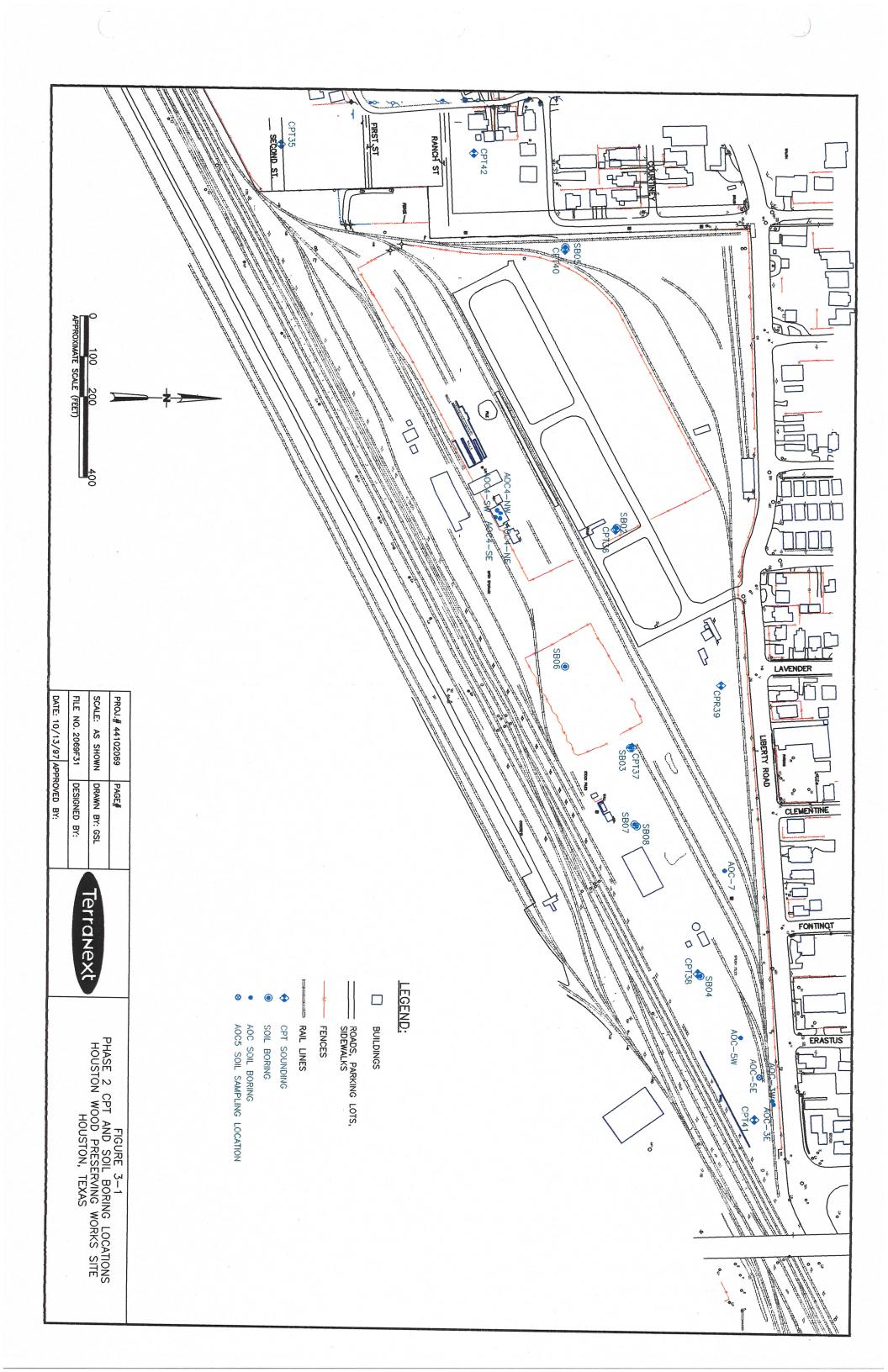
Bouwer, H., and Rice, R.C., 1976, A Slug Test For Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells; Water Resources Research, v. 12, n. 3, p. 423-428.

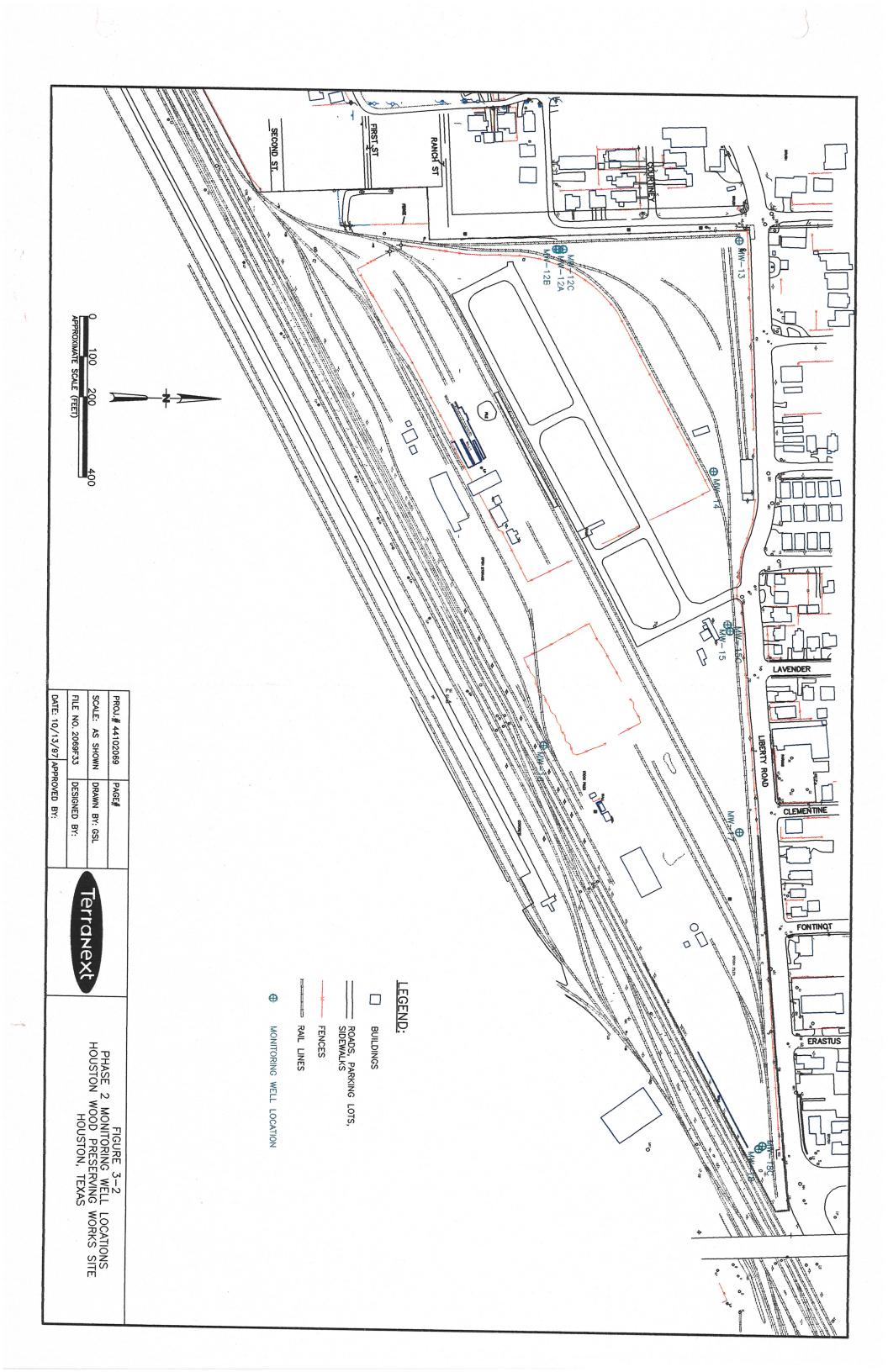
Terranext, Phase 1 RFI/Extent of Contamination Investigation Report, May 1996.

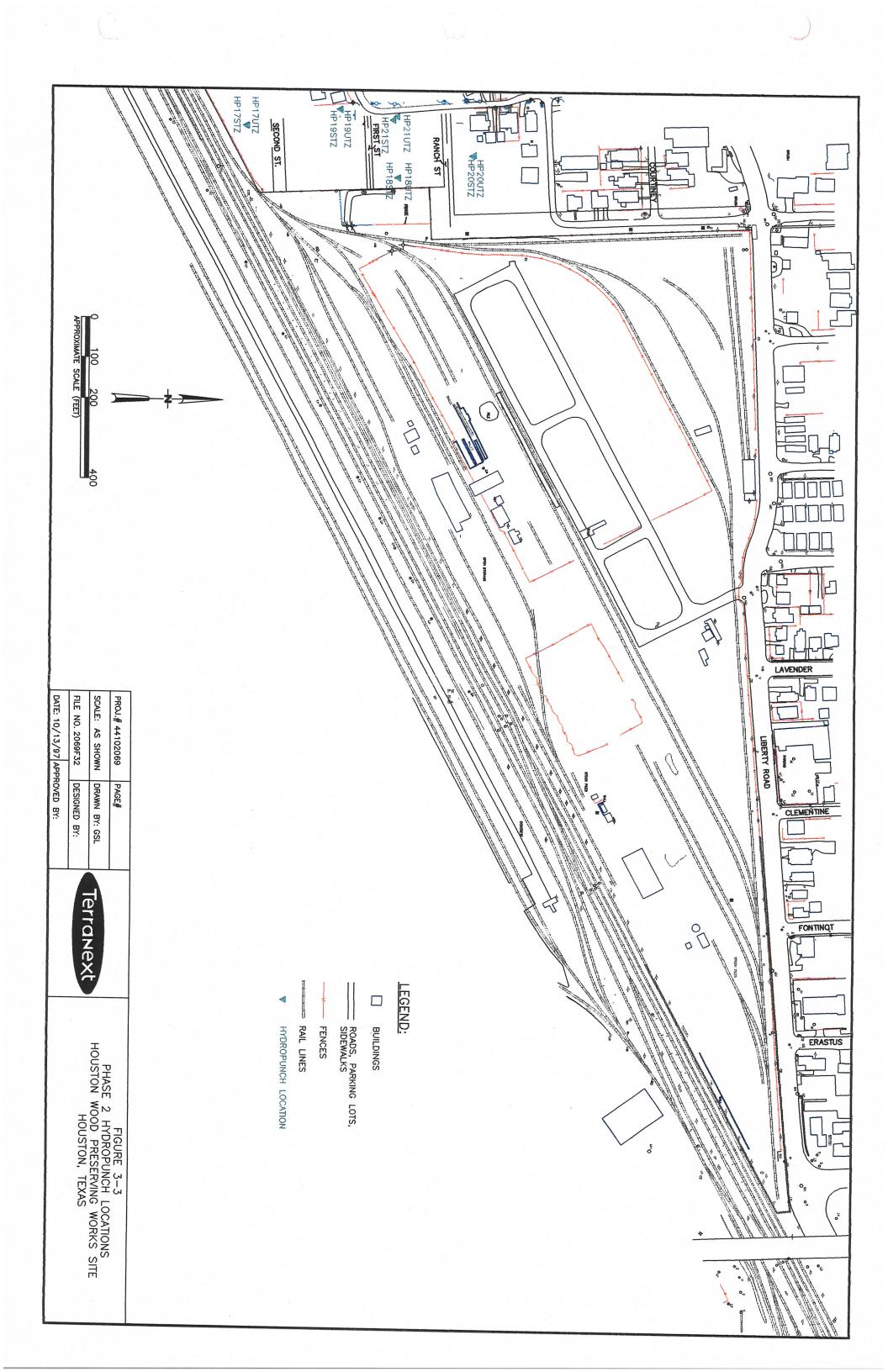
USEPA "Interim Final RCRA Facility Investigation Guidance; "Volume I of IV, EPA 530/SW-89-031; May, 1989.

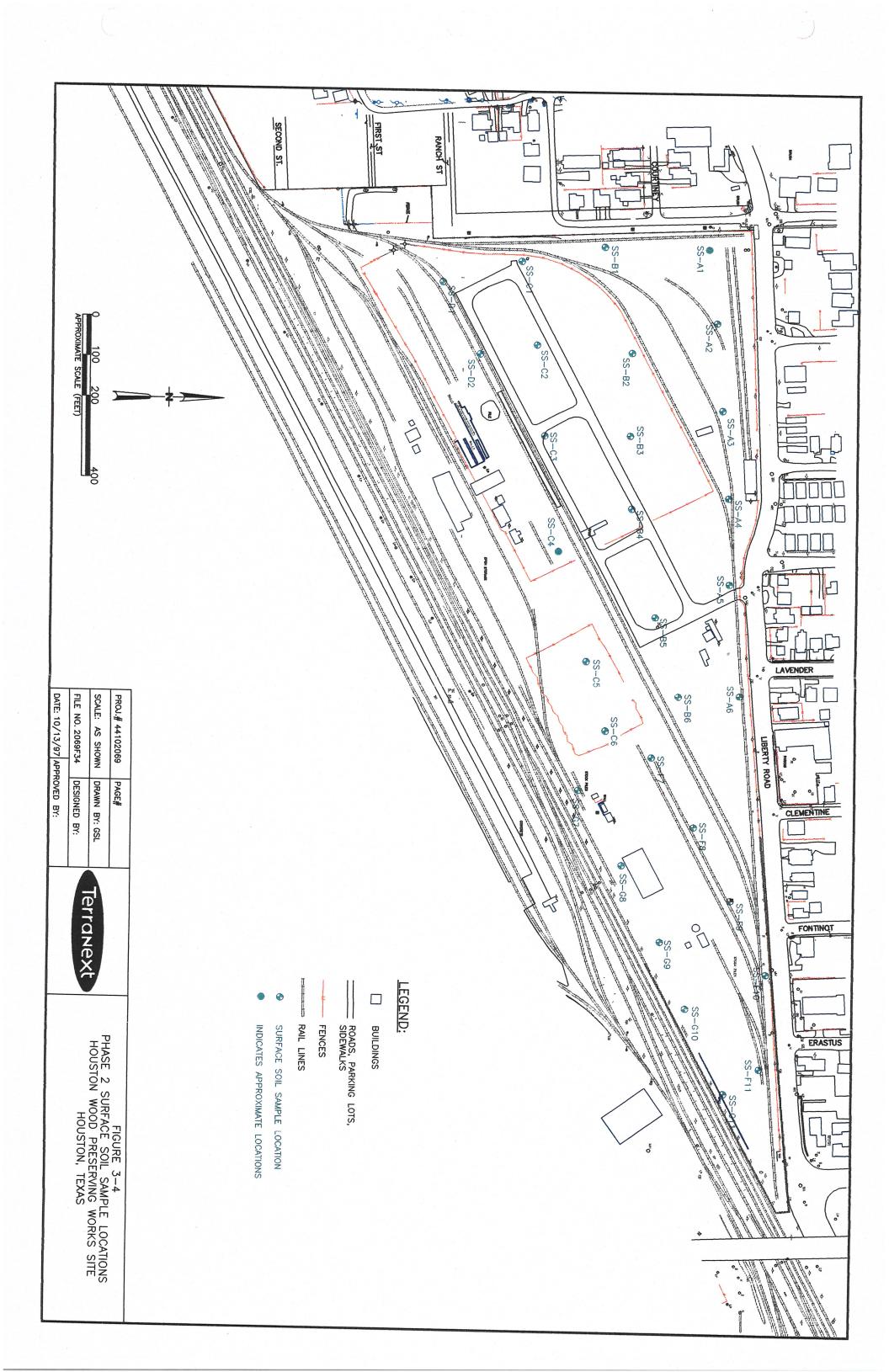
**Figures** 











# ATTACHMENT I

**CPT LOGS - FUGRO GEOSCIENCES** 

# FUGRO GEOSCIENCES, INC.



6105 Rookin Houston, TX 77074 Phone: 713-778-5580

Fax : 713-778-5501

April 7, 1997 Report Number 0301-7031

RECEIVED

APR - 9 1997

Terranext 6200 Rothway, Suite 190 Houston, Texas 77040

Attention:

Mr. Robert Coffman

PIEZOCONE PENETRATION TESTING
AND RELATED SERVICES
FORMER WOOD PRESERVING WORKS
HOUSTON, TEXAS

Dear Mr. Coffman:

Please find enclosed herewith the final results of the piezocone penetration tests conducted at the above referenced location.

For your information, the soil stratigraphy was identified using Campanella and Robertson's Simplified Soil Behavior Chart. Please note that because of the empirical nature of the soil behavior chart, the soil identification should be verified locally.

Fugro Geosciences appreciates the opportunity to be of service to your organization. If you should have any questions, or if we can be of further assistance, please do not hesitate to contact us. We look forward to working with you in the future.

Very truly yours,

FUGRO GEOSCIENCES, INC.

Recep Yilmaz

President

RY/mdt Diskette Enclosed



# Key To Soil Classification and Symbols

#### SOIL TYPE SAMPLE TYPE (Shown in Symbol Column) (Shown in Samples Column) Sand Silt Clay Undisturbed Split Spoon **Rock Care** No Recovery Predominant Type Shown Heavy

#### TERMS DESCRIBING CONSISTENCY OR CONDITION

#### COARSE GRAINED SOILS (Major portion Retained on No. 200 Sieve)

Includes (1) clean gravels and sand described as fine, medium or course, depending on distribution of grain sizes (2) silty or clayey gravels and sands and (3) fine grained low plasticity soils (PI < 10) such as sandy silts. Condition is rated according to relative density, as determined by lab tests or estimated from resistance to sampler penetration.

Descriptive Term	Penetration Resistance*		Relative Density
Loose	0 - 10		0 to 40%
Medium Dense	10 - 30		40 to 70%
Dense	30 - 50		70 to 90%
Very Dense	Over 50		90 to 100%

<sup>\*</sup> Blows/Foot, 140# Hammer, 30° Drop

#### FINE GRAINED SOILS (Major Portion Passing No. 200 Sieve)

Includes (1) inorganic and organic silts and clays, (2) sandy, gravelly or silty clays, and (3) clayey silts. Consistency is rated according to shearing strength, as indicated by penetrometer readings or by unconfined compression tests for soils with PI > 10.

Descriptive	Cohesive Shear Strength		
Term	Tons/Square Foot		
Very Soft	Less Than 0.125		
Soft	0.125 to 0.25		
Firm	0.25 to 0.50		
Stiff	0.50 to 1.00		
Very Stiff	1.00 to 2.00		
Hard	2.00 and Higher		

Note: Slickensided and fissured clay may have lower unconfined compressive strengths than shown above because of planes of weakness or shrinkage cracks; consistency ratings of such soils are based on hand penetrometer readings.

#### TERMS CHARACTERIZING SOIL STRUCTURE

Parting:	paper thin in size	Flocculated:
Seam:	1/8" to 3" thick	
Layer:	greater than 3°	Slickensided:
Fissured:	containing shrinkage cracks, frequently filled with	
	fine sand or silt, usually more or less vertical	Degree of Slickensided
Sensitive:	pertaining to cohesive soils that are subject to	
	appreciable loss of strength when remolded	Slightly Slickensided:
Interbedded:	composed of alternate layers of different soil	
	types	
Laminated:	composed of thin layers of varying color and	Moderately Slickenside
	texture	
Calcareous:	containing appreciable quantities of calcium	Extremely Slickensided
	carbonate	
Well Graded:	having wide range in grain sizes and substantial	
	amounts of all intermediate particle sizes	
Poorty Graded:	predominantly of one grain size, or having a	Intensely Slickensided
2	range of sizes with some intermediate size miss-	
	ing	

pertaining to cohesive soils that exhibit a loose ited:

knit or flakey structure

ided: having inclined planes of weakness that are

slick and glossy in appearance.

#### of Slickensided Development

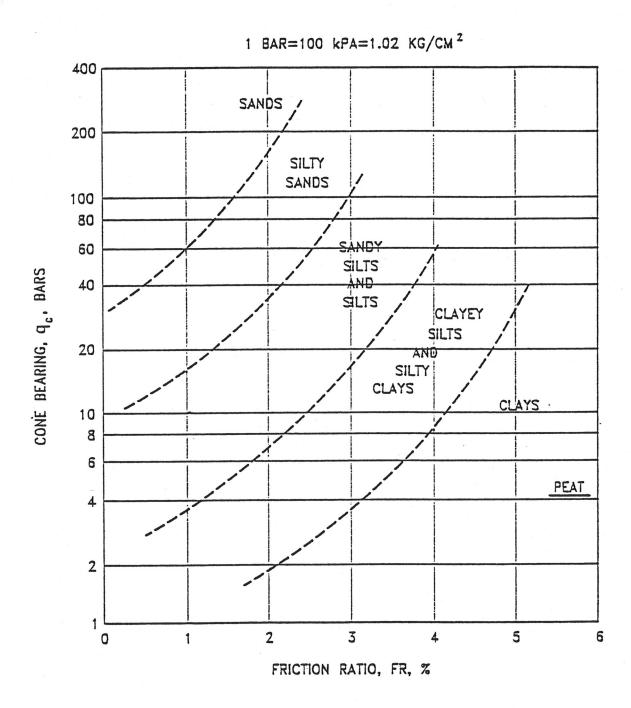
Slightly Slickensided:	slickensides present at intervals of 1' to 2', soil does not easily break along these plates			
Moderately Slickensided:	slickensides spaced at intervals of 1' to			
	2', soil breaks easily along these planes			
Extremely Slickensided:	continuous and interconnected slicken- sides spaced at intervals of 4° to 12',			
	soil breaks along the slickensides into			

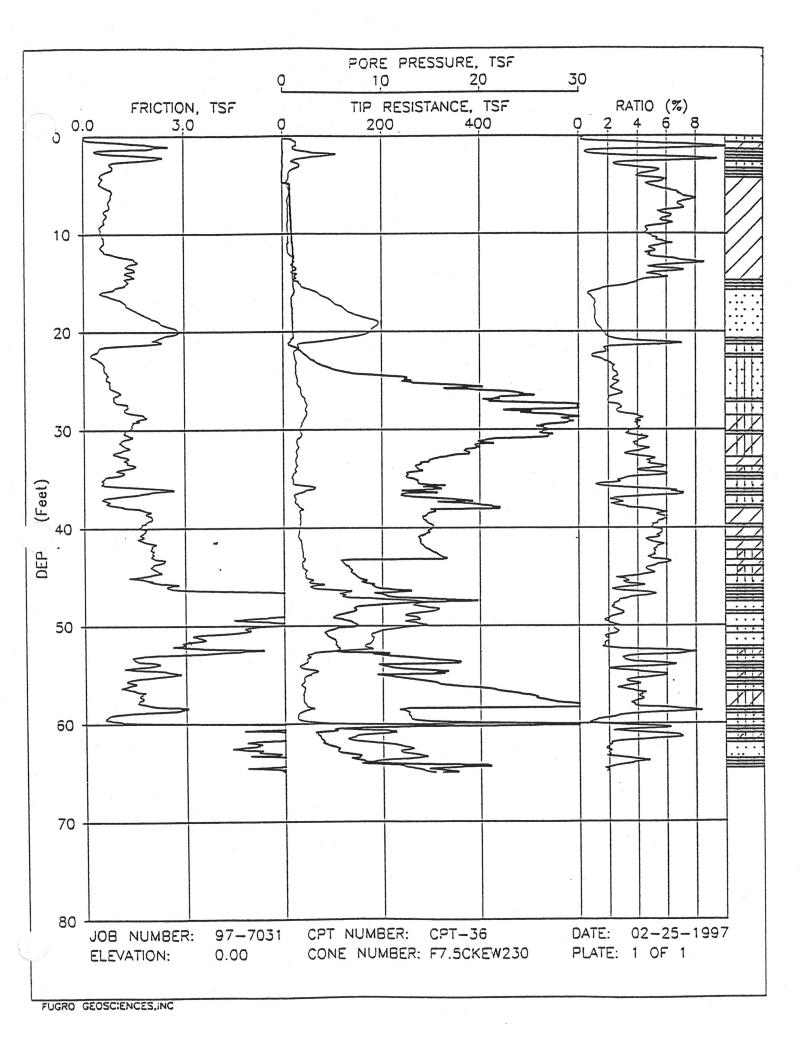
ly Slickensided:

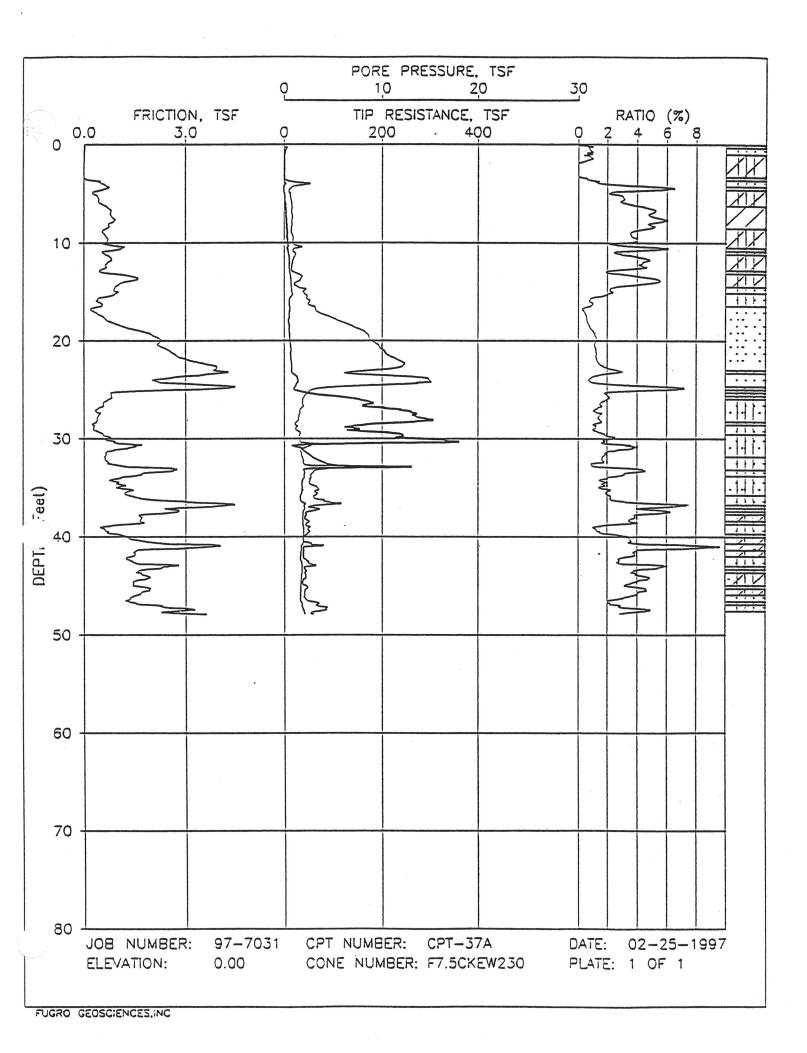
slickensides spaced at intervals of less than 4", continuous in all directions; soil breaks down along planes into nodules

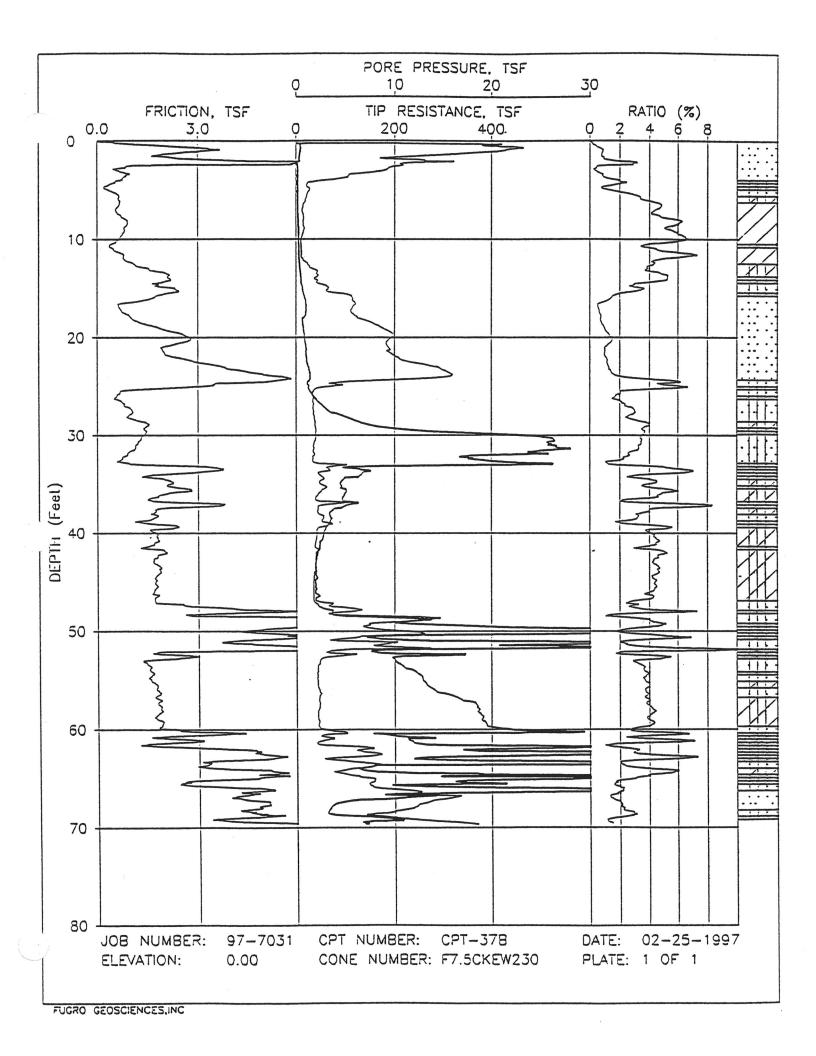
1/4" to 2" in size.

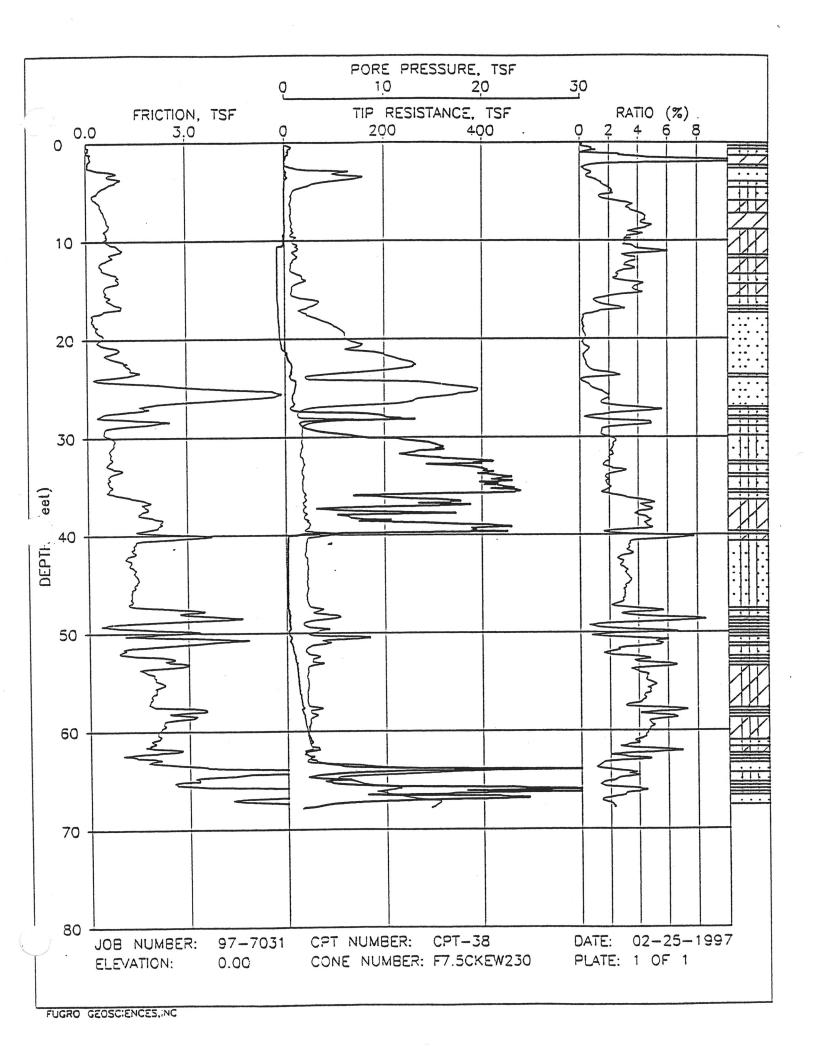
pieces 3° to 6° in size

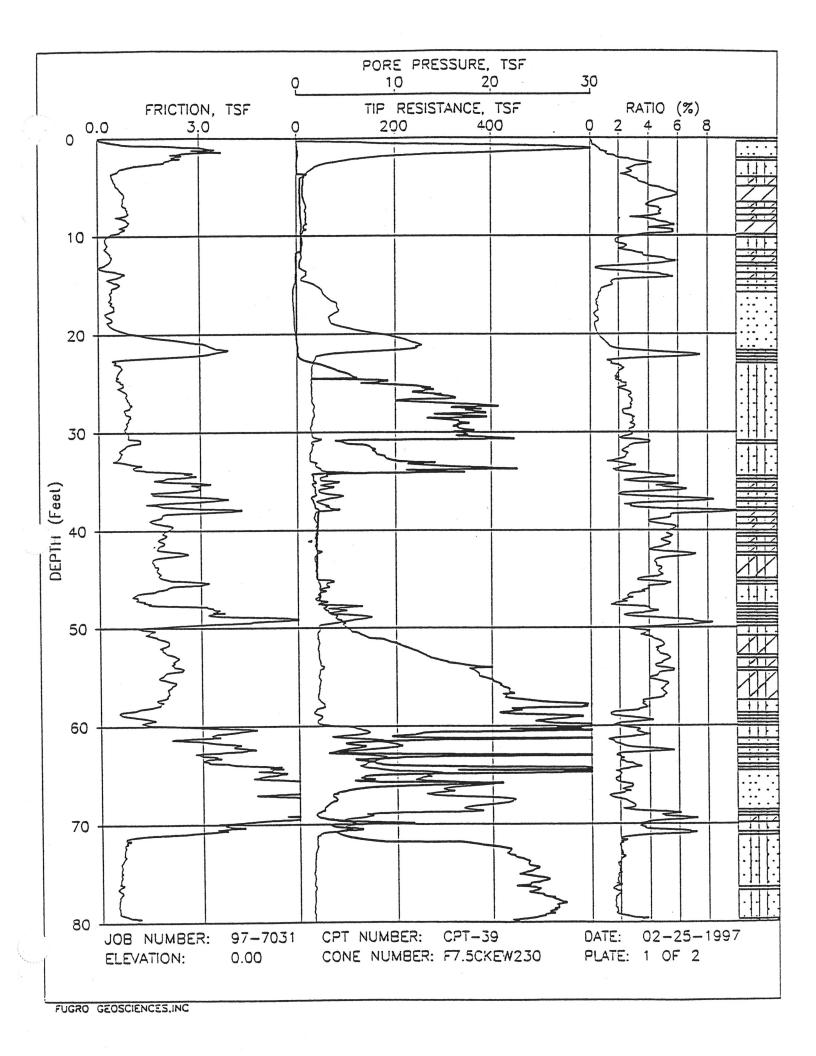


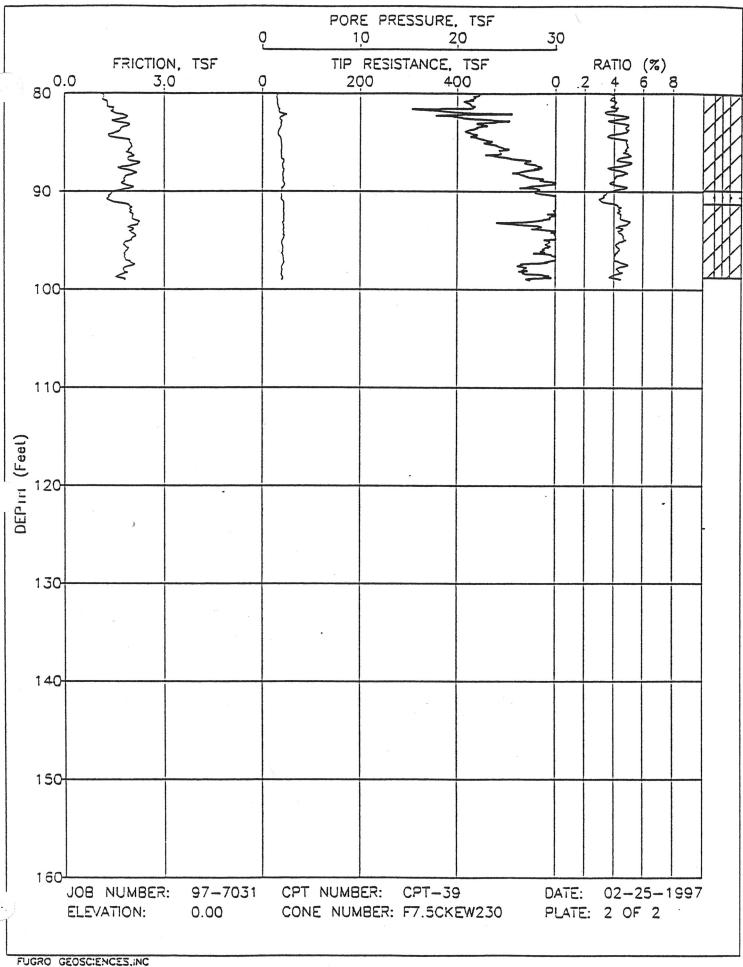


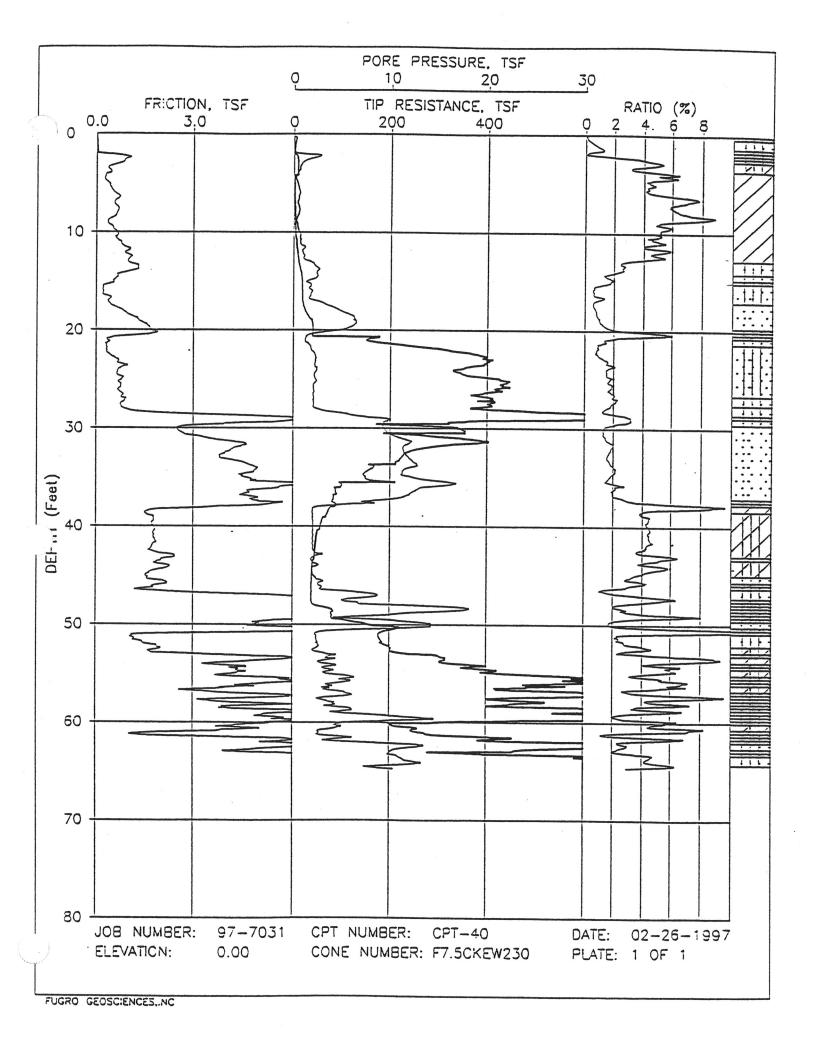


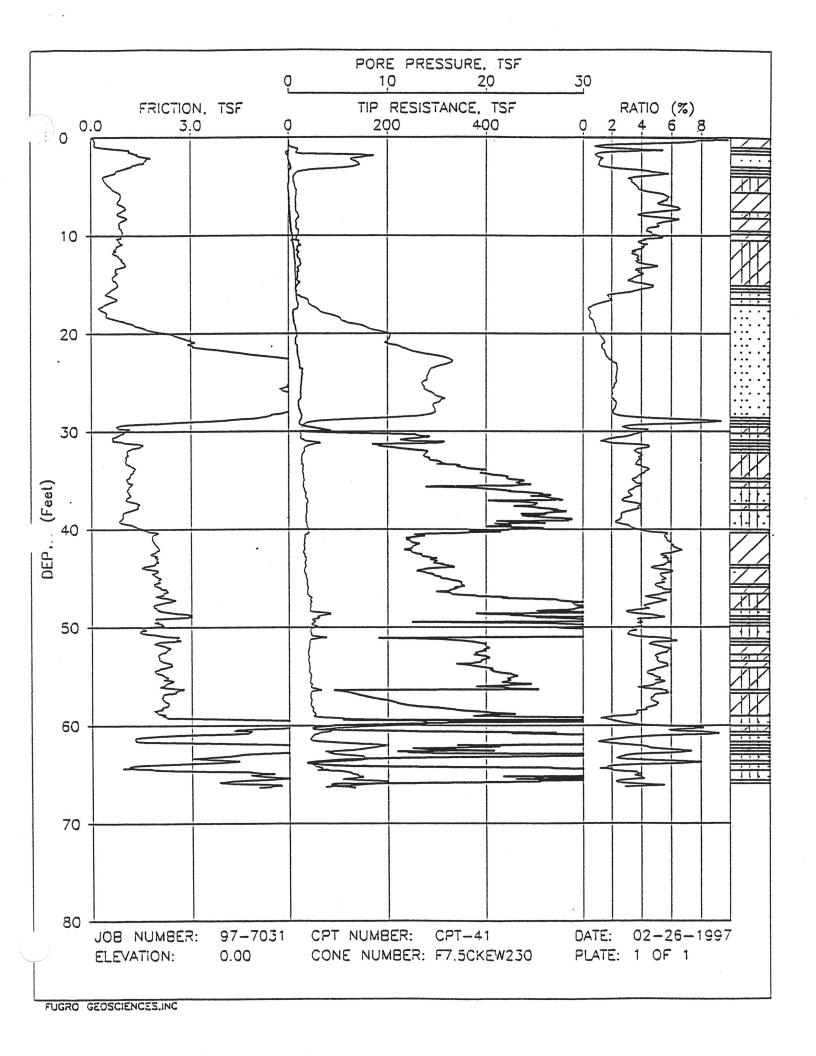












URIGINAL

RECEIVED MAY 1 5 1997



TUGRO GEOSCIENCES, INC.

6105 Rookin Houston, TX 77074 Phone: 713-778-5580

Fax : 713-778-5501

May 14, 1997 Report Number 0301-7096

FILE COPY

Terra Next 6200 Rothway, Suite 190 Houston, Texas 77040

Attention:

Mr. Robert Coffman

PIEZOCONE PENETRATION TESTING AND RELATED SERVICES FORMER WOOD PRESERVING WORKS HOUSTON, TEXAS

Dear Mr. Coffman:

Please find enclosed herewith the final results of the cone penetration tests conducted at the above referenced location.

For your information, the soil stratigraphy was identified using Campanella and Robertson's Simplified Soil Behavior Chart. Please note that because of the empirical nature of the soil behavior chart, the soil identification should be verified locally.

Fugro Geosciences appreciates the opportunity to be of service to your organization. If you should have any questions, or if we can be of further assistance, please do not hesitate to contact us. We look forward to working with you in the future.

Very truly yours,

FUGRO GEOSCIENCES, INC.

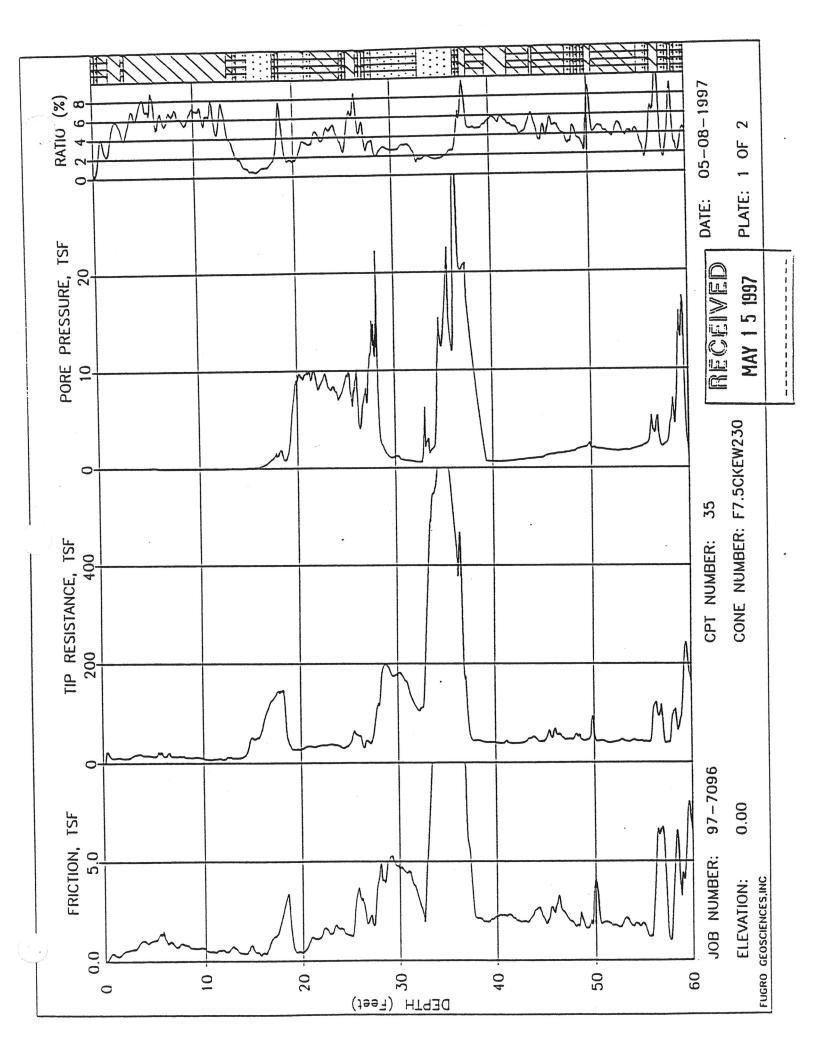
Jeffery L. Ness General Manager

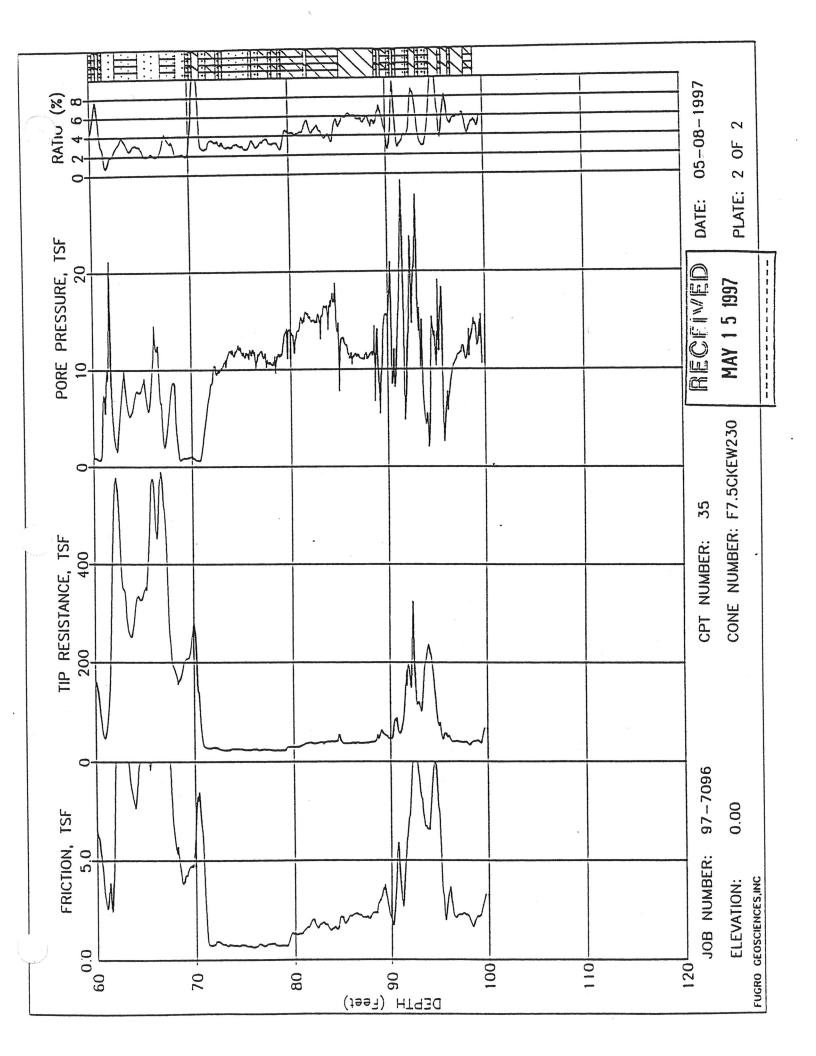
**CPT Operations** 

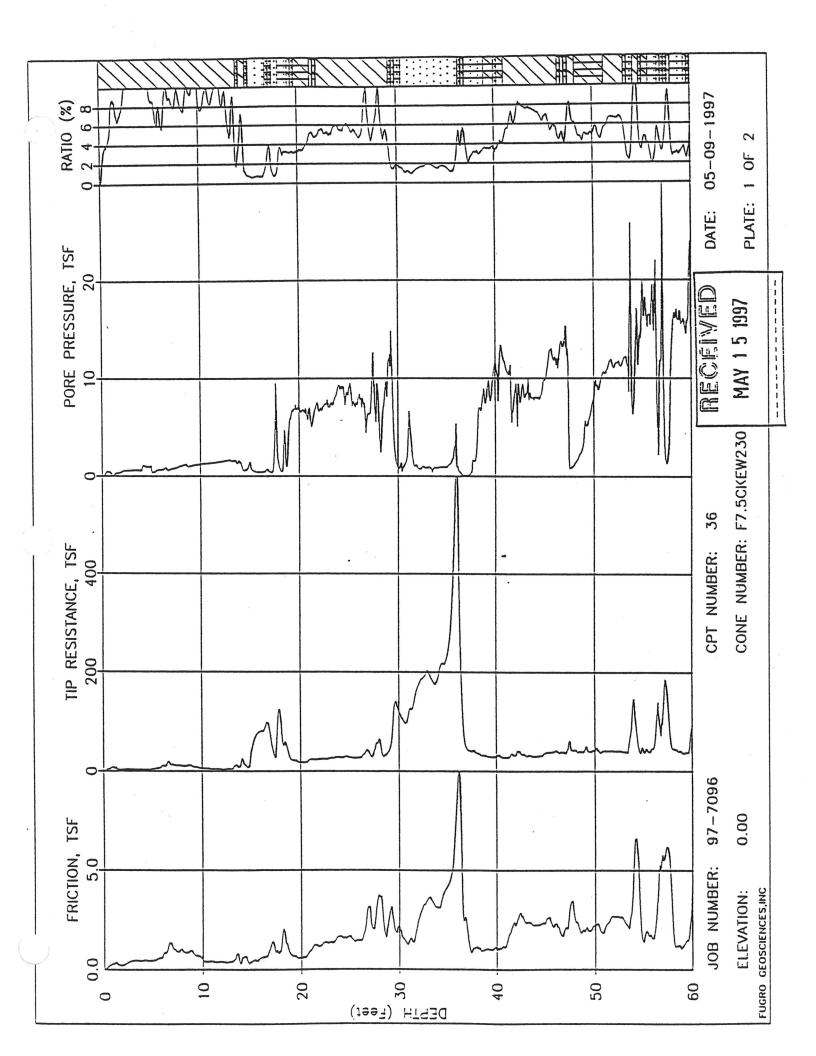
**JLN/mw** 

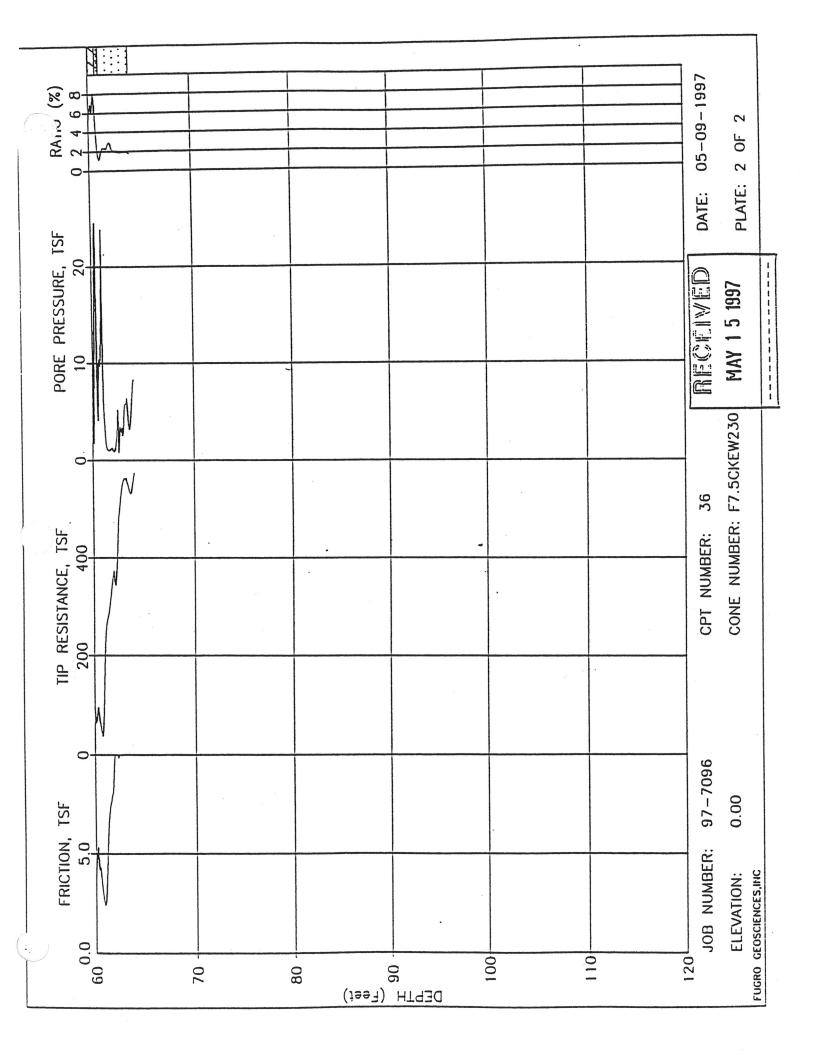
1 Diskette Enclosed











ATTACHMENT II

SOIL BORING LOGS

					LOG OF BORING No.:	AOC3-E	
Terronext						SHEET NUMBER 1 OF 1	
				DRILLING CONTRACTOR:	Best Drilling Services	Location Diagram	
~ <del>\</del>	vr: Southern Pacific Lines					Hollow Stem Auger .	200sterr Diagram
NT:					URILLING METACO.	Tollow delit Auge.	
PROJECT NAM	Houston Wood Preserving Works						_
		102069.07			SAMPLING METHOD:	Split Scoon	
PROJECT NUM					SAMPLING METHOU:	Spiit Scoon	
PROJECT LOC		10 Liberty Ro	oad		:		
	НО	uston, TX					
				<del></del>	SURFACE ELEVATION:		
BORING LOCA		C3 Area of (		ated	TOC ELEVATION:		
		rtion of Wate			WATER LEVEL:		
START DATE:	03/04/9	7 FINISH DATE			WATER ELEVATION:		
START TIME:	08:39	FINISH TIME:	08:5		DATE:		
SAMPLER	SAMPLE	OVM RECOVERY	CEPTH	soil (		N AND CRILLING CONDITIONS	NOTES:
TYPE	DEPTH (F	PPM) (FT)	N FEET G	RAPH !			
	1		<u>. '</u>	i	FILL, moist, 10YR5/	4, yellowish,	Sample Composited And
SS	0-5	- 5.0	1. F	ILL	brown, ballast		Retained For Chemical
:	i i				CLAY, silty, slightly i	noist,	Analysis
			2	CL	10YR4/1, dark gray		PP = 1.5
1	ı İ		;	i	FILL, moist, 10YR2/	1, black, layer	
į			31 F	ILL	of charred material,	rocks, brick	
<u> </u>	<del></del>	:		i	SILT, very slightly m		
		:	4.	i	dark grayish brown	and the second s	
	<del>i i</del>			ML	>50% limestone & g	ranite	
		•	-		i do // iii/loctorio u gi		
	1		5				
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			6	1	Boring TD @ 5.0'		
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			20	:			
eologi	ist P	Goldsby				LEGEND:	Cl - Completion Interval
checke		Coldaby				SS - Split Spoon	OVM - Organic Vapor Meter
SHOOKE	Jy.						PP - Pocket Penetrometer

TOC - Top Of Casing

				LCG OF BORING No.: AOC3-W	
	Terro	TOYP	1	10001 001111011011 71000111	
		75.77		5 5	SHEET NUMBER 1 OF 1
				DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
ENT:		ern Pacific		DRILLING METHOD: Hollow Stem Auger	-
PROJECT NAM			Preserving		<u>.</u>
	Works				•
PROJECT NUM		069.07		SAMPLING METHOD: Split Spoon	· 1
PROJECT LOC		iberty Ro	ad		
	Houst	on, TX			<u>i</u>
				SURFACE ELEVATION:	<u>:</u>
BORING LOCA			ontaminated	TOC ELEVATION:	<u>!</u>
		n of Water		WATER LEVEL:	<u>i</u>
START DATE:	03/04/97	FINISH DATE:	03/04/97	WATER ELEVATION:	· •
START TIME:	08:18	FINISH TIME:	08:39	DATE:	
SAMPLER	SAMPLE OVM	RECOVERY	DEPTH SOIL C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH (PPM)	(FT)	IN FEET GRAPH I		
	_			FILL, slightly moist, 10YR3/3, dark brown,	Sample Composited And
SS	0-5 -	5.0	1 FILL	ballast .	Retained For Chemical
			ML	SILT, moist, 10YR8/4, very pale brown	Analysis
			2 CL	CLAY, silty, moist, 10YR4/1, dark gray	
				FILL, moist, 10YR2/1, black, slight odor	
	i		3 FILL		
			<u> </u>	CLAY, silty, slightly moist,	PP = 2.0
			4 CL	10YR3/1, very dark gray	
	l i				
			5		
!			6:	Boring TD @ 5.0'	
	· !	-	°	Botting 10 @ 5.0	
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eologi		dsby		LEGEND:	CI - Completion Interval
Checke	d By:			SS - Split Spoon	OVM - Organic Vapor Meter
				•	PP - Pocket Penetrometer
					TOC - Top Of Casing

		and the second					LOG CF BORING No.: AOC4-NE	
		110	Rext				•	SHEET NUMBER 1 OF 1
- ·		Por Fair	S Frank				DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
NT:			ern Pacif				DRILLING METHOD: Hollow Stem Auger	_
ROJECT NAME	E:		on Wood	Prese	rving			_
		Works						
ROJECT NUM	BER:		069.07				SAMPLING METHOD: Split Spoon	_
ROJECT LOCA	ATION:		iberty Ro	bad			i i	
		Housto	on, TX					
							SURFACE ELEVATION:	- -
ORING LOCAT	TON:	AOC4	Former	Inciner	ator		TOC ELEVATION:	
		Area					WATER LEVEL:	•
TART DATE:	03/0	3/97	FINISH DATE		3/03/97		WATER ELEVATION:	
TART TIME:	11	:39	FINISH TIME	: 12	2:00		DATE:	• · · · · · · · · · · · · · · · · · · ·
SAMPLER :	SAMPLE	· OVM	RECOVERY	OEPTH	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH	(PP4)	(FT) :	IN FEET	GRAPH	1		
:		:		I	FILL	I	FILL, moist, 10YR3/6, dark yellowish brown	Sample Composited And
SS	0 - 5	:	5.0	1	ML	-	0.5-0.75' - ASH, burned material, 10YR2/1, black	Retained For Chemical
ř		i			i	1	0.75-1.00' - SILT, moist, 10YR5/3, brown	Analysis
!		į		2	SP	1	1.00-1.50' - SHELL, moist, crushed up	
:		1			i	1	1.50-2.00 - SAND, silty, moist,	
		i •		3;	i		10YR5/8, yellowish brown	
	· ·	i	ī :	1	1	1		
		•	1	4	CL	1	2.00 - 5.00 - CLAY, silty, 10YR2/2,	PP = 2.0
			:			i	very dark brown, wood pieces	
		•		_			very dark brown, wood pieces	
·				5:	1			
							Boring TD @ 5.0'	
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eologis	+•	B. Gold	deby	201		_	LEGEND:	Ci Coi i
Checked		J. GOI	usuy				SS - Split Spoon	CI - Completion Interval
J. IGUNGC	. Uy.						ээ - эри эрооп	OVM - Organic Vapor Meter PP - Pocket Penetrometer

			-			LOG OF BORING No.: AOC4-NW		
	(Caro	Kext						CLEST MINISTER 4 OF 4
L	1	The same of				DRILLING CONTRACTOR: Best Drilling Services		SHEET NUMBER 1 OF 1
JENT:	Southe	em Pacific	Lino			DRILLING CONTRACTOR: Best Drilling Services DRILLING METHOD: Hollow Stem Auger	-	Location Diagram
		on Wood P	-			DRILLING METHOD: HOHOW Sterr Auger		<b>-</b>
PROJECT NAM	Works		1636	virig				
	11100	069.07				Salit Sacar		-
PROJECT NUM			. d			SAMPLING METHOD: Split Spoon		<u>-</u>
PROJECT LOC		iberty Roa	iu .				-	: <del>-</del>
	Housic	on, TX						!
	1004	<i>—</i> 1 -			_	SURFACE ELEVATION:		
BORING LOCA		Former In	ciner	ator		TOC ELEVATION:		
	Area			100107	_	WATER LEVEL:		
START DATE:	03/03/97	FINISH DATE:		3/03/97	_	WATER ELEVATION:		
START TIME:	12:00	FINISH TIME:	12	2:25	_	DATE:		
SAMPLER	SAMPLE OVM	RECOVERY	EPTH	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS		NOTES:
TYPE	DEPTH (PPM)	(FT) IN	FEET	GRAPH	11		4,500	
4,					1	FILL, moist, 10YR3/6, dark yellowish brown		Sample Composited And
SS	0-5 —	5.0	1	FILL				Retained For Chemical
						SAND, silty, moist, 10YR5/8 yellowish brown	n,	Analysis
			2!	SP	1	pieces of crushed shell & gravel		
				ML	4	2.00 - 2.25' - SILT, sandy, moist, 10YR3/3 d	ark	
		<u>i i</u>	3!	SP		brown		
	:			1		2.25 - 3.00' - SAND, silty, moist		1 2
			4	CL		10YR5/8, yellowish brown		
						3.00 - 5.00' - CLAY, silty, very slightly moist,		PP = 2.0
	q		5	i		10YR2/2, very dark brown		
			-	<u>'</u>	1	101122, very dark blown		
			_	79 7		D. J. TD O C O		
		<u> </u>	6!			Boring TD @ 5.0'		
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Geologi	st: B. Gold					LEGEND:		Cl Completion Inter-
Checker		addy				SS - Split Spoon		CI - Completion Interval
Silocker	- Uy.					33 - Spill Spoon		OVM - Organic Vapor Meter PP - Pocket Penetrometer
								TOC - Top Of Casing
								OU - TOD OI CASIIIQ

DRILLING CONTRACTOR: Best Drilling Services	HEET NUMBER 1 OF 1
DRILLING CONTRACTOR: Best Drilling Services	
	Location Diagram
Works !	
11100000000	
10.10.1.11	
PROJECT LOCATION: 4910 Liberty Road Houston, TX	
SURFACE ELEVATION:	
BORING LOCATION: AOC4 - Former Incinerator Toc ELEVATION:	
Area WATER LEVEL:	
START DATE: 03/03/97 FINISH DATE: 03/03/97 WATER ELEVATION:	
START TIME: 11:00 FINISH TIME: 11:20 DATE:	
SAMPLER SAMPLE OVM RECOVERY! CEPTH SOIL C SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE DEPTH (PPM) (FT) N FEET GRAPH	NOTES.
	ample Composited And
	imple Composited And etained For Chemical
	alysis
2 SP SAND, moist, 10YR6/1, gray, coarse grained	iaiy313
ML with gravel	
3 SP 2.5-2.75' SILT, sandy, moist, 10YR3/3 dark brown	
2.75 - 3.00' SAND, very moist, 10YR6/2	
light brownish gray, fine grained	
CL light brownish gray, line grained	
	9 = 2.0
10YR2/2, very dark brown	
6: 1	
7 Boring TD @ 5.0'	
	4
8:	
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	Completion Interval
	A - Organic Vapor Meter
	- Pocket Penetrometer
	C - Top Of Casing

					LOG OF BORING No.:	AOC4-SW	
	TOPT	THEYT					SHEET NUMBER 1 OF 1
					DRILLING CONTRACTOR:	Best Drilling Services	Location Diagram
	Carri	the Design				Hollow Stem Auger	
JENT:		them Pacific			DRILLING METHOD:	Hollow Stelli Adgel	-
PROJECT NAM		ston Wood	Preser	virig			<u>.</u>
	Wor					Colit Coope	<u>-</u> !
PROJECT NUM		02069.07			SAMPLING METHOD:	Split Spoon	<del>-</del>
PROJECT LOC		Liberty Ro	pad		-		_
	Hou	ston, TX					
					SURFACE ELEVATION:		<u>-</u>
BORING LOCA		C4 - Former	Incine	rator	TOC ELEVATION:		<u>-</u>
	Area				WATER LEVEL:		<del>-</del>
START DATE:	03/03/97	FINISH DATE		/03/97	WATER ELEVATION:		<u>!</u>
START TIME:	11:20	FINISH TIME:	11	:39	DATE:		
SAMPLER	SAMPLE OV	M RECOVERY	DEPTH	SOIL	• · · · · · · · · · · · · · · · · · · ·	TON AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH · (PP	M) (FT)	IN FEET	GRAPH			
		!		:		, 10YR3/6, dark yellowish	Sample Composited And
SS	0-5 -	- 5.0	1	FILL	brown, gravel, sand	d, wood debris	Retained For Chemical
	i	i					Analysis
			2	SP	SAND, moist, 10YF	R6/1, gray, coarse grained	
	!			ML	with gravel		
			3	SP	2.5-2.75' SILT, san	dy, moist, 10YR3/3 dark brown	
			1 :	·i		very moist, 10YR6/2	
		!	4 y		light brownish gray		
	<u> </u>		419	CL	light brownshi gray	, life grained	
1		i	-	CL		19 1 11 19 19 19 19 19 19 19 19 19 19 19	
	! :		51			slightly silty, very slightly moist,	
				1	10YR2/2, very dark	brown	
1			6:				
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C-21-	iets D (	Coldoby	20			LEGEND:	CI - Completion Interval
Geolog		Goldsby				SS - Split Spoon	OVM - Organic Vapor Meter
Checke	su by:					CO - Opiit Opodii	PP - Pocket Penetrometer
1							TOC - Top Of Casing

							TO SUCCESSION OF THE PARTY OF T	LOG OF BORING No.: AOC5-W	
l		FFQI	<b>lext</b>						SHEET NUMBER 1 OF 1
<u> </u>								DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
ENT:		Southe	m Pacif	icli	nes			DRILLING METHOD: Hollow Stem Auger	Locator Diagram
PROJECT NAM	4E.		n Wood					il	-
F 1000001100		Works				9		4	-
PROJECT NUM	ARES.	441020	069.07				-	SAMPLING METHOD: Split Spoon	
PROJECT LOC			iberty R	oad	-				
- ROSEGI COC	arron.	Housto	n. TX	-					<u>.</u> :
		1.0000						SURFACE ELEVATION:	-
BORING LOCA	TION	AOC5	- Storm	Sew	er \	West		TOC ELEVATION:	•
BONING COO	· · · · · · · · · · · · · · · · · · ·	71000	0.0	-	-			WATER LEVEL:	• :
START DATE:	03/0	4/97	FINISH CATE	g.	03/	04/97		WATER ELEVATION:	•
START TIME:		:24	FINISH TIME		06:			DATE:	<u>.</u> :
SAMPLER	: SAMPLE	OVM	RECOVERY			SOIL	c		NOTES:
TYPE	DEPTH	(PPM)	(FT)	IN FE	-	GRAPH			1
1117	1	1 (17.14)	1		1 1	30011	1	FILL, very slightly moist, gravel,	Sample Composited And
ss	0-5		5.0	1		FILL	1	crushed limestone	Retained For Chemical
	i	<u> </u>	1			. 122		Charred material, moist, 10YR6/1,	Analysis
1	İ			2		FILL		gray, brick, rock	7 tharyon
-	<del>.</del>	1	+	_		1 16000		SILT, moist, 10YR5/3, brown	
	1			3	-	ML	1	CIET, MOISE, TOTTED/O, DIOWIT	
-	<u></u>	i	+	J	-	SP	•	3.00 - 3.25' - SAND, moist, 10YR7/3,	
1				4		MI.	]	very pale brown	
-		<u> </u>	+	_				3.25 - 3.50' SILT, sandy, moist	
	:	1		_	-				00.00
	•	!		5		<b>C</b> 1		3.50 - 7.00' - CLAY, silty, slightly moist,	PP = 2.0
00			20	_	<u>_</u>	CL		10YR3/2, very dark	
SS	5-7	<del> </del>	2.0	6				grayish brown	ii
1				7	-				
. ——	<del>:</del>	1	+	′	<u> </u>	_			
	•				-	_		Boring TD @ 7.0'	
		<u> </u>	+	8	-			Borning To W 7.0	
		!		9					
	•	!	<del> </del>	9			1		
1	:			10					
		1	+		_				
	:	İ		11	-			il	
	:	1	<del>                                     </del>	•			1		
				12	-				
	·	<u>:</u>	+ -	12	-		3		
		!	1 !	13	_				
			<del></del>	13			1		
		i		14	-				
		i	†	, ,			1		
		İ		15			1		
-		<u> </u>	+		-				
				16	-		1		
		1	1	.0	-				
I		:		17					
	***************************************	i	+	.,	-				
		İ		18	-				
-		<del>:</del>	<del>†                                    </del>	.0	-				
	1.0	!		19	-				
		<del>!</del>	<del></del>	13	-				
I .				20	-		-		
eologi	ist:	B. Gold	dsby	20	-			LEGEND:	Cl - Completion Interval
Checke		J. 3010	y					SS - Split Spoon	OVM - Organic Vapor Meter
	- J,							GG - apiit apoon	PP - Pocket Penetrometer
									TOC - Top Of Casing

					LOG OF BORING No.: AOC7	
1	Terro	JOY!	ı			CUETA NUMBER AND ASSESSED.
L	40				DRILLING CONTRACTOR: Best Drilling Services	SHEET NUMBER 1 OF 1  Location Diagram
ENT:	Southe	em Pacific L	ines		DRILLING METHOD: Hollow Stem Auger	Location Diagram
PROJECT NA		on Wood Pr			Tionow Stern Auger	_
PROJECT TO	Works		ooo. viilg			<del>-</del>
PROJECT NUI	11100				SAMPLING METHOD: Split Spoon	1
PROJECT LOC		iberty Road		_		<u>-</u>
		on, TX				<del>-</del>
					SURFACE ELEVATION:	7
BORING LOCA	ATION: AOC7	Former US	T		TOC ELEVATION:	1
	No. 44	-023-21 Are	a		WATER LEVEL:	•
START DATE:	03/03/97	FINISH DATE:	03/03/97		WATER ELEVATION:	ī.
START TIME:	13:25	FINISH TIME:	14:00		DATE:	
SAMPLER	SAMPLE OVM	RECOVERY! DE	PTH SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS.	NOTES:
TYPE	DEPTH (PPM)	(FT) IN F	EET GRAPH	1		1
					FILL, slightly moist, 10YR3/3, dark brown,	Sample 0 - 5' And
SS	0-5 -	5.0 1	FILL		gravel and brick pieces	5 - 10' Composited And
			H		SILT, sandy, moist, 10YR3/3, dark brown	Retained For
ļ		2	ML			Chemical Analysis
				!	CLAY sith was slightly and the	155 00
		3			CLAY, silty, very slightly moist,	PP = 2.0
			<u> </u>		10YR2/2, very dark brown, 3" layer of treated wood @ 2.5'	
ļ	. :	+ 4			3 layer of treated wood @ 2.5	:
	!	5				
					No silt, slightly moist,	
SS	5-10 -	5.0 6	CL		10YR6/1, gray, mottling with	
					10YR6/8, brownish yellow, and	
			<u>'</u>		10YR3/1, very dark gray	
	<u> </u>	8				
			<u> </u>			
	!	1 9	<u> </u>			
		10	<u> </u>			
		10	;			
		11			Boring TD @ 10.0'	
	<u> </u>	<u>'</u> '			Borning 1D @ 10.0	
ļ	i 	12	<u>;</u>			
		'-				
		13				
	<u>.                                    </u>	<del></del> '				l .
		14				
	· :	1 .		:		
		15				·
	i i	'		,		
	!	16		,		
	:	1				
		17		į		•
	<u> </u>	18				
				,		
	<u> </u>	19				
	:					
	i	20				
Seologi		dsby			LEGEND:	CI - Completion Interval
Checke	d By:				SS - Split Spoon	OVM - Organic Vapor Meter
						PP - Pocket Penetrometer
						TOC - Top Of Casing

						-	LOG OF BORING No.: SB02	
	To	FFOT	ievt					SHEET NUMBER 1 OF 3
		frah	CUL				Post Drilling Convices	Location Diagram
							DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
NT:			rn Pacifi				DRILLING METHOD: Hollow Stem Auger	<u>-</u>
JECT NAM	E:		n Wood	Pers	erving			-
		Works					21.5	
PROJECT NUM	BER:	441020					SAMPLING METHOD: CME Sampler	_
PROJECT LOC	ATION:		berty Ro	oad				
		Housto	n, TX					
							SURFACE ELEVATION:	
BORING LOCA	TION:	SB02 H	WPW				TOC ELEVATION:	
							WATER LEVEL:	
START DATE:	3/3	/97	FINISH DATE	: 3/	3/97		WATER ELEVATION:	
START TIME:			FINISH TIME:				DATE:	
SAMPLER	SAMPLE	OVM	RECOVERY	DEPTH	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH	(PPM)	(FT)	IN FEET	GRAPH	1		
11176	) DEFIN	1	1	I		i	Asphalt - very weathered	Boring Advanced with
CB1	1-5		3.8	1				8 1/4" O.D., 4 1/4" I.D.
CBI	1 1-5	1	3.0	. –	FILL		Gravel, dk. brown, loose with trace sand and	hollow stem augers
				2			silt and cinders (Fill)	
	<u> </u>	<u> </u>		2	-		Sill allu Gilueis (Fill)	
l					4			
				3	!	-	I Consulte Of AVe all a series from a series (Physics	
l				L	CL		Gravelly CLAY; dk. gray; firm; moist (Fill)	
				4		11	II	<del>-</del>
					CL		Silty CLAY; It. gray; very stiff; low plasticity;	
	5.0			5	7		moist; grades dk. gray at 4.7'	
	1 3.0	!	-	٦ <u>-</u>	<del>-</del>		moot, grades an gray at 1.7	
				<u> </u>	4			Callant sail completes
C82	5-10	<u> </u>	4.8	6	-		Grades It. gray	Collect soil sample for
ł					4	1	with sparse 1/2" dia. CaC03 nodules	chemical analysis at 7-8'
		<u> -</u>		7				
1					_			-
1				8	_		Grades with numerous peasize CaC03	
					1		nodules and trace sand	
				9	7			
	İ	İ	1		7		CaC03 nodules grade out	
1	10.0			10	7			
	1	1	1		7			
CB3	10-15		5.0	11	-		Iron oxide staining in fractures	
C00	10010	1	1 0.0		-		Horr Grade Glamming in Hudsels	
1		.		12	-			
	-	<del> </del>	+	12	-	1		
				1.	-			
	-	<u>!</u>	-	13	-			
1				_	-			
		!	1	14	1	1	Oleman CH Talk come from law alandalism in	
					ML		Clayey SILT; It. gray; firm; low plasticity; moist	
	15.0	<u> </u>	1	15	_		with trace sand	
	1	1			_			
C84	15-20		0.8	16				
					<u> </u>			
				17		-		
	1	T	I		ML		SILT; It. gray; firm; low plasticity; moist with	
				18	-		trace sand; It. gray; fine grained	
	i		i		-	1		
1				19	SP		Silty SAND; lt. gray; very fine grained; wet	
-	<del>†</del>	+	<del></del>	1 .5				
ļ	20.0			20	-			
)		0 1	<u> </u>	201			LEGEND:	CI - Completion Interval
eolog		R. Lan	ID				SS - Split Spoon	OVM - Organic Vapor Meter
Checke	ed ph:						33 - 3µii 3µ00n	PP - Pocket Penetrometer
1								
1							7	TOC - Top Of Casing

							LOG OF BORING No.:	SB02	
	To		Tart				LOG OF BURING NO.:	3602	SHEET NUMBER 2 OF 3
	IE	rran	EXL					Post Deiling Continue	
			Name of Street, or other Persons and Street,					Best Drilling Services	Location Diagram
CLIENT:		Souther					DRILLING METHOD:	Hollow Stem Auger	-
PROJECT NAM	£	Houston	1 AAOOG	Pers	erving				1
		Works 441020	CO 07					CME Complet	
PROJECT NUM	SER:						SAMPLING METHOD:	CME Sampler	-
PROJECT LOC	ATION:	4910 Li		oad					
		Houston	1, 1	-					-
	<u>.</u>	0000 !!	NA/DIA/	<del></del>			SURFACE ELEVATION:	·	
BORING LOCA	TIONS	SB02 H	VVPVV				TOC ELEVATION:		-
	0.10	107			10.107		WATER LEVEL:		
START DATE:	3/3	191	FINISH DATE		/3/97		WATER ELEVATION:		
START TIME:		<del></del>	FINISH TIME		-		DATE:	WALE POIL ING CONDITIONS	NOTES:
SAMPLER	SAMPLE	OVM	RECOVERY		SOIL	C	SUL DESCRIPTIO	N AND DRILLING CONDITIONS:	NOTES:
TYPE	CEPTH	(PPM)	(FT)	IN FEET	GRAPH	11			Mild Crossets adam collect
005			1 -		4				Mild Creosote odor, collect
CB5			4.5	211	-		Conden work fine to 6	المائح طفند فعدد فالمعادمة	soil sample from 21.0-21.5'
				_	4	1		ine grained; wet with mild	
			-	22!_	-!		creosote odor		
		i i		_	4				
				23	-	1			
				_	4	1			
			!	24	-				Callant anil comple 24 0 24 51
	05.0				-{	1		······	Collect soil sample 24.0-24.5'
	25.0		! !	25		-	I Cilba Ol AVa la amora	. stiffe lass all attails a maint	for chemical analysis
200			1 -		ML	1		v.stiff; low plasticity; moist	
CB6			4.7	26	-	1	with some sand with		
				-	4		Grading hard; It. brov		
			!	27	-		Grades It. gray and It	r prown mottled	
				-	-				
	!		1	28	-				
				291	-				
	1	<u> </u>	!	23	-				
İ	30.0			30	-				
	1 30.0	1	1	-	<del>-</del> i				
C87			3.7	31	-				
- 687	<u> </u>	<u> </u>	1 3.7		-				
1				32	1				
	! !		<del>-</del>	32	-				·
				331	-				
	<u>:</u> I	İ	1	~_	<del>-</del> i				
				34	1				
	Ī	İ	i		7				
	35.0		1	35	7				
		1	Ī		7				
CB8			5.0	36	7				
	Ī		i		1				
	İ		İ	37	7	1			
	l		!		ML	Ī	Clayey SILT; It redd		Collected sample 37.5-38.0'
				381			moist; creosote odor	and oil sheen	for chemical analysis
	İ				Ī				Collect soil sample for
	1		!	39	Ī	1			chemical analysis from 38.5-
					CL	1	Silty CLAY; reddish t	prown; very stiff; low	39.0'
1	40.0	1	!	40		L	plasticity; moist		
eolog		R. Lam	D					LEGEND:	CI - Completion Interval
Checke	ed By:							SS - Split Spoon	OVM - Organic Vapor Meter
1									PP - Pocket Penetrometer
									TOC - Top Of Casing

	1						-	LOG OF BORING No.: SB02	
	T	rra	Jeyt					LOG OF BORING NO.	
	43							DRILLING CONTRACTOR: Best Drilling Services	SHEET NUMBER 3 OF 3 Location Diagram
ENT:		Southe	m Paci	fic L	ine	s		DRILLING METHOD: Hollow Stem Auger	Location Diagram
INTOJECT NAM	4E:		n Wood					Transfer Control Contr	<del>-</del>
		Works							<del>-</del>
PROJECT NUM	ABER:	441020						SAMPLING METHOD: CME Sampler	
PROJECT LOC	ATION:		iberty R	load					
		Housto	n, TX						
		00001	11.0 (5) 4 (					SURFACE ELEVATION:	_
BORING LOCA	TION:	SB02 H	HVVPVV					TOC ELEVATION:	_
	21	3/97			21	3/97		WATER LEVEL:	
START DATE:	3/3	0191	FINISH DATI		3/.	3/9/		WATER ELEVATION: DATE:	-
START TIME:	SAMPLE	OVM	FINISH TIME	1	The state of	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH	(РРМ)	(FT)	N F		GRAPH	1	30.000000000000000000000000000000000000	NOTES.
1176	Jern	(PPM)	1		1	Grown	Ϋ́		
CB9			4.9	41					
		İ		ĺ					
		1		42					
		ļ		43					
		-							
		<u> </u>		44					
	45.0			45					
		1	1						
CB10			4.0	46					
1								·	
į.				47					
			•						
		<u> </u>		48					
									-
		<u> </u>	-	49				SUT: coddiob become feet and the site	
	50.0			50	Н			SILT; reddish brown; firm non-plastic; moist	Collect soil sample for
	50.0	1		30					chemical analysis 49 49.5'
CB11			3.2	51	$\mid \mid \mid$				49 49.5
0011			1 5.2	٥,					
				52	H				
		İ							
				53					
		<u> </u>		54					
	55.0				$\vdash \vdash$				
	55.0	!	!!!	55	1 !				IDaman of hades at 65 Ct
				56	$\vdash$				Bottom of boring at 55.0'
		<del>                                     </del>	+	30	$\vdash$				Backfilled with cement/
				57	$\vdash$				bentonite grout on 3/3/97
		i	<del>i                                    </del>	٠.	$\vdash$				Sometime grout on Group?
				58	$\vdash$				
		İ		-					
				59					
<u> </u>			<u> </u>	60					
Geologi		R. Lam	b					LEGEND:	Cl - Completion Interval
Checke	a RA:							SS - Spiit Spoon	OVM - Organic Vapor Meter
									PP - Pocket Penetrometer
									TOC - Top Of Casing

		-	-					LOG OF BORING No.: SB03	
		rrai	Pext						SHEET NUMBER 1 OF 3
		the think	27-6					DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
NT:		Southe	m Pacif	ic L	ines	5		DRILLING METHOD: Hollow Stem Auger	
PROJECT NAM	€:	Housto	n Wood	Pe	rse	rving			-
		Works							1
ROJECT NUM	BER:	441020	069.07			å	í	SAMPLING METHOD: CME Sampler	
ROJECT LOC	ATION:	4910 L	iberty Ro	oad					Ī
		Housto			-				
								SURFACE ELEVATION:	1
ORING LOCA	TION				-	-		TOC ELEVATION:	1
								WATER LEVEL:	i
TART DATE:	03/0	5/97	FINISH CATE		03	/05/97		WATER ELEVATION:	•
TART TIME:	00.0		FINISH TIME:					DATE:	7
SAMPLER	SAMPLE	OVM	RECOVERY	OEP	P4 I	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
		(PPM)	(FT)	IN FE	- 1	GRAPH	1		1
TYPE	CEPTH	(bare)	1 (F1) 1	IN PE	1 1	GIOGH	1	Gravel	Boring Advanced with 8 1/4-
CB1	1 - 5		3.1	1	$\vdash$			Graver	inch O.D., 4 1/4-inch I.D. HSA
CBI	1-5	<del>                                     </del>	3.1	٠,	-				11161 O.D., 4 17-1161 1.D. 1167
					$\vdash \vdash$	SM		SAND, brown, fine grained creosote impacted	
		-	+	2		SIM		moist	
				_	屵	C11 1	-		
		<u> </u>		3		FILL	-	CINDERS: black:	
					Н	61		Cib. CLAY, dada bassas Jassaslas (Cib.	
		<u> </u>		4		CL		Silty CLAY; dark brown, low plasticity,	
								moist, with creosote odor	
	5.0			5	П			·	Collect sample for chemical
	1 0.0	<u> </u>	<del></del>	٠					
			-	_	Н			(	analysis for 5 - 6 feet
CB2			5.0	6				`	
					Ш				
				7					
									•
				8					
	ĺ			9				grades gray and brown, mottled	
	İ							light trace CaCO3 nodules	
	10.0			10	$\Box$				
		1			$\Box$			grades with iron oxide staining	,
<b>CB3</b>			5.0	11					
	1								
				12					
	<del> </del>	<del> </del>						~ 1/2" sandy silt lens containing creosote	
		İ		13	H				
	<u> </u>	-				-		~ 1/2" sandy silt lens containing creosote	
				14	H		1	The sairty six is is serial in ig a second	
	1	<del></del>	-	,-			1	~ 1/4" sandy silt lens containing creosote	<u> </u>
				15	H		1	Julia, and January and January	
	<u> </u>	<del> </del>	-	13	$\vdash$		1		
CB4			3.9'	40	Н				
CB4	<del> </del>	-	3.9	16		1/61	-	Cil T gray and raddish brown mottled	
					$\vdash\vdash$	ML		SILT, gray and reddish brown, mottled,	
	!			17				low plasticity, moist, varved	<b></b>
							1	with ~0.1" thick sand seams	
				18				creosote odor	
							1		
				19					Collect sample for chemical
	İ								analysis at 19 - 20 feet
	20.0			20					
eolog		R. Lan	dn					LEGEND:	C1 - Completion Interval
hecke								SS - Split Spoon	OVM - Organic Vapor Meter
									PP - Pocket Penetrometer
									TOC - Top Of Casing

							-	LOG OF BORING No.: SB03	
	Te	fran	PYT					333	SHEET NUMBER 2 OF 3
	16		16:11					DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
INT:		Southe	m Pacifi	ic I i	nes			DRILLING METHOD: Hollow Stem Auger	: Location Diagram
PROJECT NAM			n Wood					DRIEDIG METHOD. 110110W Cterri 710ger	<del>-</del>
PROJECT TOWN	-	Works		1 0.	30.	viiig			_
PROJECT NUM	AED-	441020						SAMPLING METHOD: CME Sampler	<u> </u>
PROJECT LOC			iberty Ro	oad					<del>-</del>
F1.00201 600	ATTO-IL	Housto							
								SURFACE ELEVATION:	
BORING LOCA	TION:							TOC ELEVATION:	7
								WATER LEVEL:	
START DATE:	03/0	5/97	FINISH DATE	Ŀ	03	/05/97		WATER ELEVATION:	1
START TIME:			FINISH TIME	:				DATE:	
SAMPLER	SAMPLE	OVM	RECOVERY	DEP	TH	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS:	NOTES:
TYPE	DEPTH	(PPM)	(FT)	IN FE	E	GRAPH	ı		
C85			3.9	21					`
		! !				SP		Silty SAND, grayish brown, very fined grained,	
		!		22				wet, with creosote odor	
		:		23					
					Ш			~ 1/2" diameter clay nodules	
				24				clay nodules grade out	Collect soil sample for
		:							chemical analysis @ 24 - 25'
	25.0			25	Н				
	23.0	, ,	-	25					
000			0.0		$\vdash$		1		
CB6	<u> </u>	<del>:</del>	3.8	26			1		
4		!			Н		1		
		<u> </u>	-	27					
ľ		! !			H	CL	1	Silb. CLAY and brown method:	
	1	:		28		CL		Silty CLAY, gray and brown mottled;	
				-	$\vdash$			very stiff, low plasticity, moist creosote odor	
	1	<u>!</u> :	-	29				Creosore oddi	
	30.0			30	H				
	1 30.0	:	-	30					
C87			5.0	31	H		1		
007	<u> </u> 	<u> </u>	1 0.0	31					
				32	H				1
			-	52					
		:		33	H				
		:		-					
		!		34	H				
	İ	!		آ ا	T				
	35.0	!		35	H				
	1	!						grading with creosote in hairline fractures	
CB8				36	$\Box$			comprises ~ 1% of sample	
		I							
		İ		37	П				
	İ	i							
		į		38					
-	i -								
I		!		39					
	İ		1					0.1" thick silt/sand lenses contain creosote	Collect soil sample for
1	40.0	i		40					chemical analysis @ 39.5 - 40'
eologi		R. Lan	nb		-			LEGEND:	Cl - Completion Interval
Checke								SS - Split Spoon	OVM - Organic Vapor Meter
	•								PP - Pocket Penetrometer

		-	200					LCG OF BORING No.: SB	03	
	TE	fran	lext							SHEET NUMBER 3 OF 3
	-							DRILLING CONTRACTOR: Bes	st Drilling Services	Location Diagram
-			m Pacif	<u></u>	ina				llow Stem Auger	Location Diagram
ENT:	-		n Wood					DRILLING METHOD: ITO	iow Sterri Auger	
PHOJECT NAM	E:	Works	11 44000	Pe	136	ving				
		441020	160.07			,		in the same of the	E Sampler	p <sup>at</sup>
PROJECT NUM					1			SAMPLING METHOD: CM	C Sampler	
PROJECT LOC	ATION:	Housto	iberty R	oau	-					
		Housto	Π, ΙΑ							
								SURFACE ELEVATION:		
BORING LOCAT	TION:							TOC ELEVATION:		
	00/0	VC 10.7				10.5.107		WATER LEVEL:		
START DATE:	03/0	5/97	FINISH DATE	<u> </u>	03	/05/97		WATER ELEVATION:	· · · · · · · · · · · · · · · · · · ·	
START TIME:		-	FINISH TIME				-	DATE:		
SAMPLER	SAMPLE	OVM	RECOVERY	DEP	TH4	SOIL	C	SOIL DESCRIPTION AND	DORILLING:CONDITIONS:	NOTES:
TYPE	DEPTH	(PPM)	(FT)	IN F	EET	GRAPH	! 1			
CB9		1	4.2	41				silt/sand lenses grade or	ut	
			i							
				42						
		1	!							
				43						
		Ī	ī							
				44						
		1	<del>-</del>	~~						
					-					
	45	1		45						
			i						,	
CB10			5.0	46						
		i								
1				47						·
-		<del>i .</del>	<u> </u>				-			
				48	H					
		<del> </del>	<del>!</del>	70						
				49						
		!	-	49						
	50.0				-	ML		SILT raddish beauty as	a sleetie	
	50.0	-	!	50		MIL		SILT, reddish brown; no		
0044								firm, wet; with trace of s	sand;	
CB11		<u> </u>	5.0	51				creosote odor		
		<u> </u>	!	52				Silty CLAY; reddish brow		
						CL		plasticity, very stiff, cred	osote odor	
			!	53						
								3" thick sandy silt, lens		
		İ		54				contains oil sheen & cre		
			i					3" thick sandy silt, lens		
12		!	1	55				contains oil sheen & cre		Collected soil sample for
		1	i					grading with creosote in	fractures	chemical analysis from
ST12			1.5	56				~ 1% of mass		silt lenses
		1	1							
			i	57						
		1	!		1 1					Bottom of boring @ 57.0'
				58						
		i	$\top$							Borehole backfilled with
				59	-					cement/bentonite
		<u>.</u>	. —	-						grout on 3/5/97
•			:	60	H					31041 011 010101
eologi	et·	R. Lam	<u>.                                    </u>	au	-			L	LEGEND:	Cl - Completion Interval
Checker		n. Lain	J							•
CHECKE	u ⊔y.									OVM - Organic Vapor Meter PP - Pocket Penetrometer
1										
L										TOC - Top Of Casing

		بالمجيم مشتر	4			160		LOG OF BORING No.: S804	
	IE IE	fra	next					l.	SHEET NUMBER 1 OF 3
		J- 18_0.	٠٠٠٠			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Briteling Controller Deat Driming Controller	Location Diagram
LIENT:			em Pacif		-	-		DRILLING METHOD: Hollow Stem Auger	-
ROJECT NAME	E		n Wood	Pe	rse	rving			÷
		Works					-	CME Samples	
ROJECT NUM	BER:	44102						SAMPLING METHOD: CME Sampler	
ROJECT LOCA	ATION:		iberty R	oad					
		Housto	on, IA					SURFACE ELEVATION:	
								TOC ELEVATION:	
ORING LOCAT	TIORE							WATER LEVEL:	1
TART DATE:	03/0	5/97	FINISH DATE		03	/05/97		WATER ELEVATION:	<u>.</u> !
PART TIME:	00.0	0,0,	FINISH TIME				_	DATE:	
SAMPLER	SAMPLE	OVM	RECOVERY	DEF	тн	SOIL	C	SOIL DESCRIPTION: AND DRILLING: CONDITIONS	NOTES:
TYPE	DEPTH	(PPM)	(FT)	IN FE	1	GRAPH	1		
i		,	4		1			Clayey GRAVEL	Boring Advanced with 8 1/4-
CB1	1 - 5		38.0	1					inch O.D., 4 1/4-inch I.D. HSA
	×-								
			i	2					
				3		SM		SAND, black, medium grained, moist, contains creosote	Collect soil sample for
			i			FILL		CINDERS, black, creosote odor	chemical analysis @ 2' - 3'
				4		SM	il	SAND; It. brown, fine grained; moist, creosote odd	
					Ш			Silty CLAY; black, stiff, low plasticity; moist, creos	pte
!	5.0	İ		5		CL		creosote odor, grading black and dark brown,	
			1					mottled	
CB2		<u> </u>	5.0	6					
					Щ				
	<u> </u>			7	$\sqcup$				
					Н	•		·	
		!		8	_				
		İ			Н	•		grading - gray and dark brown, mottled	
		!	<u> </u>	9				with slight creosote odor	
	40.0				$\vdash$			landing light area and area mottled with iron oxide	
	10.0			10				grading light gray and gray, mottled with iron oxide staining, creosote odor, grades out	
000		İ	5.0					grading with 1/10" diameter CaCO3 nodules	
CB3	<u> </u>	!	1 5.0	11				grading with 1710 diameter CaCOS hoddles	
				42					·
	<u> </u>	<del>!</del>	-	12					
	!	İ		13	-		1		
	<u> </u>	:	<u>'</u>	1 13					
		İ		14					
		<u>:</u>	<del>.</del>	1 14					
	15.0			15	-				
	10.0	:	:						
C84			2.5	16					
004	<del>i</del>	1.	1	1.0					
				17	-				
	1	i	<del> </del>	i ''	-				
		ļ	!	18					
	<del> </del>	<del></del>	<del></del>	†		ML	1	Clayey SILT; gray and reddish brown	
			į	19	-			mottled, low plasticity; firm with	
	<u> </u>	:	1	† .3		i		trace sand, moist	
	20		!	20	-	i			
Geologi		R. Lar	nb			A1-1-A		LEGEND:	CI - Completion Interval
Checke								SS - Spiit Spoon	OVM - Organic Vapor Meter
	,•								PP - Pocket Penetrometer
									TOC Ton Of Casing

	1			:				LOG OF BORING No.: SB04			
	TE	Fran	Jeyt	3					CUESTANIANCE & OF A		
	-	rra						DRILLING CONTRACTOR: Best Drilling Services	SHEET NUMBER 2 OF 3		
							-		Location Diagram		
JENT:			m Pacif					DRILLING METHOD: Hollow Stem Auger	4		
PROJECT NAM	Æ:		n Wood	Per	se	rving			-!		
		Works	200 07					CNAT Complex	-		
PROJECT NUM	ABER:	441020						SAMPLING METHOD: CME Sampler	4		
PROJECT LOC	ATION:		iberty R	oad					_		
		Housto	n, IX						1		
								SURFACE ELEVATION:			
BORING LOCA	TION:							TOC ELEVATION:			
								WATER LEVEL:			
START DATE:	03/0	05/97	FINISH DATE	Ē:	03	/05/97		WATER ELEVATION:			
START TIME:			FINISH TIME	:				DATE:	1		
SAMPLER	SAMPLE	OVM	RECOVERY	CEPT	н	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:		
TYPE	DEPTH	(PPM)	(FT)	N FE	ET	GRAPH	1				
	1	1	T	i	T		ī				
C85	ĺ		32	21							
	İ	İ	İ								
				22		SP		Silty SAND; light gray, very fine to fine grained			
		<del> </del>	1		_	٠.	1	wet, with mild creosote odor			
				23	$\dashv$			Wet, With him creases addr			
	1	-	<del> </del>	23	-						
					$\dashv$						
				24							
					-			clay lens ~ 3" thick @ ~ 24.5			
	25			25				creosote in sand lens ~ 2" thick @ ~ 24.8"			
	1 20	<del></del>	i -		_			Greene in carre lens 2 thick & 24.0			
000			1		-				collect sample not submitted		
CB6	<u> </u>	-	4.5	26	_			grading with strong creosote odor	25.5 - 26.0' for bio analysis		
					$\dashv$			oil sheen			
	<u> </u>	<u> </u>	-	27	_				collect soil sample for		
					_				chemical analysis from		
				28					27 - 30 feet		
	İ	İ		. [					-		
		!		29					collect sample for chemical		
									analysis @ 29.0 - 30.0'		
	1			30							
	1		i	Ī				Silty CLAY; reddish brown & gray, mottled,	,		
C87			5.0	31		CL		low plasticity; moist with creosote in	collect sample for chemical		
		I	1					hairline fractures ~ 0.1% at mass	analysis @ 31.0 - 32.0'		
				32	$\neg$						
		I	1								
	1		1	33	-						
	İ	<del>i                                    </del>	1								
	1		1	34	-			creosote grades out			
<u> </u>	<del>i</del>	<del>†</del>	<del>†                                      </del>	-	-			and and and			
	35			35	-			mild creosote odor			
-	, JJ	<u>;</u>	<u> </u>	33	-						
CB8			5.0	20	$\dashv$						
C80	<u>!</u>	1	7 5.0	36	_						
				_	$\dashv$						
	<u> </u>	1	!	37	_						
					$\dashv$			grading with creosote in hairline fractures			
	<u> </u>	!	<del> </del>	38				~1% at mass			
				L	_						
		!		39					collect soil sample for		
1				1					chemical analysis from		
	40.0	!		40				0.1" thick silt/sand lenses contains creosote	39.5 - 40.0'		
Geologi		R. Lam	b		_			LEGEND:	CI - Completion Interval		
Checke	d By:							SS - Split Spoon	OVM - Organic Vapor Meter		
1	-								PP - Pocket Penetrometer		
									TOC - Top Of Casing		

			501					LOG OF BORING No.: SB04	
	TE	TO	lext						SHEET NUMBER 3 OF 3
		A Fair						DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
ENT:		Southe	m Pacif	icl	ine	95		DRILLING METHOD: Hollow Stem Auger	Location Diagram
JECT NAM	<i>1</i> 2.		n Wood	-	-			Tionow oten / tager	-
30001 700		Works	11 11000						†
PROJECT NUM	raco.	441020	169.07				-	SAMPLING METHOD: CME Sampler	1
PROJECT LOC			iberty R	oad	-			THE CALLIDICAL	i
PROJECT COC		Housto		-					1
		1100010						SURFACE ELEVATION:	1
BORING LOCA	TION					-		TOC ELEVATION:	1
							-	WATER LEVEL:	†
START DATE:	03/0	5/97	FINISH DATE	·	03	3/05/97		WATER ELEVATION:	
START TIME:			FINISH TIME					DATE:	†
SAMPLER	SAMPLE	OVM	RECOVERY	OEP	mu .	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH	(PPM)	(FT)	IN FI		GRAPH	1		110728.
TIPE	i derin	(FFm)	(1)	44 11	1	Goon	Ť		
CB9			5.0	41	-	1			
- 000			10.0			CL		Silty CLAY reddish brown; stiff; low plasticity;	
				42	-	-		moist; with creosote odor	
	<u> </u>	-		725	_	İ		molet, with discourte deci	
			h i	43	-				
	1	<u> </u>		-,0	-	i	i	grading very stiff	
						1		grading voly dur	
	1	<u> </u>		44	-				
		}			_		_		
	45.0			45	_	СН		CLAY; reddish brown; medium plasticity; hard;	
								moist; with creosote in fractures ~0.5% of mass	
CB10			5.0	46					
	İ					Ĭ			
				47			1		
1						Ì			
				48					
		1				ĺ		·	-
				49					
							1		
	50.0			50				SILT; reddish brown; low plasticity; firm; moist	collected sample @ 51-52'
	1					ML		with creosote ~5% of mass in fractures	for chemical analysis
CB11			5.0	51				and trace clay	
				52					
								CLAY; reddish brown, medium plasticity; hard;	
				53		CH		moist, with creosote in fractures ~0.1% of mass	
			100						
		1		54					
	55.0	1		55					
,	l								
CB12		1	5.0	56		-			
				57					
		8							
				58					
				59					
						I		Bottom of boring @ 60'	Collect soil samples for
'	60.0	1		60				Boring with cement/bentonite grout	chemical analyisis 58 - 60'
eologi		R. Lam	b					LEGEND:	C1 - Completion Interval
Checke	d By:							SS - Split Spoon	OVM - Organic Vapor Meter
	• • • • •								PP - Pocket Penetrometer

						-	LOG OF BORING No.: SB05	
	Te	FTON	iext					SHEET NUMBER 1 OF 3
		- K					DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
200		Souther	n Pacifi	c Line	25		DRILLING METHOD: Hollow Stem Auger	
INT:		Houston						1
PROJECT NAM		Works			3,111.3			1
PROJECT NUM		441020	69.07				SAMPLING METHOD: CME Sampler	1
PROJECT LOC		4910 Li		ad				1
PRODUCT COC		Houston						1
			.,				SURFACE ELEVATION:	
BORING LOCA	TIONS	SB05 H	WPW				TOC ELEVATION:	
BOIGHG COCK	TION.						WATER LEVEL:	
START DATE:	3/4	/97	FINISH DATE	: 3	/4/97		WATER ELEVATION:	1
START TIME:			FINISH TIME:				DATE:	
SAMPLER	SAMPLE	OVM	RECOVERY	DEPTH	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS:	NOTES:
TYPE	ОЕРТН	(PPM)	(FT)	IN FEET	GRAPH	1		
		(1.1.1)		T	F	T	Gravel; brown and dk. brown; loose; moist;	Boring Advanced with
CB1	1-5		4.0	1	7 1		with some sand and silt (Fill)	8 1/4" O.D., 4 1/4" I.D.
					7 L	1		hollow stem augers
				2	7 L			
					1	Π		
				3	CL		Silty CLAY; dk. brown; very stiff; low plasticity;	
							moist; grading brownish gray with iron oxide	
				4	7		staining; trace CaC03 nodules	
			<del>                                     </del>		_			
	5.0			5	ML	╬	Clayey SILT; brownish gray; firm; low plasticity;	
	3.0		<u>'</u>				moist	
	F 40		50	_	-	#-	Silty CLAY; brownish gray; stiff; low plasticity;	
CB2	5 - 10		5.0	6	CL		moist with trace sand CaC03 nodules at approx.	
-					- 62		6.5'	
			-	7	-	∥.	0.5	
				8	-			
				-			2" layer of CaC03 nodules at approx. 8'	
1				9	-		Grading It. brownish gray	
	-	<u> </u>		3	-		3" layer of CaCO3 nodules at 10'	
1	10.0			10	-	1	D layer or Cacco modules at 10	
	1 10.0		!					
CB3	10 - 15		5.0	11	-	-	2" thick clayey silt lens	
CB3	10-13	1	3.0	• • •	<del>-</del>		Grading soft	
1				12	$\dashv$		Grading stiff	
	<del> </del>	<u>!</u>	<del>                                     </del>	-	7		Grading soft	
				13	-			
<b> </b>	<del> </del>		1	"	<del>-</del> i		Approx. 1" thick clayey silt lens	
				14	-		Grading very stiff	
	<del> </del>	!	<del>                                     </del>		_			
1	15.0	•		15	7		Grading firm	
	1	l	Ī		1			
C84	15 - 20		5.0	16	ML	1	SILT; brownish gray, soft, non-plastic; wet w/	
	† <u></u>	i	1				trace sand and clay	
1				17	$\neg$			
			1	I			Trace clay nodules	
1				18				
	1	i	Ī	Ī				
1		1		19				Collect soil sample for
	1	<u>.</u>	T		SP	T	Silty SAND; loose; It. gray; with fine grained	chemical analysis from
1	20.0			20			wet with creosote odor	19.5-20'
Geolog		R. Lan	dr				LEGEND:	CI - Completion Interval
Checke							SS - Split Spoon	OVM - Organic Vapor Meter
1	•				343			PP - Pocket Penetmmeter

				:				LOG OF BORING No.: SB05				
	To		iove					COG OF BORING NO OBOO				
	T.E		vext						SHEET NUMBER 2 OF 3			
								DRILLING CONTRACTOR: Best Drilling Services	Location Diagram			
VENT:			m Pacif					DRILLING METHOD: Hollow Stem Auger	<u>:</u>			
JIECT NAM	Æ:	Housto	n Wood	Pe	rse	rving						
1		Works							1			
PROJECT NUM	GER:	441020	069.07					SAMPLING METHOD: CME Sampler	<u>!</u>			
PROJECT LOC	ATION:	4910 L	iberty R	oad								
		Housto										
								SURFACE ELEVATION:	1			
		SB05 F	WPW				***	TOC ELEVATION:	•			
BORING LOCA	HORE	00001	1001 00				-	WATER LEVEL:				
	2/4	/97			21/	4/97	-	WATER ELEVATION:	•			
START DATE:	3/4	131	FINISH DATE		3/-	+131		DATE:	:			
START TIME:			FINISH TIME	-			<del>-</del>		NOTES:			
SAMPLER	SAMPLE	OVM	RECOVERY	CEP	тн	SOIL	C	SOIL DESCRIPTION AND ORILLING CONDITIONS	NOTES:			
TYPE	DEPTH	(PPM)	(FT)	IN FE	ET	GRAPH	11					
							1					
CB5			5.0	21								
								Grades very fine to fine grained				
				22	П							
			İ			Ì						
				23	$\vdash$							
			i						Collect soil sample at			
					$\vdash$				4			
				24					24.0-24.5' for chemical			
									analysis			
	5.0			25	П							
	0.0		1									
			5.0		$\square$							
CB6	5 - 10		5.0	26			1					
1					Ш							
				27								
					Ш			-				
				28								
					П				-			
1				29								
			1									
	10.0			30		ML		Clayey SILT; gray and reddish brown; stiff;				
	10.0	i	<del></del>					low plasticity; moist with sandy silt lens approx.				
C87	10 -15		3.5	31	H			0.1" thick				
C87	10-13	<u> </u>	3.3	31				Varved				
					Н			Valved				
<u> </u>	ļ		-	32		-	1	CU T. and dish have said and a second				
					$\square$	ML		SILT; reddish brown with gray mottling; non-				
			1	33			1	plastic; wet with trace sand				
				34		!	1		Collect soil sample for			
									chemical analysis from			
I	15.0			35	П				34.5-35.0'			
	1	l	Ī									
C88	15 - 20		4.0	36	Н	SP	1	Silty SAND; reddish brown; loose; very fine				
- 000	10 20		1	-		•	1	to fine grained; wet				
I				37	H	İ		to mile granies, not				
<b> </b>	1	<u> </u>	+	31								
I					$\vdash$							
ļ		<u> </u>		38		1						
					Ш	l						
				39					Collect soil sample for			
				!		l			chemical analysis from			
l	40.0			40		1			39-40'			
eologi	ist:	R. Larr	dr					LEGEND:	Cl - Completion Interval			
Checke								SS - Split Spoon	OVM - Organic Vapor Meter			

PP - Pocket Penetrometer TOC - Top Of Casing

						-	LOG OF BORING No.: SB05	
	TO		Toyt				LOG OF BORING No.: SB05	
	Ar.	Fran	ACY!				Book Drilling Convince	SHEET NUMBER 3 OF 3
Ι			5				DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
IENT:			m Pacif				DRILLING METHOD: Hollow Stem Auger	+
-ROJECT NAM	E:		n Wood	Pers	erving			+
		Works	CO 07				SAMPLING METHOD: CME Sampler	+
PROJECT NUM		441020					SAMPLING METHOD: CME Sampler	-
PROJECT LOC	ATION:		berty R	oau				<del>-</del> i
		Housto	n, IA				SURFACE ELEVATION:	┪
<u> </u>		SB05 F	1/4/12/4/				TOC ELEVATION:	4
BORING LOCAT	TION:	3000 1	1001-00				WATER LEVEL:	1
	2/4	/97		. 2	/4/97			+
START DATE:	3/4	191	FINISH DATE		14/91		WATER ELEVATION: DATE:	+
START TIME:		i	FINISH TIME		T	10	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
SAMPLER	SAMPLE	OVM	RECOVERY		SOIL	C	SOL DESCRIPTION AND URLEING CONDINONS	NOTES.
TYPE	DEPTH	(PPM)	(FT)	IN FEET	GRAPH	11		
CB9			5.0	41	-			
CBS			3.0	-	-			
				42	-			
		<del>                                     </del>	+	72	CH		CLAY; reddish brown; hard; medium plasticity;	Collect soil sample at
				43	⊣ ՟``		moist	24.0-24.5' for chemical
		1	<del>                                     </del>		_			analysis
				44	-			
	!	1		44	-			
				-	-			
	45.0			45				
CB10			2.0	46			Possible sand lens (no recovery)	
				47				
1.					4			-
				48	_			
				_	4		Children and a second of the	-
		!		49	_		2" thick silt lens at approx. 49.0	
1					4	1		
	50.0	!	!	50	_			
0044			2.5		-	1		
CB11	<u> </u>	<u> </u>	2.5	51	-			
				52	-			
	1	-	-	32	ML		SILT; reddish brown non-plastic, wet; with trace	
1	İ			53	- "		sand	
	i İ	<del>                                     </del>	1	33	_			
				54	-			Collect soil sample for
	i	<del>i</del>	i		7			chemical analysis 54-55'
				55	7		<u> </u>	
		1	1					
CB12			3.2	56	СН		CLAY; reddish brown; medium plasticity; firm:	
	5						moist	
				57				
	1							`
	<u> </u>			58				Bottom of boring at 60'
						-		Boring backfilled with
	1		!	59	ML		Clayey SILT; reddish brown; low plasticity; firm;	cement/grout bentonite
					_		wet	
1	60.0			60		_		L
Geologi		R. Larr	dr				LEGEND:	C1 - Completion Interval
Checke	ed By:						SS - Split Spoon	OVM - Organic Vapor Meter
								PP - Pocket Penetrometer
1								TOC - Top Of Casing

			-					LOG OF BORING No.: SB06	
	TE	rran	iext						SHEET NUMBER 1 OF 3
		· · · · · · · · · · · · · · · · · · ·						DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
ENT:		Southe	m Pacifi	c Li	nes			DRILLING METHOD: Hollow Stem Auger	i
IPROJECT NAM	· ·		n Wood						!
PROJECT NOW	=	Works							1
PROJECT NUM		441020	69.07					SAMPLING METHOD: CME Sampler	·
			iberty Ro	ad					·
PROJECT LOC	ATIONS	Housto	n TX						7
-		1100010	11, 17					SURFACE ELEVATION:	
BORING LOCA	2011	SB06 F	WPW					TOC ELEVATION:	7
BOHUNG LOCA	IION:	0500.	,,,,,					WATER LEVEL:	Ţ <b>!</b>
	3/4	1/97	FINISH DATE		3/4	1/97		WATER ELEVATION:	
START DATE:	01-	701	FINISH TIME:	_				DATE:	1
SAMPLER	SAMPLE	OVM	RECOVERY	OEP	TH	SOIL	C		NOTES:
	DEPTH	(PPM)	(FT)	IN FE	1	GRAPH			
TYPE	) DEPTH	i (PPM)	1 1	44 14	1	FILL	Ť	Gravel	Boring Advanced with
CB1	1-5		3.5	1			ï		8 1/4" O.D., 4 1/4" I.D.
C81	1 1-5	-	0.0	•		SM		SAND - It. brown; loose, moist; mild creosote	hollow stem augers
				2		0		odor	
	-	1	+	4	-				
				3	H				
-	-	<del>'</del>	+	٦	-	100			
				4		FILL		Cinders	Collect samples from 4' to 5'
	-	<del> </del>	+	7		CL	ï	Silty CLAY; black; stiff; low plasticity; moist;	for chemical analysis
				_		-		creosote odor	
	5.0		-	5	-		ı		
					_	1		Grading dark gray	
CB2	5 -10	<u> </u>	5.0	6	_	!	1	Conding It are with iron avida staining: crossate	
ŀ					<u> </u>			Grading It. gray with iron oxide staining; creosote	
		!		7	-	2	-	odor	
4					_	1	1	Grades out	
	ļ	<del> </del>	-	8	-	1			
1					_	-			
	!	-		9	-				
	400			10		1			
	10.0	!	!	10	-	<u> </u>			
000	ŀ		5.0	11	-	1		Silt lens approx. 2" creosote impacted	
CB3	-	<del>-</del>	1 3.0	· ' '	-	1		One lend approx. 2 discoule impacts	
				12	,	1			
	-	<del> </del>	-	12	-	-			
				13		1		Silt lens approx. 3" creosote impacted	1
		<u> </u>	+	1 '3	<u> </u>			One come approved a second company	
1				14	-	1		Silt lens approx. 2" creosote impacted	
	-	-	-	┤ '~	-				
	15.0			15	:	1			
	1 13.0	-	1	1 "	-	1			•
C84			4.5	16	3	i		Sand lens approx. 1" creosote impacted	
C04	-	+	1 7.5	┤ ''	-	i			
1	1			17	,	1			
	+	<del>-</del>		┪ ''	-	1			
		•		18	B	†		Silt lens approx. 2" creosote impacted	
-	<del> </del>	<del></del>		┪ ¨		1		Silt lens approx. 3" creosote impacted	
1	1	I		19	او	i			Collected soil sample from
-	<del> </del>	<del>-</del>	i	┪¨		ML		SILT; gray; firm; non-plastic; moist with trace sand	19.5-20' for chemical
	20.0			20	- اه	1		creosote impacted	lanalysis
Geolog		R. Lar	mb					LEGEND:	CI - Completion Interval
	ed By:	,						SS - Split Spoon	OVM - Organic Vapor Meter
- Jonesa	od Dy.							The state of the s	PP - Pocket Penetrometer
1									TOC - Top Of Casing

				-				LOG OF BORING No.: SB06	
	To		<b>iext</b>					233 31 33	SHEET NUMBER 2 OF 3
	TE		EVI					DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
			- Desifi					DRILLING METHOD: Hollow Stem Auger	
ENT:		Souther	m Pacifi	CLI	nes	oina	_	DRILLING METHOD. FIGURE COMP. 1090	1
. ROJECT NAME			n Wood	Per	Sei	ving			1
		Works 441020	CO 07					SAMPLING METHOD: CME Sampler	,
PROJECT NUME				d				SAMPLING METITOD.	1
PROJECT LOCA	TION:	4910 LI	berty Ro	bad					1
		Housto	n, IX					SURFACE ELEVATION:	l l
		00001	DAIDIAI					TOC ELEVATION:	l
BORING LOCAT	ION:	S806 H	IVVPVV					WATER LEVEL:	
								WATER ELEVATION:	
START DATE:			FINSH DATE	-				DATE:	
START TIME:			FINISH TIME:				10	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
SAMPLER	SAMPLE	OVM	RECOVERY	0EP		SOIL	C	SOL DESCRIPTION ( )	
TYPE	ОЕРТН	(PPM)	(FI)	IN F	ET	GRAPH	11		
			1.0	-	$\vdash$		1	Silty SAND; It. gray; loose; very fine to fine	
C85			4.2	21		SP	1	grained; wet with mild creosote odor	
					$\vdash$			grained, wer with filling creosore odor	
			1	22					
						1			
				23	_	!			
	1000 COS				-				Collect samples from 24' to
				24		1			
						CL	1		25' for chemical analysis
				25			1		
	1	İ	Ī	1		i			
000	F 40		3.1	26		1			
CB6	5 - 10	-	1 3.1	20	-	-			
1 .				27	,	CL	╢	Silty CLAY; light gray; very stiff; low plasticity;	
		<u> </u>		21	-		1	moist with iron oxide staining	·
1				20		1	1	most war non oxide daming	
	!	-		28	-	-			-
		1		1	$\vdash$	-			
		-		29	<b>'</b>  -	4	1		
	l			1	$\vdash$	4			
			!	30	-	-			
				-	.  -	4	1		
C87			2.0	31	-	-			
						-			
		-		32	۷.	<del>-</del>			
						SP	-  -	Silty SAND; It. gray; very fine to fine grained;	Collect soil sample for
	!			33	- ا د	- 37		wet; with creosote odor	geotech analysis
				-	<u>.</u>  -	4		Mer' Mint creasore addi	
		-		] 34	4	-			
	1			-	_ -	-			
	1	!		_ 3	2  -	<del></del>	- -	"	
				1	Ļ			CLAY; reddish brown; hard; medium plasticity;	
CB8	<u> </u>		5.0	- 3	6 <u> </u>	□ сн		moist; with trace hairline fractures; creosote in	
				1.	_ _	- -			1
				3 ا	7	-		fractures	
				1	L	-		1" thick lens CaC03 nodules	
				_  3	8 _	_		I THICK IETS CACOS HOUGES	
					_	_			
				_] 3	9	_		Constants in fractions and as sub	
					L	4		Creosote in fractures grades out	
	40.0			4	10			LEGEND:	CI - Completion Interval
Geolo		R. La	mb					SS - Split Spoon	OVM - Organic Vapor Meter
Check	ed By:							55 - Spilt Spoot	PP - Pocket Penetrometer
1	700								TOC - Top Of Casing

		-	رجعت					LOG OF BORING No.: SB06	
		in a	<b>lext</b>						SHEET NUMBER 3 OF 3
		The same of						DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
'ENT:			m Pacif					DRILLING METHOD: Hollow Stem Auger	
JECT NAM	E:		n Wood	Pe	rse	rving			_
		Works							_
PROJECT NUM	GER:	441020						SAMPLING METHOD: CME Sampler	_
PROJECT LOC	ATION:		iberty R	oad					_
		Housto	n, TX						-
			13.4.45533.4.4					SURFACE ELEVATION:	_
BORING LOCA	TION:	SB06 H	HWPW					TOC ELEVATION:	_
								WATER LEVEL:	-
START DATE:			FINISH DATE					WATER ELEVATION:	-
START TIME:	,	T	FINISH TIME			1	T-	DATE:  SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
SAMPLER	SAMPLE	OVM	RECOVERY	1		SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES.
TYPE	DEPTH	(PPM)	(FT)	IN F	LEI	GRAPH	<del>                                     </del>		
CB9			5.0	41	-	i	1	Grading with creosote in hairline fractures	
CD3	1	<del> </del>	1 3.0	71	-	:		Crading war orcoods in namine nastares	
				42	-	1			1
		1	+	42	-	1			
				43	-	1			
	<u> </u>	<u> </u>	-	43	-		1		
					-	ł			-
	!			44	-	!			
								Approx. 2" thick layer of CaC03 nodules	
	45.0'	1		45		}			
	1	i				i			
CB10			4.7	46	-	1		Creosote in fractures grades out	
CBIU	1	-	1 4.7	40	-	2		Creosote in nactures grades out	
				47	-	1			
	!	-	1	41	-		1	-	
				48	-	1	-		
	1		-	40	-				
				49	-	ML		Clayey SILT; reddish brown; low plasticity;	Collect soil sample from 49
	-	<del> </del>	-	49	-	IVIL		moist	to 50' for chemical analysis
	50.0			50	-	1		Moist	10 50 for chermical arranysis
	1 50.0	-	-	1 30	-	<del> </del>	╢		
				-4	-	1			
	<u> </u>	-	-	51	-	!			
			1		_	-			
	!	-	-	52	_	-			
					_	1			
	!	1		53	<u> </u>				
					_	ļ			
	<u> </u>			54	-	į			
						-			
	!	1	-	55	1	1	-		Collect soil sample for
					_	77			
ST11	!		2.0	56	-	1			geotech analysis
	A			_		-			
	57.0'	!		57	1	!	-		
					-	-			
	1			58	-	!			
	İ				_	-			Power of basics of 571
				59	<u> </u>	į	1		Bottom of boring at 57'
			140		_	4	1		Backfilled with bentonite
I.	60.0			60	)	i			
eolog		R. Lan	nb					LEGEND:	CI - Completion Interval
Checke	ed By:							SS - Split Spoon	OVM - Organic Vapor Meter
									PP - Pocket Penetrometer
1									TOC - Top Of Casing

	!	يد سيعون	-					LOG OF BORING No.: SB07	
	E	Fran	<b>iext</b>						SHEET NUMBER 1 OF 2
	-							DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
" ENT:		Southe	m Pacifi	icli	ine	2		DRILLING METHOD: Hollow Stem Auger	!
			n Wood	-	_			DRILLING METHOD. THORAT STORY STORY AND AND AND AND AND AND AND AND AND AND	<del>†</del>
ECT NAM	£:		11 44000	re	136	ville			<del>'</del>
		Works	CO 07					SAMPLING METHOD: CME Sampler	
PROJECT NUM	BER:	441020						SAMPLING METHOD: CME Sampler	-
PROJECT LOC	ATION:		berty Ro	oad					4
		Housto	n, IX						<u>.</u>
								SURFACE ELEVATION:	4
BORING LOCAT	TON:	SB07 H	WPW					TOC ELEVATION:	
								WATER LEVEL:	<u>.</u>
START DATE:	3/06	3/97	FINISH DATE	Ŀ		3/06/9	7	WATER ELEVATION:	
START TIME:			FINISH TIME:					DATE:	
SAMPLER	SAMPLE	OVM	RECOVERY	OEP	тн	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	CEPTH	(PPVI)	(FT) :	N FE	EET	GRAPH	1		
		i			П		T	Gravel (Fill)	Boring advanced with 8 1/4"
				1					O.D. 4 1/4" I.D. hollow stem
		İ	<del>                                     </del>			-		Railroad Ties (Fill)	augers
			!	2	H				1
CB1		:	2.8'	_			-		<del> </del>
001		1	2.0	-	H			Gravel (Fill)	Collect soil sample for
		!	<del>                                     </del>	3	-	SM	-		
					$\vdash$	SIM		SAND; Black; fine grained; moist with creosote	Chernical alialysis 2.5-3.0
				4				odor; grading brown (Fill)	
			i		П		1		
	5.0			5		CL	T	Silty CLAY; dk. brown/black mottled; stiff; low	
	0.0	<u> </u>	<del></del>					plasticity; moist; creosote odor	
000			0.41	_	$\vdash$		1	plasticity, moist, creosote odor	
CB2		<u> </u>	3.4'	6				Conding block contact	
					Н			Grading black very stiff	
				7					
					Ш				
				8					
•									-
				9				Grading - gray with iron oxide staining	
			] ;						
	10.0			10					
	i	l	1	,		ì			
CB3			4.1'	11			1		
000	!	<del> </del>	1	: ''				Grading It. gray; stiff	
				12				Grading it gray; our	
	:	-	-	14	-				
	!		1 .		-				
	1	!		13	-				
	i				-		1		
	!			14	_	!			
	15.0	1		15		!			
				•					
CB4			3.5	16					
	Ī			į					
				17		1			
	i	<del> </del>	1			i		,	
				18		1			
	<u>:</u>	<del> </del>	1		-	ML	1	Clayey SILT; It. gray; firm; low plasticity; moist;	Collect soil sample 19-20' for
				19	-	.41-		contains oil sheen; creosote odor	chemical analysis
	<del></del>	<u> </u>	-	: 13	-			Contains on Sheeti, Greedete addi	- Indian dilayolo
	000				-	1			
Ļ	20.0	1		20		1		LECEND.	Cl. Completion Internal
eolog		R. Lam	מו					LEGEND:	CI - Completion Interval
Linecke	ed By:							SS - Split Spoon	OVM - Organic Vapor Meter
									PP - Pocket Penetrometer
j									TOC - Top Of Casing

				-				LOG OF BORING No.: SB07	
	57		javt					LOG OF BORING No.	0.55
	Tre	rran	EVI						SHEET NUMBER 2 OF 2
1		0 4	- David				_	DRILLING CONTRACTOR: Best Drilling Services DRILLING METHOD: Hollow Stem Auger	Eocation Diagram
ENT:			m Pacif					DRILLING METHOD: Hollow Stem Auger	-
PROJECT NAM	<b>E</b> :	Works	n Wood	Pe	156	iving			<del>-</del>
		441020	60 07					SAMPLING METHOD: CME Sampler	<del>-</del>
PROJECT MUM		4910 L	harty D	cad				SAMPLING METHOD. CITIE CENTIFICE	
PROJECT LOC	ATION:	Housto		Cau					<b>-</b>
		Housio	11, 17					SURFACE ELEVATION:	<del>-</del>
		SB07 F	WEN					TOC ELEVATION:	i i
BORING LOCA	TION:	3007 1	1441 44	-				WATER LEVEL:	_
START DATE:	3/0	6/97	FINISH DATE	<b>.</b>		3/06/9	7	WATER ELEVATION:	<del>-</del>
START TIME:	3,0	9/9/	FINISH TIME			0,00,0	-	DATE:	7
SAMPLER	SAMPLE	OVM	RECOVERY		734	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH	(PPM)	(FT)	N FE		GRAPH	1		
IIPE	i ogran	1 (FF-34)	1		1		i		Collect soil sample at 21-22'
CB5			4.2	21			1		for chemical analysis
- 000	İ	i		•					
				22		SP		Silty SAND; brownish gray; fine grained; wet	Collect soil sample at 22-23'
	i I		i	•				Contains creosote	for chemical analysis
				23					
	İ	İ	İ	:					
1				24					
	<u> </u>	+	<del> </del>	- 47			1		Collect soil sample at 24-25'
					-		1		
	25.0		1	25				2" laver cemented sand - contains creosote	for chemical analysis
									Bottom of boring @ 25.0'
	<u> </u>			26					1 - 1 - 1 - 21 - 1 - 21
l,							1		boring backfilled with
				27			1		cement/bentonite grout
1					<u> </u>				
				_ 28					
					_				
	<u>!</u>	<del> </del>	<del> </del>	29			1		
1					-				
	<u> </u>	-	-	-	-				
1				1	-				
	!	1		-	-				
1					-				
<u></u>	!	<u> </u>	-	-	-				
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-	!	<del> </del>	+	-		;			
1				:					
	<del> </del>	-	<del></del>	-			1		
1	İ	İ			-		1		
-	<del> </del>	<del></del>	<del> </del>	-		İ			
						1			
	1	<del></del>	+	-	-	i			
1					-				
	1	+	+	-	-				
	İ				-				
	<u> </u>	<del>'</del>	+	-	-	i			
1					-	2			
Seolog	ist <sup>*</sup>	R. Lan	nb.		-			LEGEND:	Cl - Completion Interval
Checke		1 10 106111						SS - Split Spoon	OVM - Organic Vapor Meter
- Cone	- J,							and the server.	PP - Pocket Penetrometer

		مية المالكين.	-				-	LOG OF BORING No.: SB08	,
	Te	Fran	lext						SHEET NUMBER 1 OF 2
	4	- Fig.	10411					DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
ENT:		Southe	m Pacif	icli	ne	<u> </u>		DRILLING METHOD: Hollow Stem Auger	l Locator Diagram
PROJECT NAM			n Wood					DRIEDING METHOD. FIGHEW OLEH Auger	
PROJECT NAME		Works	., ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1 0.	-	· viiig			
PROJECT NUM		441020	69.07					SAMPLING METHOD: CME Sampler	<del>- </del>
PROJECT LOC			berty R	oad		-		The second secon	-
PROSECT COC	Allon.	Housto	n. TX						
								SURFACE ELEVATION:	
BORING LOCA	TION	SB08 F	WPW		*********			TOC ELEVATION:	
							-	WATER LEVEL:	7
START DATE:	3/6/	/97	FINISH DATE	 Ŀ	3/6	3/97		WATER ELEVATION:	7
START TIME:			FINISH TIME	-				DATE:	<del>- </del>
SAMPLER	SAMPLE	QVM	RECOVERY	257	ПН	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH	(PPM)	(FT)	IN FE	- 1	GRAPH	1		
· · · ·	32	(7.7.4)				FILL	1	Gravel; Railroad ties	Boring advanced with 8 1/4"
1				1					O.D. 4 1/4" I.D. hollow stem
									augers
1				2					1 3 1
			i			SM		SAND; black; fine grained; moist, creosote odor	
CB1	2-5		2.5	3				S. II. I. S. C. S.	
			1	·					
l				4		CL		Silty SANDY CLAY; black; firm; low plasticity;	
			1	7		-			Callest seil comple et 4 5'
1					$\vdash$			moist; strong creosote odor	Collect soil sample at 4-5'
	5.0			5					for chemical analysis
1									
C82	5 - 10		5.0	6		CL		Silty CLAY; black; very stiff;	
								low plasticity; moist; strong creosote odor	
1				7					
				8					
								·	•
				9				Grading gray with iron oxide staining	
	10.0			10					
			1						
C83	10 - 15		4.5	11				Grading with creosote in hairline fractures	
				12				Grading with pea to gravel size CaC03 nodules	· · · · · · · · · · · · · · · · · · ·
				13					
								grading with varved bedding	
				14					Collect soil sample 14-15' for
									chemical analysis
	15.0		1	15					
C84	15 - 20		4.2	16					
								Clayey SILT; brownish gray; firm; low plasticity;	
				17		ML		moist; creosote odor	
						9			Collect soil sample 18-19' for
				18					chemical analysis
							1		
1				19					
	20.0			20					
Seologi		R. Lam	ib					LEGEND:	CI - Completion Interval
hecke								SS - Split Spoon	OVM - Organic Vapor Meter
	•								PP - Pocket Penetrometer

			÷.					LOG OF BORING No.:	SB08		
		Fra	vext				;	220 01 201/11/01/01			
1	T.		10.01						D	·····	SHEET NUMBER 2 OF 2
	<u> </u>						_	DRILLING CONTRACTOR:	Best Drilling Serv	rices	Location Diagram
LENT:			m Pacif					DRILLING METHOD:	Hollow Stem Aug	er	<u></u> i
PROJECT NAM	e		n Wood	Per	servin	<u>g</u>	!				_!
		Works									
PROJECT NUM	BER:	441020					- 1	SAMPLING METHOD:	CME Sampler		<u>_1</u>
PROJECT LOC.	ATION	4910 L	iberty R	oad							
		Housto	n, TX				!				
							:!:	SURFACE ELEVATION:			
BORING LOCAT	TON:	SB08 F	HWPW					TOC ELEVATION:			
							_	WATER LEVEL:			
START DATE:	3/6	/97	FINISH DATE	£ (	3/6/97			WATER ELEVATION:			1
START TIME:			FINISH TIME	Ŀ				DATE:			7
SAMPLER	SAMPLE	OVM	RECOVERY	OEPTI-	SOI	.	C	SOIL DESCRIPT	ION AND DRILLING COND	ITIONS	NOTES:
TYPE	DEPTH	(PPM)	(FT)	IN FEE	T GRA	PH :	1				:
		1		I		1	,;				
CB5			4.1'	21	$\neg$	1	ſ				1
			1				1				1
				22			1				1
					ISI	5	1	Silty SAND; It. gray;	very fine to fine of	rained: wet:	
				23	┪ ゙.		,	with creosote odor	and oil sheen		
			i		_	i	1				
				24	-		1				
			<del> </del>	24	-		+				-
				25	$\dashv$	i	1				
		 	!	251	<del>-</del>		-				1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
				26	-	1	1				Bottom of boring at 25.0'
			1	26	_		1				Boring backfilled with
L					-		1				cement/bentonite grout
			!	27	_	1	1				
				L	_	1	1				
				281	_		1				
				L	_	1	1				<u>-</u>
				291	_		1				
				L	_	1	1				
				301	_		1				·
				L	_	i	L				
				31		1	L				
						1					
				32!_			L				
			i	Γ			ı				
				33:			ŀ				
							Ī				
				341						***************************************	
							1				
				351			1				
							1	***************************************			
				36	7		t				
			1		_		1				
				37	-		ŀ				
			<del>i                                    </del>	-	<del>-</del> i		1				
				38	$\dashv$		1				
			<del>;                                    </del>	30	-		1				
				201	-		-				
			<del>                                     </del>	391	-		-				
					-		}				
	-4-	5	.	401		_!					L
eologis		R. Lam	D						LEGEN		CI - Completion Interval
hecked	a By:								SS - Split S	Spoon	OVM - Organic Vapor Meter
l											PP - Pocket Penetrometer
											TOC - Top Of Casing

		a since	70			1	LOG OF BORING No .:	MW-12A		
	E	10	<b>Yext</b>	!		į				SHEET NUMBER 1 OF 2
		TAC.					DRILLING CONTRACTOR:			Location Diagram
ENT:			ern Pacif				DRILLING METHOD:	Hollow Ste	m Auger	
PROJECT NA			on Wood	Prese	rving					:
		Works	200 07							<u>.</u>
PROJECT NUI			069.07				SAMPLING METHOD:	Split Spoor	<u> </u>	; 
PROJECT LOC			iberty R	bad						
		Housic	on, TX							<del>!</del>
		West S	Sido				SURFACE ELEVATION:			
BORING LOCA	ATION:	west 3	olue				TOC ELEVATION:	5.52'		<u></u> !
	02/2	7/07		. 02	/27/97		WATER LEVEL: WATER ELEVATION:	J.J2		
START DATE:	07:		FINISH CATE		:40	-	DATE:	03/25/97		
SAMPLER	SAMPLE :	OVM	RECOVERY!		SOIL	C		TION AND DRILLIN	IG CONDITIONS	NOTES:
TYPE	DEPTH	(PPM)	(FT)	IN FEET	GRAPH	1			15 CONDITIONS	NOTES:
1775	i derin	(PPM)	: (P1)	: ;	Grouph		FILL, moist, 10YR	3/1		Sample Retained For
SS	0-5	-	3.75	1	į		very dark gray, gra			Chemical Analysis
	1 1				FILL		brick, slight odor	2, 0, , , , , , , ,		Chemical Analysis
				2		li				
	T		1		į				A The second second second second second second second second second second second second second second second	
	!			3	i		Slightly moist			
***************************************	1 :		1 1	! 1	j		CLAY, silty, slightly	y moist.		PP = 2.0
				4	į		10YR4/1, dark gra		s nodules	
	1		+-+			1	To Treat your	y, calcarcou	3 HOGGICS	
				_				···		
	1 1			5		1				
							Moist, 10YR5/1, gr	ray,silt seams	S	
SS	5 - 10		5.0	6	i			***************************************		
	!									
				7						
	-				0.		Silt content decrea			
	-			8	CL	1	calcareous nodule		- la !! !	
					!		Light gray with 10			
	!		<del>-</del>	9		1	10YR4/1 dark gray	/ mottling, sill	seams	
			i i	10						
	1 :		<del>-</del>	10		1	silt seams			
SS	10 - 15		5.0	11	İ	lŀ	JIII JEAINS			
	1 10 - 13		3.0	-						
	!			12						
	<del> </del>		<del></del>							
	:			13		1 1			***************************************	
	i .		; ;		•	li				
			;	14						
	<u> </u>		: 1		:		SILT, clayey, slight	ly moist.		
			:	15			10YR5/1, gray, odd		IS	
	!		<del></del>		ML					
SS	15 - 20:		3.75	16						
	!		: 1						***************************************	
	!		1.	17		it	SAND, wet, 10YR7	7/1, light gray		
	1					lī	with greenish tint,	fine grained.		
	<u> </u>		<u> </u>	18			odor, staining with	10YR2/1, bla	ack,	
	:		:				and 10YR3/3 dark	brown		
				19	SP	[				
	:				:	1 :				
1				20						
Geologi		B. Gold	dsby						EGEND:	CI - Completion Interval
Checke	ed By:							SS	- Split Spoon	OVM - Organic Vapor Meter
										PP - Pocket Penetrometer
										TOC - Top Of Casing

								LOG OF BORING No.: MW-12A	
		TO	<i>sext</i>	•					SHEET NUMBER 2 OF 2
		Par Fal.	1					DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
ENT:			ern Pacif					DRILLING METHOD: Hollow Stem Auger	
ECT NA	4E:		on Wood	Pre	eser	ving		:	
	·	Works							
PROJECT NUM		441020						SAMPUNG METHOD: Split Spoon	1
PROJECT LOC	ATION:	Housto	iberty R	oad				il	1
		Housic	)n, 1A					SURFACE ELEVATION:	-
BORING LOCA	TON	West S	Side					TOC ELEVATION:	-
BONING COC	iiion,	770010	,,,,,,				-	WATER LEVEL: 5.52'	-
START DATE:	02/2	7/97	FINISH DATE		02/	27/97	_	WATER ELEVATION:	<u>.</u>
START TIME:		:45	FINISH TIME	:	09:			DATE: 03/25/97	1
SAMPLER	SAMPLE	OVM	RECOVERY	OEP	тн	SOIL	·C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	OEPTH	(PPM)	(FT)	IN FE	EET !	GRAPH	<u>' 1</u>		
	į						:	SAND, wet, 10YR7/1, light gray,	Sample Retained For
SS	20 - 25	<u> </u>	5.0	21		•		with greenish tint, fine grained, odor,	Chemical Analysis
					Ш			staining with 10YR2/1 black and 10YR3/3	
	!	!	-	22		60		dark brown	
		į		23	$\vdash$	SP			
	<u>.</u>	<u> </u>	-	23					
				24	$\vdash$				
	!	<u>!</u>		24					
					$\vdash$		1		
	!	<u> </u>		25					
		!						CLAY, slightly silty, very slightly moist, 10YR7/1,	PP = 4.0
SS	25 - 30		5.0	26				light gray, >25% mottling with 10YR6/8,	
					$\sqcup$			brownish yellow, green and black staining,	Sample Retained For
	i :	!	-	27				odor	Chemical Analysis
				28		CL	-		
	<u> </u>			20					
				29	H				
	l	i.	i i						
	i 			30				Silt content = 50%, strong odor	
	!			31				Boring TD @ 30.0'	
					L				
	<u> </u>	!	-!!	32				, and the second	
	!			20					
		<u> </u>	+	33	-				
	:			34			1		
	i	<u> </u>	+	<b>J</b>					
	!	! :		35					
	i	İ	1	-					
				36					
	İ								
		<u> </u>		37			]		
			<u> </u>	38			1		
					Щ				
	!	!		39					
1				40					
eologi	st.	B. Gold	ishy	40				LEGEND:	Cl - Completion Interval
Checke		J. 3010	astry y					SS - Split Spoon	OVM - Organic Vapor Meter
	,.								PP - Pocket Penetrometer

		State						LOG OF ECRING No.: MW-12B	
		10	<b>XEXC</b>	<b>9</b>				i !	SHEET NUMBER 1 OF 1
			D hand					DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
JENT:			ern Pacif					DRILLING METHOD: Hollow Stern Auger	
JJECT NA	ME:		on Wood	Pre	esen	ving			_
		Works							-
PROJECT NU	MBER:	441020						SAMPLING METHOD: Split Spoon	
PROJECT LO	CATION:		iberty R	oad					
		Housto	on, IX						<del>-</del>
		West S	Sida				_	SURFACE ELEVATION:	-
BORING LOCA	ATIONS	West C	olue				-	TOC ELEVATION: water level: 5.60'	<del>-</del>
START DATE:	02/	27/97	FINISH DATI	E.	02/2	27/97	_	WATER LEVEL: 5.00	<del>_</del>
START TIME:		):15	FINISH TIME		13:		-	DATE: 03/25/97	
SAMPLER	SAMPLE	OVM	RECOVERY		-		_	SOIL DESCRIPTION AND DRILLING:CONDITIONS	NOTES:
TYPE	DEPTH	(PPM)	1	IN FE	i	1	1		NOTES.
	!	I	1		i i		i	CLAY, slightly silty, very slightly moist,	0 - 25' not logged
SS	25 - 30	<b>—</b>	5.0	26				10YR7/1, light gray, >25% mottling with 10YR6/8	because of close
	1	Ī						brownish yellow, green and black staining,	proximity to MW-12A
				27				creosote @ 30', strong odor	
		1	1			:	1		
	<u> </u>	<u> </u>	İ	28		CL			
	İ								
	1			29					
	1								
	İ		-	30		-			
<b></b>	<del> </del>	<del> </del>	<del>'</del>	30	-			CAND	
CT.	20 25		25	-				SAND, saturated, 7.5YR4/6,	Sample Retained For
ST	30 - 35	<del> </del>	2.5	31				strong brown with 7.5YR6/1	Chemical and
I.,	İ			32	-	:		gray, fine grained, silt nodules,	Geotechnical Analysis
-	<del> </del>	1	-	32		1		sheen, strong odor	
ľ	İ			33	$\vdash$	1	i		
	!	<del> </del>	-	33					
	į			34					
	<del>i</del>	<u> </u>	<del>-</del>			il			
	1			35		i			
	İ	i –	i			SP			
SS	35 - 40	-	5.0	36	-				
	<del></del>	1	ī	-		1	i		
				37					
	İ	!	1			1	į		
	<u> </u>		!	38		1			
				į	-				
	i			39		1	i		
						1			
	<u> </u>	<u> </u>	<u> </u>	40	i				
				į		1		CLAY, very slightly moist, 10R4/6,	Sample Retained For
SS	40 - 45	-	5.0	41		-	-	red, hard, firm, fat, scattered	Chemical and
				. !			į	small calcareous nodules	Geotechnical Analysis
	<u> </u>		!	42!					
				[	_	~ .			PP = 4.5
	<u>:</u>	1	<del>                                     </del>	43!	_	CH			
				_	_		1		
	<u> </u>		!	44			į		
			!		!		1	Perion TD O45 0	
Soolse:	ot:	D C-1-	!	45			!	Boring TD @45.0'	
eologi checke		B. Gold	ispy					LEGEND:	CI - Completion Interval
CHECKE	d by.							SS - Split Spoon	OVM - Organic Vapor Meter
									PP - Pocket Penetrometer

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	!	-	9-1:					LOG OF BORING No.: MW-12C	
l	Te	rran	jext					9	SHEET NUMBER 1 OF 1
L	17		12.16					DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
-			rn Pacif		nos			DRILLING CONTRACTOR: Dest Drilling Services  PRILLING METHOD: Hollow Stem Auger	Location Diagram
ENT:			n Wood					through 10" PVC casing	
PROJECT NAM	<b>E</b> :	Works	11 44000	176	361	VIIIG		anough to 1 vo casing	
PROJECT NUL		441020	169.07		<del>-</del>		-	SAMPLING METHOD: CME 5-foot Sampler	<del></del> i
PROJECT LOC			iberty R	oad		-		SAMPLING METHOD. GIVIL G-100t Garripidi	
PROJECT COC	ATIONS	Housto		oaa					
<b> </b>		110000	11, 17			<del></del>		SURFACE ELEVATION:	
BORING LOCA	TON	MW-12	2C					TOC ELEVATION:	<del></del>
BOIGHO COO					<del></del>			WATER LEVEL:	
START DATE:	4/2	1/97	FINISH DATE	E:		4/21/9	_	WATER ELEVATION:	
START TIME:			FINISH TIME				-	DATE:	
SAMPLER	SAMPLE	OVM	RECOVERY	DEP	TH !	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	ОЕРТН	(PPM)	(FT)	IN FI	EET	GRAPH	1		
	1				li				Boring Advanced with 8 1/4-
CB1			4.2	61		ML		Clayey SILT; reddish brown; firm;	inch O.D., 4 1/4-inch I.D. HSA
				İ				low plasticity; moist	
				62					
									·
		1		63					
				64					
								grading with trace sand	
	65.0		<u> </u>	65					
							_		
CB2			1.5	66		SP	1	Silty SAND; reddish brown; very fine grained;	
					$\square$			wet with nodules of cemented sand.	Sand heaves ~ 1.0 foot
_		<u> </u>	-	67					into auger
				68	$\vdash$				
	-	!	-	00					
1				69	H				
-	<del> </del>	<del> </del>	+	1 00					
	70.0			70	H				
	1 70.0	<u> </u>	i	1					
CB3			2.7	71	H				
	İ	İ							
				72					
			1						
		1		73			1		
	1		I			СН	1	CLAY; reddish brown; hard;	
				74				medium plasticity	
	75.0		1	75			-		
					Ш				Bottom of boring @ 75.0
		<u> </u>		76					Install MW-12C
		İ							
	!	<u> </u>	-	77		v			
		<u> </u>		78					
1				-	$\vdash$				
	!			79					
					$\vdash$				
300/00	l iota	<u> </u>	1	80			1	LEGEND:	Cl - Completion Interval
hecke		R. Larr	ID					SS - Split Spoon	OVM - Organic Vapor Meter
THECKE	a by.							3g - opin opodii	PP - Pocket Penetrometer

								LOG OF BORING No.: MW-12C	
	TIE	200	iove					LOC OF DOTHING THE TELES	
l	IE		iext						SHEET NUMBER 2 OF 2
		37 Ban .				ii ii		DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
IT:		Southe	rn Pacif	ic L	ines	3		DRILLING METHOD: Hollow Stem Auger	•
PROJECT NAM	ıs.	Housto	n Wood	Pe	rse	rvina	-	through 10" PVC casing	:
		Works					-		1
		441020	160 07	-		-		SAMPLING METHOD: CME 5-foot Sampler	
PROJECT NUM			_		-			SAMPLING METHOD. CIVIL 3-1001 CEITIPIEI	
PROJECT LOC	ATION:		iberty R	oad					
		Housto	n, TX						
								SURFACE ELEVATION:	
BORING LOCA	TION:	MW-12	2C					TOC ELEVATION:	
							-	WATER LEVEL:	ı
			FINISH DATE	·				WATER ELEVATION:	2
START DATE:				-				DATE:	· ·
START TIME:		1	FINISH TIME	-			1-		NOTES:
SAMPLER	SAMPLE	OVM	RECOVERY	DEP	TH	SOL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES.
TYPE	DEPTH	(PPM)	(FT)	IN F	EET	GRAPH	11		iii:
		1	İ		Ш				Boring Advanced with 8 1/4-
CB1			4.2	61	$\sqcap$	ML		Clayey SILT; reddish brown; firm;	inch O.D., 4 1/4-inch I.D. HSA
		Ì	i	ĺ				low plasticity; moist	
1				62	H				
	1	!	-	02					
					$\vdash$		1		
		<u> </u>		63					
				64					
	l	I	1	İ				grading with trace sand	
	65.0			65	$\Box$				
	, 00.0								
000			4 =		1	SP	-	Cib. CAND: raddish brown: year fine aminade	
CB2		!	1.5	66	-	36		Silty SAND; reddish brown; very fine grained;	
		İ					1	wet with nodules of cemented sand.	Sand heaves ~ 1.0 foot
		<u> </u>		67	<u> </u>				into auger
į.	ŀ	1	-					•	
•		٠.		68	П		1		
	İ	!	1						
		i		69			1		
	-	<del> </del>	-	03					
l	70.0				$\vdash$				
	70.0	!	1	70		,			
	1	!	İ						
C83			2.7	71					
		i		1	П				
1			ļ	72					
	i	<u> </u>	i	1 -					
1				73	$\vdash$				
	-	·	-	1 13		СН	-	CLAV: raddish brown: bard:	
1	İ			_	Н	CH		CLAY; reddish brown; hard;	
		!		74				medium plasticity	
								2	
	75.0	:	1	75					
		!		Ī	T		1		Bottom of boring @ 75.0
1		ļ		76		İ			Install MW-12C
	1	<del>i</del>	+	1		i			
1		1		-	,				
	ļ	<del>!</del>		77					
1		į		1					
				78		l			
	1	Ī	1	1		Ī			
1	į	İ		79		i			
-	<del> </del>	i	<del>-i</del>	1 '		!	1		
1		i			-	-			
_	!			80	!!			LEGEND:	Ci. Completion Interest
eolog		R. Lan	no on						CI - Completion Interval
hecke	ed By:							SS - Split Spoon	OVM - Organic Vapor Meter
1									PP - Pocket Penetrometer

		A Alex						LOG OF BORING No.: MW-13	•		
		-110	кех	3	!			4	SHEET NUMBER 1 OF 2		
		4323			<u>.</u>			DRILLING CONTRACTOR: Best Drilling Services	Location Diagram		
CLIENT:			em Paci					DRILLING METHOD: Hollow Stem Auger			
ROJECT NA	ME:		on Wood	d Pi	rese	erving					
		Works									
ROJECT NU			069.07	1				SAMPLING METHOD: Split Spoon	-		
ROJECTLO	CATION:		Liberty Fon, TX	toa	<u>u</u>						
		Housid	)n, 1A						:		
ORING LOC		NIM C	omer of	Cit		-		SURFACE ELEVATION:			
MING LOC	AHONE	1444 CC	Jillei OI	Site	=	-		TOC ELEVATION:	:		
ART DATE	02/2	25/97	FINISH DAT		00	2/25/97		WATER LEVEL: 9.43' WATER ELEVATION:	The state of the s		
ART TIME:		:00	FINISH TIME			2:00		DATE: 03/25/97			
SAMPLER	SAMPLE	OVM	RECOVERY	-	PTH	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	10770		
TYPE	OEPTH	(peu)	(FT)		FEET	GRAPH	,	SOLUTIONS OF THE SOLUTIONS	NOTES:		
		;	. (+1)	i	ree!	GROPH		0 - 4" Fill, asphalt gravel			
SS	0-5	_	5.0	1	-	:		SILT, very slightly moist, odor,	Sample Submitted For		
-	!	i	1			•		10YR3/1 very dark gray	Chemical Analysis		
	!			2	:	ML		l lotter very dark gray			
	:	i -	İ	i							
	;			3		i			· · · · · · · · · · · · · · · · · · ·		
	:	I	i	•							
	İ	į	!	4							
	:	i	-	7	-			OLAY - TE BUILDING			
	•	i I			-			CLAY, silty, very slightly moist,	PP = 2.5		
	!	!		5				10YR3/1 very dark gray, firm odor			
							!				
SS	5 - 10		5.0	6							
	!			7	1						
	:	-									
		<u> </u>		8	_	CL		10YR6/1 Gray with dark green staining;			
			1					1/4" - 1/2" calcium nodules	-		
			-	9							
					-	i					
				10	_	!					
SS	10 15		-		_	!					
33	10 - 15		5.0	11							
			! !	40	-						
			-	12	-						
				13	-						
			-	13	-	i					
				14	-	i	1				
		***************************************		14	_		1				
;				15	-		1				
		***************************************	+-+	13	_		1	SAND, wet, loose, fine-grained,	Samula C. b '''		
ss	15 - 20	-	5.0	16			1	10YR7/1 - light gray	Sample Submitted For		
	10 20		0.0		-		ŀ	1011(77) - light gray	Chemical Analysis		
	İ			17	<u> </u>		⊪				
	1			.,	-		ŀ				
	i			18		SP	ŀ				
	:		<del>                                     </del>	10	-	٠.	1				
	i			19			1				
			<del>:  </del>	. 3	-		-  -				
	:			20			-				
eologis	st	B. Gold:		20				LEGEND:			
necked			,					SS - Split Spoon	C: - Completion Interval		
	- , .							33 - 3piil 3poon	CVM - Organic Vapor Meter		
									PP - Pocket Penetrometer		
				-					TOC - Top Of Casing		

					LOG OF BORING No.: MW-13			
1	Terro	JAYF			-		<del>.</del>	OLIGINA MILLIANDO
					į		at Daillian Consisses	SHEET NUMBER 2 OF 2
			<del></del>		-		st Drilling Services	Location Diagram
NT:		em Pacifi					llow Stem Auger	<u>'</u>
CTNA		on Wood	Prese	rving	ii			
	Works			····				
PROJECT NUM		069.07				SAMPLING METHOD: Sp	lit Spoon	<u>i</u>
PROJECT LOC		iberty Ro	oad	yes	4.			<u>.</u>
		on, TX			- 1			
						SURFACE ELEVATION:		
BORING LOCA	TION: NW CO	omer of S	Site			TOC ELEVATION:		<u>-</u>
	<u></u>				-	WATER LEVEL: 9.4	3'	7
START DATE:	02/25/97	FINISH DATE	. 02	/25/97	-	WATER ELEVATION:		ī
START TIME:	10:00	FINISH TIME:		:00			25/97	<del>†</del>
SAMPLER	SAMPLE OVM	RECOVERY				SOIL DESCRIPTION AN		NOTES:
		1						1 10125.
TYPE	OEPTH (PPVI)	(FT)	IN FEET	GRAPH		SAND wet loose fine	-grained, 10YR7/1 gray	
SS	20 - 25 —	5.0	21	SP		OCIAD, Mer. 10026, IIII6	-grained, TOTICITI gray	
33	20-20	3.0	41	35		CLAV aliabely int 4	0VD7/4	55 - 4.0
				1		CLAY, slightly moist, 1	UTK// I	PP = 4.0
			22			Light gray, mottling with	מיסאלטו וו	Sample Submitted For
						brownish yellow, firm		Chemical Analysis
			23	۵ ا				
				СН				
			24					
		1		#	Ì			
			-	1		DDV		
			25			DRY		
				1				
			26			Boring TD = 25.0 Feet		
				. 1				
)		.	27					
		T	$\Box$		i	•	•	-
			28					
								-
			29	- 1				
	i			1				
		l i	30	- 1				
		1		1	li			
			31	#				
<b> </b>		+	31	4				
			32	1				
<b> </b>			٥٧	1				
1								
<b> </b>	: 1		33					
				i				
		-	34	;			·	
				.1				
		1	35	- 1				
				1				
			36	1				
				1				
			37	, i				
				:				
l			38					
				1				
	•		39	1				
<b> </b>	<u></u>	<del></del>	-				7	
1			40		1			
2010-	ott C = 1	dobie	40				LEGEND:	Cl. Completies lates of
eologi		asny						CI - Completion Interval
Checke	a by:						SS - Split Spoon	OVM - Organic Vapor Meter
								PP - Pocket Penetrometer
1								TOC - Top Of Casing

		A.						LOG OF BORING No.: MW-14	
		1101	Next					.1 1 !	SHEET NUMBER 1 OF 3
	8. 3		No.					DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
NT:		Southe	ern Pacifi	c Li	nes	3		DRILLING METHOD: Hollow Stem Auger	
- WECT NA	ME:		n Wood	-	_	- Contract of the Contract of			-
		Works		-					-
PROJECT NUI	MBER:	441020						SAMPLING METHOD: Split Spoon	-
PROJECT LOC	DECTLOCATION: 4910 Liberty Road								
	Houston, TX								<del>-</del>
	<del></del>				-			SURFACE ELEVATION:	<del>-</del> :
BORING LOCA	ATION:			-			1	TOC ELEVATION:	1
			-					WATER LEVEL: 7.71'	<del>-</del> !
START DATE:	02/2	7/97	FINISH DATE	:	02	/27/97		WATER ELEVATION:	-
START TIME:		:45	FINISH TIME:		_	:30	-	DATE: 03/25/97	<del>-</del> .
SAMPLER	SAMPLE	CVM	RECOVERY	CEP		SOIL	C		NOTES:
TYPE	DEPTH	(Pour)	(FT)	N FE	ET	GRAPH	1		1
	i	1	1		1 1	:		FILL, moist, 10YR4/6 dark yellowish brown	
SS	0-5		3.75	1		FILL		grades to 10YR3/1 very dark gray, wood pieces	
	1	i	1 3	•	-			1.5 - 1.75' SAND, slightly moist, 10YR6/4	
				2	-	SP		light yellowish brown, fine-grained	
	<u> </u>	<u> </u>	+	4	$\vdash$			1.75 - 5 CLAY, silty, very slightly moist,	PP = 2.75
		1		3	$\vdash$			10YR2/2 very dark brown grades to	1 2./3
	1	<u>:</u>	-	3	-	CL		10YR4/1 dark gray, odor	
	İ					UL		TOTINAN I Galk gray, OGOF	
	<u> </u>	!		4					
		1							
		İ		5	П	i			
	!	1	<del> </del>	•				CLAV	
		<u> </u>		_	$\vdash$			CLAY	Sample Collected In A
ST	5-7		2.0	6		1			Shelby Tube For
				_					Geotechnical Analysis
	<u> </u>	<u> </u>	<u> </u>	7		i			
					Щ			CLAY, silty, moist, 10YR6/2 light yellowish gray,	PP = 2.5 °
SS	7 - 10		3.0	8				mottling with 10YR6/8 brownsih yellow and	
		1				i		10YR4/1 dark gray, calcareous nodules.	
	<u> </u>		<u> </u>	9				Fe nodules, greenish tint, interbedded	
	i	į	i			1		silt lenses	4
	i	!		10		!			
		İ			П	i			
SS	10 - 15		5.0	11					
	:	i	1 .			CL			
	!	1		12					
	:	!	i	-					
			İ	13	$\vdash$				
	:		<del></del>		_	1			
	:			14	H		!		
		1	<del></del> -	14	_	i			
	1			15	$\vdash$	1		ODOR	
	<del> </del>	!	!	13				SAND	Sample Callected In A
CT	45 4-		20		$\vdash$			JANU	Sample Collected In A
ST	15 - 17	i	2.0	16	-				Shelby Tube For
			:	300	4				Geotechnical Analysis
	1	!	!	17					
	i							SAND, wet, 10YR6/1, gray, odor, sheen,	Sampe Retained For
SS	17 - 20		3.0	18				greenish tint	Chemical Analysis
	!			19		SP			
	i	I				:		2" Clay seam with creosote staining	
	i		İ	20	-		-	and globules	
eologi	ist	B. Gold	dsby					LEGEND:	CI - Completion Interval
Checke								SS - Split Spoon	OVM - Organic Vapor Meter
J	,.							apin apadii	PP - Pocket Penetrometer
									TOC - Top Of Casing

	Terrolloye						LOG CF BORING No.: MW-14		
	and the second		10					SHEET NUMBER 2 OF 3	
'ENT:		South	em Paci	fic L in	00		DRILLING CONTRACTOR: Best Drilling Services	Location Diagram	
ECT NA	ME.		on Wood				DRILLING METHOD: Hollow Stem Auger	_	
		Works		11100	Ct vii ig			<u> </u>	
OJECT NL	MBER:		069.07		***************************************		SAMPLING METHOD: Split Spoon	-	
OJECT LOCATION: 4910 Liberty Road							Spin Gpoon	<del>-</del>	
	-		on, TX			-		<del>-</del> !	
							SURFACE ELEVATION:		
RING LOC	ATION:						TOC ELEVATION:	<del>-</del> !	
							WATER LEVEL: 7.71'	<del>-</del>	
RT DATE	02/2	27/97	FINISH CAT	E: 0	2/27/9	7	WATER ELEVATION:	<del>-</del>	
ART TIME:	13	:45	FINISH TIME	: 1	5:30		DATE: 03/25/97	<del>-</del>	
AMPLER	SAMPLE	OVM	RECOVERY	OEPTH	SOIL	; c		NOTES:	
TYPE	OEPTH	[ (PP4)	· (FT)	IN FEET	GRAPH	, : ,		NOTES.	
	:		.	: !	i	1	SAND, wet, 10YR6/1, gray, slight odor,		
SS	20 - 25	<u> </u>	5.0	21!	]	į	no staining		
-	<u> </u>	<u> </u>		22:					
					1				
	:		<u> </u>	231_	SP				
					1				
	İ	!		24	_	-			
	ŀ				7	1			
				25	i				
	i	<u>;</u> :	1	23	1	-	CI AV III II II I		
SS	25 - 30	İ	50		-		CLAY, silty, slightly moist	PP = 4.0	
33	23 - 30	:	5.0	26	-		10YR7/2, light gray, with 10YR6/8		
		<u> </u>		27	CL		brownish yellow mottling, firm, hard		
-		<u> </u>	1	21	-				
				28	1				
			<del>†                                    </del>	20!	<del></del>	-	CLAY		
		,		291	1			Sample Retained For	
			1		1			Geotechnical Analysis	
				301	†				
			1 1		1		CLAY, slightly moist, 10R4/8, red with	PP = 2.0	
SS	30 - 35		5.0	31	1		10YR7/1; light gray mottling, calcareous seams.	PP = 2.0	
			T :		1		1/2 - 3/4" thick, moist @ 31', 32', 33', and 34'.		
			]	32:	i		Very silty 31 - 35'		
			1	!					
				33!	CL				
	!			!					
	i		1	34	1	1 1			
!	i		1 :		!				
				35	i	1 1			
!	i						SAND, slightly silty, wet, 2.5 YR5/8, red,	Sample Retained For	
SS	35 - 40		2.5	36:	!	1 [	fine grained, clay nodules, 2" clay @ bottom.	Chemical Analysis	
į	. !				Ī		then 2" hard cemented sandstone or claystone.		
	!			37'	1		2.5YR5/8, red, with 10YR7/2, light gray mottling		
i	İ				!				
- :	!			381	SP				
i	i				2.5				
:		-	1	39					
:			1			] [			
				40					
plogis		B. Gold	sby				LEGEND:	Cl - Completion Interval	
ecked	By:							OVM - Organic Vapor Meter	
								PP - Pocket Penetrometer	
								TOC - Top Of Coping	

				LOG OF BORING No.:	MW-14	
	Torres	TOVE		l cod or bolking hou	10144-1-4	
	(lerral					SHEET NUMBER 3 OF 3
1					Best Drilling Services	Location Diagram
ENT:		rn Pacific		DRILLING METHOD:	Hollow Stem Auger	
PROJECT NAM	e: Housto	n Wood F	reserving	1		
	Works			1		
PROJECT NUM	48ER: 441020	069.07		SAMPLING METHOD:	Split Spoon	
PROJECT LOC		iberty Roa	ad	:		
PROJECTEDA	Housto					<del></del>
	1100310	11, 17	<u></u>	SURFACE ELEVATION:	<del>- i</del>	<del>-i</del>
					**************************************	
BORING LOCA	ATION:			TOC ELEVATION:	7 741	
			20/07/07	WATER LEVEL:	7.71'	
START DATE:	02/27/97	FINISH DATE:	02/27/97	WATER ELEVATION:		
START TIME:	13:45	FINISH TIME:	15:30	DATE:	03/25/97	
SAMPLER	SAMPLE OVM	RECOVERY	CEPTH : SOIL :	C SOIL DESCRIPTI	ON AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH (PPM)	! (FT) :	FEET GRAPH			
	i İ		1 : 4	CLAY, dry, 2.5YR5/		
ST	40 - 43 —	3.0	41	mottling with 10YR7	7/2. light grav.	
		Ī	CH		ning (probably manganese	
		:	42	oxide) scattered three	oughout.	
	<u> </u>			ondo) doditored and		
				<b></b>		
	<u> </u>	<del></del> '	43	OLAY		Consolo Collegio di La A
				CLAY		Sample Collected In A
ST	43 - 45 -	2.0	44	1		Shelby Tube For
	<u> </u>					Geotechnical Analysis
						- Geoteorinoai Analysis
	!. !	<u> </u>	45			
				}		
	!		46	Boring TD @ 45.0'		
<del></del>	: 1	1				
			47			
1		<del> </del>	-			
			481			
		<u> </u>	491			
	<u>:                                      </u>		50			
		1		1		
l	i .		51			
	:					
1	i	į	52!			
	<del></del>	1		-		
		İ	531			
	<u> </u>		53			
	: <u>I</u>	!	54:	<u> </u>		
	<u> </u>					
	!		55			
	; ;					
	!		56			
<u> </u>	1					
	<u>.</u>		57			
<u></u>	1	<del>-</del>	·			
1		1	-			
		:	58			
1						
	i	1	59			
. [	1	i	50:			
Seolog	ist: B. Gol				LEGEND:	Cl - Completion Interval
Checke		,			SS - Split Spoon	OVM - Organic Vapor Meter
1	; .				<b></b>	PP - Pocket Penetrometer
1						TOC - Top Of Casing
						, 00 - 100 01 0431119

						LOG OF BORING No.: MW-15	
	CETTO	Next				•	SHEET NUMBER 1 OF 2
		and the				DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
LIENT:	Southe	em Pacifi	c Lines	<u> </u>		DRILLING METHOD: Hollow Stem Auger	
ROJECT NAM		on Wood				· · · · · · · · · · · · · · · · · · ·	•
ACCECT FOR	Works		. 1000	viiig			
PROJECT NUM		069.07				SAMPLING METHOD: Split Spoon	i
PROJECT LOC		iberty Ro	nad			Shirt Charles	<u> </u>
PROJECT LOC		on, TX	<u> </u>				
-	1100310	JII, 17				SURFACE ELEVATION:	• !
	Fast or	f Entranc	e Gate	<u> </u>		TOC ELEVATION:	1
BORING LOCA		Side of C				WATER LEVEL: 8.22'	! 
	02/25/97			/25/97			• •
START DATE:	13:30	FINISH DATE		:00		WATER ELEVATION: 03/25/97	: •
START TIME:		FINISH TIME:					NOTES:
SAMPLER	SAMPLE OVM	RECOVERY		SOIL		* · · · · · · · · · · · · · · · · · · ·	NOTES.
TYPE	DEPTH (PPM)	(FT)	N FEET	GRAPH	11		
000	0.5	100			-	Fill, moist, sandy, 10YR5/3 brown	DD = 4.0
SS	0-5 —	3.5	1			CLAY, silty, slightly moist,	PP = 1.0
			_ ا			10YR3/1 very dark gray	Sample Submitted For
	! !		2	~			Chemical Analysis
	!			CL	1		
	<u> </u>		3:				
	:				1		
		!	4				
	<u> </u>					CLAY, very slightly moist, 10YR3/1	PP = 1.0
			5				
	<u> </u>	+	5			Very dark gray	
							PP = 1.5
SS	5 - 10 -	5.0	6:				
1	!						
		<u> </u>	7	CH			
1							•
			8:			10YR6/1 Gray with 10YR6/8 brownish yellow	
						mottling + 10YR4/1 dark gray Fe nodules;	
ļ	!		9			8.5 - 9.0 calcareous nodule seam	PP = 3.0
	! .						
	:		10				
SS	10 - 15 -	3.5	11				
	:		12				
		1					
	i		13			Very silty	
	!	1 :					
			14	CL			
			15				
	<del></del>	1				SAND, saturated, 10YR7/1 light gray	
ss	15 - 20 —	5.0	16			Critis, saturated, 10 11 (171 light gray	
-00	10-20	1 3.0					
		! !	17				
	<del></del>		" -	SP			
			40	35			
	<u> </u>		18	!			
			40				
	!	! :	19	•			
	1	1					
	!	1	20				
Geolog		idsby				LEGEND:	CI - Completion Interval
Checke	ed By:					SS - Split Spoon	OVM - Organic Vapor Meter
1							PP - Pocket Penetrometer
1							TOC - Top Of Casing

		All and a second					LOG OF BORING No.: MW-15	
	TE	fra	lext				LOG OF BORING NO IVIVV-13	CHEET MINDER 2 OF 2
	2						DRILLING CONTRACTOR: Best Drilling Services	SHEET NUMBER 2 OF 2  Location Diagram
JENT:		Southe	ern Pacii	ic Line	S		DRILLING METHOD: Hollow Stem Auger	: Cocation Diagram
PROJECT NA			n Wood					•
		Works						
PROJECT NU		441020	069.07				SAMPLING METHOD: Split Spoon	-
PROJECT LOC	CATION:	4910 L	iberty R	oad				ì
		Housto						i
			93				SURFACE ELEVATION:	
BORING LOCA	ATTON:	East of	f Entrand	ce Gat	е		TOC ELEVATION:	
		North	Side of	Office			WATER LEVEL: 8.22'	
START DATE:	02/2	5/97	FINISH DATE	E: 02	2/25/97	•	WATER ELEVATION:	
START TIME:	13:	30	FINISH TIME	: 15	5:00		DATE: 03/25/97	
SAMPLER	SAMPLE	OVM	RECOVERY	DEPTH	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH	(PPM)	(FT)	IN FEET	GRAPH			
	! !				;		SAND, saturated, 10YR7/1, light gray	Sample Submitted For
SS	20 - 25		5.0	21	ī			Chemical Analysis
	li		1		i			
1				22	SP			
	ī		1					
				23	•			
			1		•			
				24	1			
	1 1		-	<sup>24</sup>	<u> </u>		OLAY	
					<u>:</u>		CLAY, very slightly moist, 10YR 7/1	PP = 3.0
			1	25			Light gray with 10YR6/8	
					i		Browish yellow mottling, firm	Sample Submitted For
SS	25 - 27	-	2.0	26	CH			Chemical Analysis
-	1 1		İ				•	
				27				
	i i		i		i	1		
				28		1	Boring TD @ 27'	
	1		T	ageophore.	•			
				29	i			
	1 1	***************************************	1	-				
	i i			30	:			
	i i	*****	$\dagger$					
			i	31	×			
	<del>                                     </del>		<del>-</del>	-	•			
				32				
			<del></del>	-	•			**************************************
				33		1		
	1 !		-	-	•			
	į			34				
	<del> </del>		<del>†</del>		· •			
1				35	!			
<b></b>	+ +		<del>                                     </del>	30	•			_
				26 -	i •	1 !		
	<del>!                                    </del>		<del></del>	36	•			
	!					1		
	:			37				
	<u> </u>			38	; •			
			!		•			
	! !			39	:	1		
•					:			
1	!		<u>i  </u>	40				
Geologi		B. Gold	sby				LEGEND:	Cl - Completion Interval
Checke	ed By:						SS - Split Spoon	OVM - Organic Vapor Meter

TOC - Top Of Casing

		£2			-			LOG OF BORING No.: MW-15C	
L	TE	rra	<b>lext</b>						SHEET NUMBER 1 OF 2
	-	- F						DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
CLIENT:		Southe	m Pacif	ic L	ines	3		DRILLING METHOD: Hollow Stem Auger	
PROJECT NAM	Æ	Housto	n Wood	Pe	rse	rving			
		Works							
PROJECT NUM	GER:	441020						SAMPLING METHOD: CME 5-foot Sampler	
PROJECT LOC	ATION:		iberty R	oad					
		Housto	n, TX						
								SURFACE ELEVATION:	4
BORING LOCA	TION:							TOC ELEVATION:	<b>-</b>
								WATER LEVEL:	-
START DATE:			FINISH CATE					WATER ELEVATION: DATE:	-
START TIME:	SAMPLE	OVM	RECOVERY		nu l	SOIL	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	CEPTH	(PPM)	(FT)	IN FI	1	GRAPH	1		NOTES.
	00 111	1	1			0.00.11	İ		Boring advanced with 14-inch
				50	П				rotary bit using water as drilling
				51					fluid
				52					
						CH		CLAY, reddish brown; hard; medium	
	<u> </u>			53				plasticity	
				54					
	<u> </u>			55					
					Н				
ļ	<u> </u>	<u> </u>	+	56	$\vdash$				
				57	Н				
	1	<del> </del>	-	31					
				58	Н	ML		SILT, reddish brown; firm; non-plastic;	Boring advanced with 8 1/4-
	i	1	1					wet with trace clay and sand	inch O.D., 4 1/4-inch I.D. HSA
				59	$\Box$				
		Ī							
CB1	<u> </u>		4.2	60					
	İ								
	<u> </u>			61					
					Ш				
	<u>i</u>			62					
	[				Н			28 Abiela leves et CaCC2	
	<u> </u>	<u> </u>	+	63	$\vdash$			2" thick layer at CaCO3 cemented sand @ 63.5'	
	•			64	H	180		Contented Sand (# 05.5	
	<u> </u>	<u> </u>	1	U44	$\vdash$			grades with some sand	
	65.0			65	H			g. case man come cana	
	1	Ī	I		$\vdash$				
C82	!			66		SP		Silty SAND; reddish brown, very fine grained;	
	!							wet	
121	<u> </u>			67					
	!								
	!	1		68				grading very fine to fine grained	
	!				Ш				
<b></b>	ļ		!	69	$\square$				
	70.0				Ш			28 45 24 12 22 22 22 22 22 22 22 22 22 22 22 22	
. )	70.0	0	1	70	!!!			~2" thick layer CaCO3 cemented sand @ 70.0' LEGEND:	
eologi		R. Lam	ID.					SS - Split Spoon	CI - Completion Interval
Checke	u by.							33 - Spill Spoon	OVM - Organic Vapor Meter PP - Pocket Penetrometer
									TOC - Top Of Casing

							LOG OF BORING No.: MW-15C		
	1	11.	TOY				LOG OF BORING No.: MW-15C		
Ļ	. 16	rra	ACYL				Back Baillian Co.		SHEET NUMBER 2 OF 2
1- }							DRILLING CONTRACTOR: Best Drilling Se	rvices	Location Diagram
LUENT:			m Pacif				DRILLING METHOD: Hollow Stem Au	iger	-
PROJECT NAM	<b>4</b> :		n Wood	Perse	erving				<u>i</u>
		Works					01/5//		1
PROJECT NUM	BER:	441020					SAMPLING METHOD: CME 5-foot San	npier	-
PROJECTLOC	ATION:		iberty R	oad					
		Housto	n, TX						4
							SURFACE ELEVATION:		_
BORENG LOCA	TION:						TOC ELEVATION:		1
							WATER LEVEL:		1
START DATE:	4/2	5/97	FINISH DATE	E:	04/25	/97	WATER ELEVATION:	****	
START TIME:			FINISH TIME	<u> </u>			DATE:		
SAMPLER	SAMPLE	OVM	RECOVERY	DEPTH	SOIL.	C	SOIL DESCRIPTION AND DRILLING CON	DITIONS	NOTES:
TYPE	ОЕРТН	(PPM)	(FT)	IN FEET	GRAPH	11			
					]	1			For geolog, to 50 feet, see
CB3			4.2	701					log of boring MW-15
				71	1				
					I				
				72	1				
				731	]				
			1		]	-  -			
				74	CL		Silty CLAY; reddish brown; hard		·
					Ī	1	low plasticity; moist		
	75.0			75	7				
I.,						1			Bottom of boring @ 75.0°
				76	]				Install MW-15C on 4/28/97
1		Ι.			]		•		•
				77	]	1			
							•		-
			-	78					
	1			i					
	1			79	]				
		Ī		i i					
				80	7				
	1	ĺ	1		1	1			
				81	7				
	İ	İ	Ī		7				
				82	7	Ì			
		İ	T		1				
1		1		83	7	-			
1		T	1		7				
				84	7				
		İ			7				
1				85	1				
	1			i	7				
1				86	7				
		1			7				
				87	7		·		
			1						
1				88	7 ~				
	<del>i</del>	<del>i</del>	1						
l .				89	7			<del></del>	
Seolog	ist <sup>.</sup>	R. Lan	nb				LEGE	ND:	CI - Completion Interval
Checke		1 14 14411					SS - Spli		OVM - Organic Vapor Meter
- Conce	J.						33 4	-	PP - Pocket Penetrometer

TCC - Top Of Casing

		4	CE DE LA CONTRACTION DE LA CON				LOG OF BORING No.: MW-16		
		rra	<b>lext</b>						SHEET NUMBER 1 OF 2
L		on the					DRILLING CONTRACTOR: Best Drilling	Services	Location Diagram
IENT:		Southe	rn Pacif	ic Line	s		DRILLING METHOD: Hollow Stem		
PROJECT NAM	<b>Æ</b> :		n Wood	Prese	rving				•
		Works							
PROJECT NUM	MER:	441020					SAMPLING METHOD: Split Spoon		
PROJECT LOC	ATION:		iberty Ro	oad					·
		Housto	n, TX						
							SURFACE ELEVATION:		
BORING LOCA	TION:	Adjace	nt to Ma	in Line	<u> </u>		TOC ELEVATION:		<u>!</u>
							WATER LEVEL: 7.41'		<u>i</u>
START DATE:	02/2		FINISH DATE		126/97		WATER ELEVATION:		
START TIME:	13:	:50	FINISH TIME:	15	:30		DATE: 03/25/97		
SAMPLER	SAMPLE	OVM	RECOVERY	DEPTH	SOIL	C	SOIL DESCRIPTION AND DRILLING CO	ONDITIONS	NOTES:
TYPE	DEPTH	(PPM)	(FT)	IN FEET	GRAPH	!!			
					1		SILT, moist, 10YR3/3, dark brown	n, gravei	Sample Retained For
SS	0-5		1.5	1		-			Chemical Analysis
				_					
			<u> </u>	2	i				
					!			·····	
	!			3					
					ML				
				4	!				
	1				i				
				5	i				
	1	<u> </u>	!	3 -		1			
						-			
SS	5 - 10		5.0	6			CLAY, silty, moist, 10YR3/3, dark	brown,	
				<u> </u>	1		calcareous nodules throughout		
	!			7	-				
	•			<u> </u>	<u>!</u>				-
				8					<u>.</u>
1					!	1			
			i	9 :					
	!				!	1			
	!			10	1			****	
					CL	1			
SS	10 - 15		5.0	11					
			i !		!	1			
	!		<u> </u>	12	i	1			
	1		: 1		i	] :			
	i		i	13					
					- 1				
	•			14		1			
					į				
			<u> </u>	15	i				
							SILT, sandy, wet, 10YR7/1		
SS	15 - 20		5.0	16	1		light gray, green tint,odor		
	i								
				17	ML				
	!		i i						
1				18					
							SAND, silty, wet, 10YR7/1 light gr	ay,	
	1			19	i		green tint, odor		
	i		;	1	SM				
1	:			20					
Geologi	st:	B. Gold	isbv			_==	LEG	END:	Cl - Completion Interval
Checke								alit Spaan	OVM - Organic Vapor Meter
	,.						33 84		PP - Pocket Penetrometer
									TOC - Top Of Casing

				LOG OF BORING No.: MW-16	
	Ten	anext			SHEET NUMBER 2 OF 2
	200			DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
IENT:	50	uthern Pacifi	c l ines	DRILLING METHOD: Hollow Stem Auger	: Cocation Diagram
. AOJECT NAM		uston Wood		BRILLING METHOD. THORAT CLEIN Auger	<u>.</u>
- ACCECT FORM		orks			···········
PROJECT NUM		102069.07		SAMPLING METHOD: Split Spoon	:
PROJECT LOC		10 Liberty Ro	oad		
		uston, TX			
				SURFACE ELEVATION:	
BORING LOCA	TION: Ad	jacent to Ma	in Line	TOC ELEVATION:	
				WATER LEVEL: 7.41'	<u> </u>
START DATE:	02/26/9			WATER ELEVATION:	
START TIME:	13:50	FINISH TIME:	15:30	DATE: 03/25/97	<u>:</u>
SAMPLER	SAMPLE	OVM RECOVERY	CEPTH : SOIL (	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	OEPTH (	PPM) (FT)	IN FEET GRAPH		
				SAND, silty, wet, 10YR7/1, light gray, odor	Sample Retained For
	<u> </u>		21		Chemical Analysis
			22 SM		
			22		
<u></u>	<u> </u>		23		
			24		
			25	CLAY, silty, slightly moist,	
	İ			10YR4/8 red with 10YR7/1 light	Sample Retained For
	į		26	gray mottling, firm, odor	Chemical Analysis
	1			·	
	<u>                                     </u>		27 !-		٠.
1			CL		· · · · · · · · · · · · · · · · · · ·
	<u>i                                      </u>		28		
	<u> </u>		29		
	! !		30		
			24	Roring TD = 20 0'	
	!		31	Boring TD = 30.0'	
			32		
	<del></del>		JZ		
			33		
	<u> </u>				
		1	34		<u> </u>
	i i				
			35		
	i				
			36		
	<u> </u>	!	37		
	i I				
	<u>i  </u>		38		
	!!!	! ;	39		
I					
	! !		40		
Geologi		Goldsby		LEGEND:	CI - Completion Interval
Checke	a By:			SS - Split Spoon	OVM - Organic Vapor Meter
					PP - Pocket Penetrometer
L					TOC - Top Of Casing

						-	``````	•
	17		Paul				LOG OF BORING No.: MW-17	
1	T.	110						SHEET NUMBER 1 OF 2
·							DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
ENT:			ern Paci				DRILLING METHOD: Hollow Stem Auger	_
PROJECT NA	ME:		on Wood	Prese	erving			-
		Works			***************************************			_
PROJECT NUM			069.07				SAMPLING METHOD: Split Spoon	_
PROJECT LOC	CATION:		iberty R	load				_
		Housto	on, TX					<u>-</u>
							SURFACE ELEVATION:	
BORING LOCA	ATION:	East c	of Entrar	ice Ga	ite		TOC ELEVATION:	
	00.10						WATER LEVEL: 9.97'	_*
START DATE:		25/97	FINISH DATI		2/25/97		WATER ELEVATION:	_
START TIME:		:30	FINISH TIME	17	7:45		DATE: 03/25/97	
SAMPLER	SAMPLE	CVM	RECOVERY	DEPTH	SOR.	C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH	(bod)	(FT)	IN FEET	GRAPH	1		
				!_		11	Fill, moist, gravel,	
SS	0-5		1.5	1	1		CLAY, silty, slightly moist,	
	İ				1		10YR3/1 very dark gray	
	:		(	2!	1			
					CL			
				3	1			
	;				Ī		,	
	1			4	Ī			
	;		T		1		CI AV: year aliabity maint	
	:			5	СН		CLAY; very slightly moist	
	:		-	3	· CH			
				!			CLAY; silty; 10YR6/1; gray, very slightly moist;	PP = 3.0
SS	5 - 10		5.0	6:	•		mottling with 10YR6/8 brownish yellow and	
					ļ		10YR3/1 very dark gray; scattered Fe nodules,	
	!			7			scattered calcareous nodules (1/4" - 3/4")	
				_				
	!			8				
					CL			
	:		<u> </u>	9!	1			
				10:				
:	:						Silt content increases	PP = 3.0
SS	10 - 15		3.5	11!	]			
	-							
				12				
:				!				
	·		<u> </u> i	13				
	.							
•	·			14.			SAND, moist, very silty, 10YR6/1 gray,	
			1				greenish tint, odor	
į.			1	15				
i			T					
SS	15 - 20		5.0	16	SM		Saturated, slightly silty	
		-						
:				17				
				1				
				18:				
***************************************		***************************************	<del>                                     </del>			1		
				19		1		
	<u> </u>	·		13				
Ÿ.				20				
Cooles	1	D C-1-	labu	20	:			
Geologis Checked		B. Gold	Suy					Cl - Completion Interval
CHECKE	ь оу.							OVM - Organic Vapor Meter
								PP - Pocket Penetrometer
		***************************************	_					TOC - Top Of Casing

DRILLING CONTRACTOR: Bast Drilling Services  ORGENIA MEMORY 1997  Works  Works  Works  Works  Works  Works  Works  Works  Works  Works  Works  East of Entrance Gate  Works  Works  Works  East of Entrance Gate  Works  Wo								-	LOG OF BORING No.: MW-17	
DRILLING CONTRACTOR: Bast Drilling Services DRILLING METHOD: Hollow Stam Auger Works			TO	Next						SHEET NUMBER 2 OF 2
Descriptions   Description	•	€ €	on the						DRILLING CONTRACTOR: Best Drilling Services	
ModeST Name   ModeST Name	LENT:		Southe	ern Pacif	ic Lin	ies				
Supplementable   Supp	PROJECT NA	ME:			Pres	ervin	g			
Mouston   Mous										<u> </u>
House for   Carry	PROJECT NU	MBER:							SAMPLING METHOD: Split Spoon	
SUMPRISED   STANTON:   SUMPRISED   SUMPR	PROJECT LO	CATION:			oad					<u>_</u> :
SEAST OF ENTRANCE   15:00   Predeficies   17:00   ELEVATION:   MATER LEVATION:   MATER LEVATION:   MATER LEVATION:   03/25/97   MA			Housto	on, TX						:
STATE AND   STAT			F4-	6 F-4		-4-				<u></u>
### STATE OF CALCET   15:30   PRINTING   17:45   CATE   O3/25/97	BORING LOCA	ATION:	East	or entran	ce G	ate				
State   15:30   Passes   17:45   DATE   03/25/97		02/2	5/07			12/25	07			_
SAME   SAME					_	****	31			
SS 20 - 25 1,5 2,5 21							, ;	C		NOTES:
SS 20 - 25 1.5 2.5 21		1		1		i				NOTES.
SS   20 - 25   1.5   2.5   21   22   23   24   25   25   25   26   27   28   29   29   29   29   29   29   29		1	(,,,,,,	1	1	3.0		Ė	SAND, saturated, 10YR6/1 gray, odor	
SS 25 - 30 — 2.5 28 SP 10YR7/3 very pale brown Sample Submitted For Chemical Analysis  CLAY, moist, 10YR4/8 red with Sample Submitted For SyR7/1 light gray mottling, Highly fractured, odor, contaminant staining  Geologist 8. Goldsby  Boring TD @ 35 Feet  CI - Completion Interval OWM - Organic Vapor Meter  Circ Campletion Interval OWM - Organic Vapor Meter	SS	20 - 25	1.5	2.5	21	7			brown staining	
23		İ	!	İ	Ī					
24					22					
24				i						
SS   25 - 30   —   2.5   26     10YR7/3 very pale brown   Sample Submitted For Chemical Analysis   Chemical Analysis   Chemical Analysis   SS   30 - 35   —   5.0   31     SYR7/1 light gray mottling,   Chemical Analysis   Chemical Analysis   Highly fractured, odor,   Contaminant staining   Chemical Analysis   Boring TD @ 35 Feet   Significant of the staining   Boring TD @ 35 Feet   Significant of the staining   Chemical Analysis   Chemical A			1		23					
SS   25 - 30   —   2.5   26     10YR7/3 very pale brown   Sample Submitted For Chemical Analysis   Chemical Analysis   Chemical Analysis   SS   30 - 35   —   5.0   31     SYR7/1 light gray mottling,   Chemical Analysis   Chemical Analysis   Highly fractured, odor,   Contaminant staining   Chemical Analysis   Boring TD @ 35 Feet   Significant of the staining   Boring TD @ 35 Feet   Significant of the staining   Chemical Analysis   Chemical A										
SS   25 - 30					24					
SS   25 - 30			i			T .				
SS   25 - 30					25	7				
SS   25 - 30		Ī	<u></u>	<del>-</del>		S	<b>5</b>		10YR7/3 very pale brown	Sample Submitted For
SS 30 - 35 — 5.0 31 CLAY, moist, 10YR4/8 red with Sample Submitted For 5YR7/1 light gray mottling, Chemical Analysis Highly fractured, odor, contaminant staining  33 CH  Boring TD @ 35 Feet  Bering TD @ 35 Feet  CI- Completion Interval OVM - Organic Vapor Meter	SS	25 - 30		2.5	26	7				
SS 30 - 35 — 5.0 31 CH Syr7/1 light gray mottling, Chemical Analysis Highly fractured, odor, contaminant staining  33 CH Soring TD @ 35 Feet  Boring TD @ 35 Feet  Geologist B. Goldsby Checked By:  CLAY, moist, 10YR4/8 red with Sample Submitted For 5YR7/1 light gray mottling, Chemical Analysis Chemical Analysis Highly fractured, odor, contaminant staining  CLAY, moist, 10YR4/8 red with Sample Submitted For 5YR7/1 light gray mottling, Chemical Analysis Chemica	1			1		-				
SS 30 - 35 — 5.0 31 CLAY, moist, 10YR4/8 red with Sample Submitted For 5YR7/1 light gray mottling, Chemical Analysis Highly fractured, odor, contaminant staining  33 CH  Boring TD @ 35 Feet  Boring TD @ 35 Feet  CI - Completion Interval OVM - Organic Vapor Meter					27					-
SS 30 - 35 — 5.0 31 CLAY, moist, 10YR4/8 red with Sample Submitted For 5YR7/1 light gray mottling, Chemical Analysis Highly fractured, odor, contaminant staining  33 CH  Boring TD @ 35 Feet  Boring TD @ 35 Feet  CI - Completion Interval OVM - Organic Vapor Meter		i	i		•					
SS 30 - 35 — 5.0 31   CLAY, moist, 10YR4/8 red with Sample Submitted For 5YR7/1 light gray mottling, Chemical Analysis Highly fractured, odor, contaminant staining   Contaminant staining   Chemical Analysis					28	_				
SS 30 - 35 — 5.0 31   CLAY, moist, 10YR4/8 red with Sample Submitted For 5YR7/1 light gray mottling, Chemical Analysis Highly fractured, odor, contaminant staining   Contaminant staining   Chemical Analysis				i i						
SS 30 - 35 — 5.0 31			i		29					
SS 30 - 35 — 5.0 31						4				
SS   30 - 35		!	!		30	-			CLAV 40VD 4/0 - 1 - '''	
Highly fractured, odor, contaminant staining  33 CH Boring TD @ 35 Feet  37 38 39 40  Geologist: B. Goldsby Checked By:  LEGEND: C1 - Completion Interval OVM - Organic Vapor Meter		20 25		50	_	-		į	CLAY, moist, 10YR4/8 red with	Sample Submitted For
Geologist: B. Goldsby Checked By:    Contaminant staining	33	30 - 35		1 5.0	31 _	<del>-</del>			STR// light gray mottling,	Chemical Analysis
Geologist: B. Goldsby Checked By:  CH  33  CH  34  Boring TD @ 35 Feet  LEGEND: C1 - Completion Interval OVM - Organic Vapor Meter					32	-			contaminant staining	
34 35 36 Boring TD @ 35 Feet 37 37 39 39 40 40 LEGEND: CI - Completion Interval OVM - Organic Vapor Meter OVM - Organic Vapor Meter		:		-			1		Containmant Statiling	
34 35 36 Boring TD @ 35 Feet 37 37 39 39 40 40 LEGEND: CI - Completion Interval OVM - Organic Vapor Meter OVM - Organic Vapor Meter		:			33	C	4			
Boring TD @ 35 Feet  37  38  39  40  Geologist: B. Goldsby Checked By:  Checked By:		<u> </u>		<del>                                     </del>	-	_	•			
Boring TD @ 35 Feet  37  38  39  40  Geologist: B. Goldsby Checked By:  Checked By:					34	-	į	:		
Boring TD @ 35 Feet  37  38  39  40  Geologist: B. Goldsby Checked By:  Checked By:  Checked By:  Boring TD @ 35 Feet  Cl - Completion Interval  OVM - Organic Vapor Meter		;	:	T		-	1	. !		
37 38 39 40  Geologist: B. Goldsby Checked By:  LEGEND: CI - Completion Interval SS - Split Spaan OVM - Organic Vapor Meter		İ			35:	7				
37 38 39 40  Geologist: B. Goldsby Checked By:  LEGEND: CI - Completion Interval SS - Split Spaan OVM - Organic Vapor Meter		1		T		i				
37 38 39 39 Geologist: B. Goldsby Checked By:  LEGEND: CI - Completion Interval SS - Split Spaan OVM - Organic Vapor Meter					36	-			Boring TD @ 35 Feet	
Geologist: B. Goldsby Checked By:  LEGEND: CI - Completion Interval SS - Split Spaan OVM - Organic Vapor Meter		:		9		-	į			
Geologist: B. Goldsby Checked By:  LEGEND: CI - Completion Interval SS - Split Spaan OVM - Organic Vapor Meter					37					
Geologist: B. Goldsby Checked By:  LEGEND: CI - Completion Interval SS - Split Spaan OVM - Organic Vapor Meter							:			
Geologist: B. Goldsby  LEGEND: CI - Completion Interval  Checked By:  SS - Split Spaan OVM - Organic Vapor Meter		!			38		1			
Geologist: B. Goldsby  LEGEND: CI - Completion Interval  Checked By:  SS - Split Spaan OVM - Organic Vapor Meter						-	j	:		
Geologist: B. Goldsby LEGEND: C1 - Completion Interval Checked By: SS - Split Spaan OVM - Organic Vapor Meter		1	*************		39					
Geologist: B. Goldsby LEGEND: C1 - Completion Interval Checked By: SS - Split Spaan OVM - Organic Vapor Meter						i		:		
Checked By: SS - Split Spoon OVM - Organic Vapor Meter	2			i	40			_		
			B. Gold	dsby						
	Спеске	a By:							SS - Split Spaan	

TOC - Top Of Casing

		160					LOG OF BORING No.: MW-18	
	TE.	rrai	<b>Text</b>					SHEET NUMBER 1 OF 2
L.,	- 01	er Vit.	and a				DRILLING CONTRACTOR: Best Drilling Services	
ENT:			ern Pacif				DRILLING METHOD: Hollow Stem Auger	
PROJECT NA			on Wood	Prese	rving			
		Works					1	
PROJECT NUI			069.07				SAMPLING METHOD: Split Spoon	
PROJECT LOC			iberty R	oad			1	PROGRAMMA CONTRACTOR C
		Housto	on, TX					Minimum colorenza e que
		East E	·				SURFACE ELEVATION:	Per distribution
BORING LOCA	TION:	East E	na				ITOC ELEVATION:	
	02/2	6/07		02	2/26/97		WATER LEVEL: 15.41'	-
START DATE: START TIME:		:10	FINISH DATE		2:30		WATER ELEVATION: 03/25/97	Minimum or a service of the service
SAMPLER	SAMPLE	OVM	RECOVERY		SOIL	-	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH	(PPVI)	(FT)	IN FEET	GRAPH	1		NOTES.
		1	:	** ***	G(-1.	$\overline{1}$	Fill, slightly moist, 10YR3/1, very dark gra	ay Sample Retained For
SS	0-5	-	5.0	1	i		to 10YR2/1, black,	Chemical Analysis
		ĺ	ī		FILL		gravel, brick, roots	- Constituent / Interfere
		ĺ		2				
			1		i			
		i		3	!	1	CLAY, silty, very slightly moist,	
			1		<u> </u>		very dark gray 10YR3/1	
		ĺ		4	:			
	1		1		-	1 :		
		ĺ		5	:			
	<del>                                     </del>		<del>'</del>	<b>~</b> —	:	1	CUL document 40VPG/4 army adag	
ss	5 - 10		5.0				Silt decreases, 10YR6/1 gray, odor	PP = 3.0
33	1 3 - 10 1		1 3.0	°	:			
		í		7				
ı ———	<del> </del>		<del>†                                    </del>	<i>'</i> —	:		50% calcareous nodules	
		i		8 -	i		30 /6 Calcareous rioquies	
	i		<del></del>		CL		Calcareous nodules decrease, mottling	PP = 2.5
			.] ;	9			with 10YR6/8 brownish yellow and	11 - 6.0
			:		<i>i</i>	1 :	10YR4/1 dark gray	
		í		10				
	i		! ;		,		Scattered calcareous and	PP = 2.5
SS	10 - 15		5.0	11			FE nodules	
			i i					
	! !			12				
		i	:	-				
			<u> </u>	13				
		i				1 1		
	!		-	14	,		27 91.	
		i			!		Very silty	PP = 1.0
	1 !			15			CUT alover maint 40VDG/4 mans	
ss	15 - 20		5.0	46	: 1		SILT, clayey, moist, 10YR6/1, gray,	-
33	13 - 201		: 5.0	16	. /		mottling with 10YR4/1, dark gray,	
		i	İ	17			and 2.5R4/8, red, scattered	
	+		1	1/	ML	1	calcareous and Fe nodules, green staining, no odor.	
		ı		18	IVIL		staining, no odor.	
	1			10		1		
		į		19	· /			
-	<del></del>			13			SAND, silty, moist, 10YR6/1 gray,	
		i	i	20	SM		green tint, odor	
Geologi	st:	B. Gold	tshv	40		-	LEGEND:	CI - Completion Interval
Checke	d Bv:	<b></b>	,00,				SS - Solit Spoon	

PP - Pocket Penetrometer TOC - Top Of Casing

	170	The state	CONT				LOG OF BORING No.: MW-18	
			AL ST					SHEET NUMBER 2 OF 2
				. , .			DRILLING CONTRACTOR: Best Drilling Services	Location Diagram
iT:			ern Pacif				DRILLING METHOD: Hollow Stem Auger	
PROJECT NA			on Wood	Prese	rving			
		Works				-		: 
PROJECT NUI		441020					SAMPLING METHOD: Split Spoon	:
ROJECT LOC	CATION:		iberty R	oad				
		Housto	on, TX					
							SURFACE ELEVATION:	
SORING LOCA	TION:	East E	nd				TOC ELEVATION:	1
							WATER LEVEL: 15.41'	
START DATE:	02/2	6/97	FINISH DATE	E 02	2/26/97		WATER ELEVATION:	
START TIME:	10:	10	FINISH TIME	: 12	2:30		DATE: 03/25/97	i
SAMPLER	SAMPLE	OVM	RECOVERY	CEPTH	SOIL	· C	SOIL DESCRIPTION AND DRILLING CONDITIONS	NOTES:
TYPE	DEPTH	(PPM)	(FT)	N FEET	GRAPH	1		
		(1)	1	1	1	Ė	SAND, saturated, 10YR6/2, light brownish	Sample Retained For
SS	20 - 25		5.0	21	1		gray, greenish staining, odor,	Chemical Analysis
	;		1				calcareous material at bottom.	Citorinoai / ulaiyaia
				22	† !		January Committee of the Committee of th	
	·		-				!	
				22	-			
	! !		-	23	•			
					!			
				24				
					SP			·
			9	25 i	1			
	ī		1		•			
00	25 - 30		2.75	20	1			
SS	25 - 30		3.75	26				
					<u> </u>			
	<u> </u>			27				
					1			
	! !		<u> </u>	28				
				_  _				
				29	!			
	! 7	-	İ		1			
	!		!	30	1			
	! i				i i	ĺ	CLAY, slightly moist, 2.5R4/8, red,	PP = 3.0
SS	30 - 35		5.0	31			with mottling 10YR7/1, light gray,	
	1 1		i				firm, hard, fractures, odor.	Sample Retained For
	!			32	1			Chemical Analysis
	:		-					
			!	33	СН		Very slightly moist, 5YR6/6 reddish yellow	PP = 4.0
	, ;		<u> </u>	-	,		with light gray 10YR7/1 mottling, hard, firm,	
				34	:		no fractures, no odor, silt content increases,	
	. 1		<del>-</del>		•		calcareous nodules.	
				35	† !		Gardi Godd Hodaled.	
	!		<del></del>	33	<del></del>			<u> </u>
				20	<del>{</del>		Paring TD = 25'	
				36			Boring TD = 35'	
	:		1	_	i i			
			<u> </u>	37				
	: !		1					
	:		1	38				
					<u>!</u>			
				39 :				
	:		!		:			
	:	P.,	İ	40	;			
eolog	ist:	B. Gold	dsby				LEGEND:	CI - Completion Interval
Checke		2. 001	,				SS - Split Spoon	OVM - Organic Vapor Meter
							23 9 9 10 1	PP - Pocket Penetrometer

TOC - Top Of Casing

	TIE	Fran	ievt			LOG OF BORING No.:	MW-18C	SHEET NUMBER 1 OF 2
)	115		ic ar			DRILLING CONTRACTOR:	Best Drilling Services	Location Diagram
LIENT:		Southe	m Pacifi	c l ine	9	DRILLING METHOD:	Hollow Stem Auger	
OJECT NAME			n Wood					<b>7</b> ·
OJECT NAME	<u> </u>	Works	11000	1 0.00				7
ROJECT NUME		441020	69.07			SAMPLING METHOD:	CME 5-foot Sampler	7
ROJECT LOCA			berty Ro	ad				
TOECT COC	II QIL	Housto						
			,			SURFACE ELEVATION:		
ORING LOCAT	704	East co	mer of	site		TOC ELEVATION:		
ALIVO COCAT	1014					WATER LEVEL:		
TART DATE:	04/2	4/97	FINISH DATE	. 04	4/25/97	WATER ELEVATION:		1
TART TIME:	0		FINISH TIME			DATE:		T .
SAMPLER	SAMPLE	OVM	RECOVERY		SOIL	C   SOIL DESCRIP	PTION AND DRILLING CONDITIONS:	NOTES:
TYPE	DEPTH	(PPM)	(FT)	N FEET	GRAPH	1		
1114	CEPTA	1	1	1				Boring Advanced with 8 1/4-
l				51	1 1			inch O.D., 4 1/4-inch I.D. HSA
			+		1			
				52	†			See log of MW-18 for geology
<u> </u>					1			from 0 to 50 feet.
				53	1. 1			
		-			† 1			
				54	1 4			
		<del> </del>	1		1 1			
CB1			4.7'	55	СН	CLAY: reddish bro	wn; hard; medium	
		<del>i</del>	1			plasticity; moist		
1				56	1			
		<del>i</del>			1 1			
and the same of th				57	1 1			
		i i	i i		7 1			
				58	1 1			
i					7			
				59	1 :			
	· · · · · · · · · · · · · · · · · · ·	i	<u> </u>		7			
	60.0		1	60	7 - 1			
i	- 3.3	l	Ī		7			
CB 2			3.7	61	1 1			
		İ	T		7			
			1	62	1 1			
		İ	1		1			
				63	7 1			
		Ī	1		ML I		vn; firm; non-plastic;	
				64	7	dilatent; moist		
		i	Ī		7			
	65.0			65	CL	Silty CLAY; reddis	h brown; very stiff; low	
		1	ī			plasticity; moist	with CaCO3 nodules, pea size	
CB 3			3.4	66		Silty SAND; reddis	h brown; mild creosote odor	
	<u> </u>	i	<del>  •••</del>		SP	very fine grained;		A
	1	l	1		7		the state of the s	

	-								AANA/ 49C	
	45	-	- A					LOG OF BORING No.:	MW-18C	
	TE STE	TO	<b>lext</b>							SHEET NUMBER 2 OF 2
				-				DRILLING CONTRACTOR:	Best Drilling Services	Location Diagram
CLIENT:			m Pacif					DRILLING METHOD:	Hollow Stem Auger	<u>-</u>
PROJECT NAM	E		n Wood	Per	ser	ving				
		Works							CME 5 foot Complet	
PROJECT NUM	QJECT NUMBER: 44102069.07							SAMPLING METHOD:	CME 5-foot Sampler	-
PROJECT LOC	MOITA	4910 L	iberty R	oad						_
		Housto	n, TX							_
							-	SURFACE ELEVATION:		_
BORING LOCA	TION:	East co	mer of	site				TOC ELEVATION:		
						0.410.410	_	WATER LEVEL:		_
START DATE:	04/2	3/97	FINISH DATE	Ē		04/24/9	7	WATER ELEVATION:		
START TIME:			FINISH TIME	1				DATE:	TON AND DRILLING CONDITIONS	NOTES:
SAMPLER	SAMPLE	OVM	RECOVERY	OEPT	н	SOIL	C	SOIL DESCRIPT	ION AND URILLING CONDITIONS	NOTES.
TYPE	DEPTH	(PPM)	(FT)	IN FE	ET	GRAPH	1 1	1		
			0.0		$\dashv$			amding fine to you	, fine arrived	
CB 4	<u> </u>	<u> </u>	3.2	71				grading fine to very	/ line grained	
				-	$\dashv$			3" thick clay lens @	2 71 5'	
	1	<u> </u>	<del></del>	72				3 thick clay let is to	<u> </u>	
				70	$\vdash$			amding fine to med	dium grained; creosote odor	
		-		73	-			grading line to med	dum gramed, dreosote odor	
				74	$\vdash$			grading with trace	gravel and oil sheen	
	!		<del>-</del>	14				and creosote odor	graver and on sneem	
1	75.0			75	$\vdash$				fine grained; oil sheen	
	1 73.0	-	<del> </del>	13				grades out	, mie granies, en erieer.	
CB 5			4.1	76	-	CH	1		wn; hard; medium plasticity	
CB 3	!		1 7.1	10		011		00 11,1000.011 510	viii, mara, modram praesury	
			į	77	H					
1	!	-	-	1 ''					•	
	•			78	Н					
	!	-	<del></del>	1.0			1	grading reddish bro	own; and light gray	
				79	$\vdash$			3		
	<del> </del>	<del> </del>	<del></del>	1			1	grading light gray		
	80.0			80				3		
	1	<del></del>	i	1			1			Bottom of boring @ 80.0'
1				81		2				
-	<del> </del>	<del>                                     </del>	<del>-i</del>	1						Install monitoring well 18C
1				82						on 4/24/97
	1	<del> </del>	<del>-</del>							
1			!	83						
	<del>:                                    </del>	<del>                                     </del>	Ī	1						
1	!			84						
	i		i	1						
	!			85						
	ī	i -	1	1						
		,	į	86			1			
	İ	1	Ī	1						
	1			87						
	!	Ī		7						
	•			88						
	1	İ	1	7			1			
	ļ		İ	89		Ī				
	1	T	1	1		Ī		-		
1				90	1	1	_!_			l e
eolog	ist.	R. Lar	nh						LEGEND:	CI - Completion Interval

eologist: Checked By:

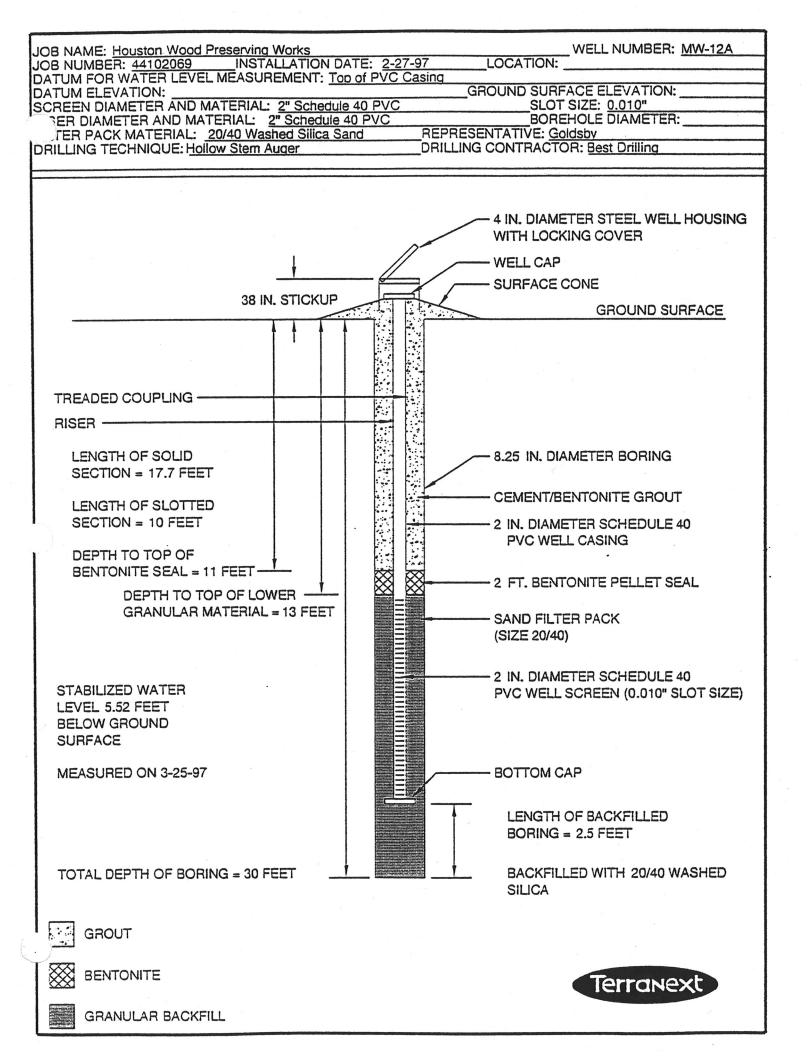
SS - Split Spoon

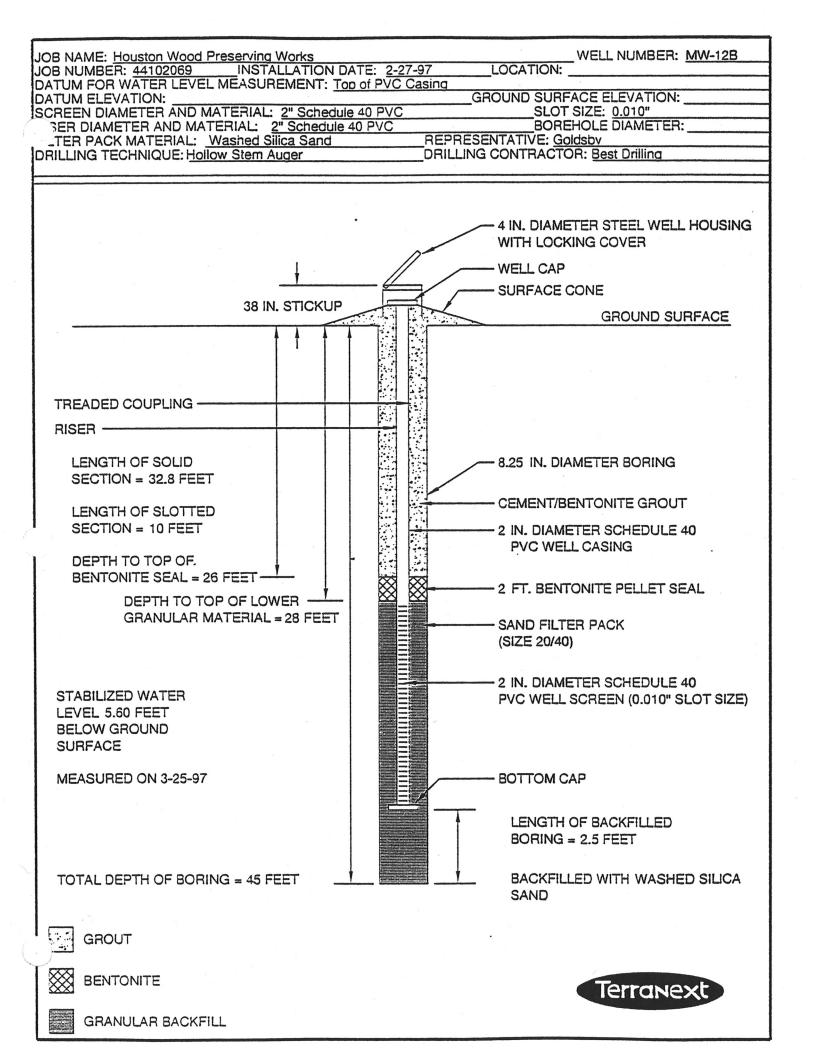
OVM - Organic Vapor Meter PP - Pocket Penetrometer

TOC - Top Of Casing

### ATTACHMENT III

MONITORING WELL CONSTRUCTION DETAILS

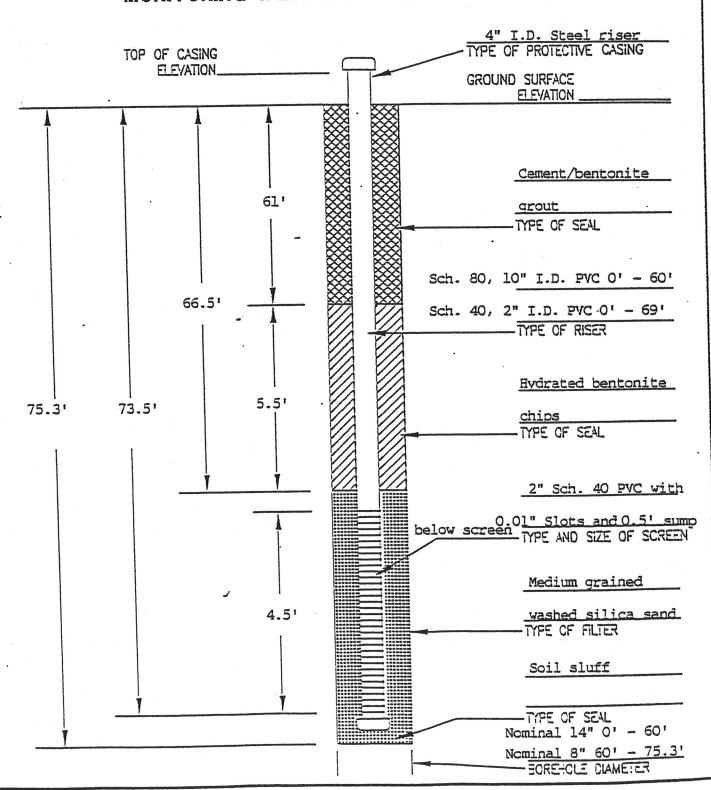


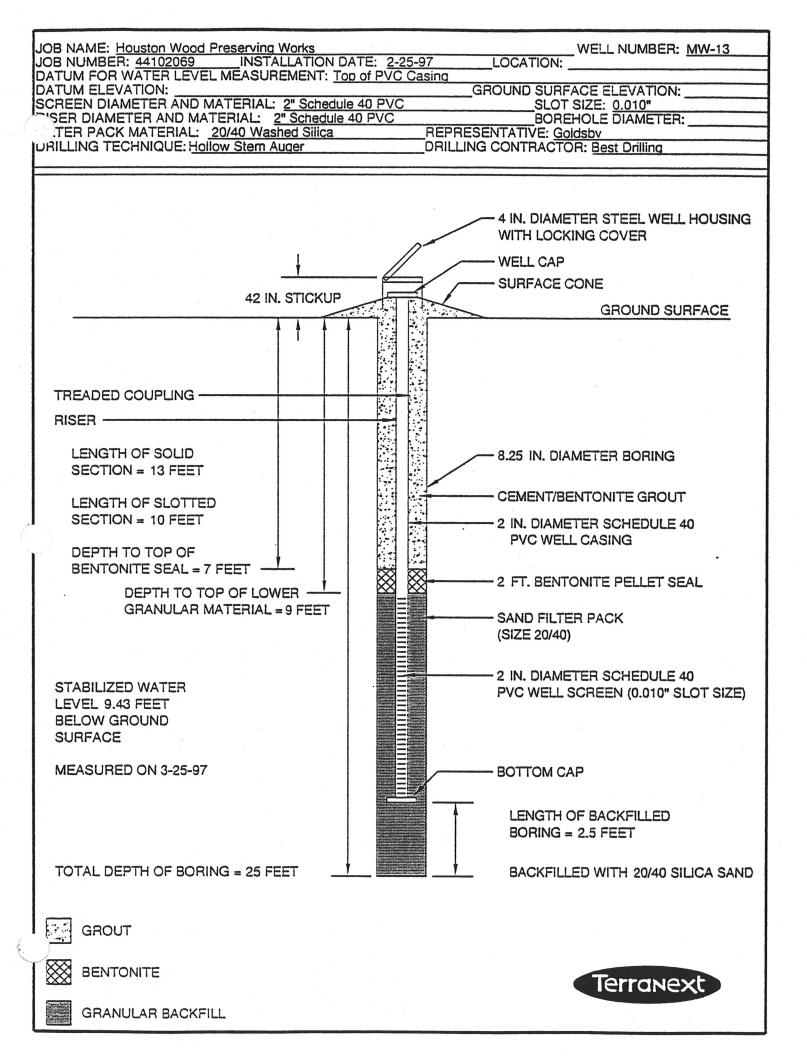




JOB # 44102069 PROJECT Houston Wood Preserving Works

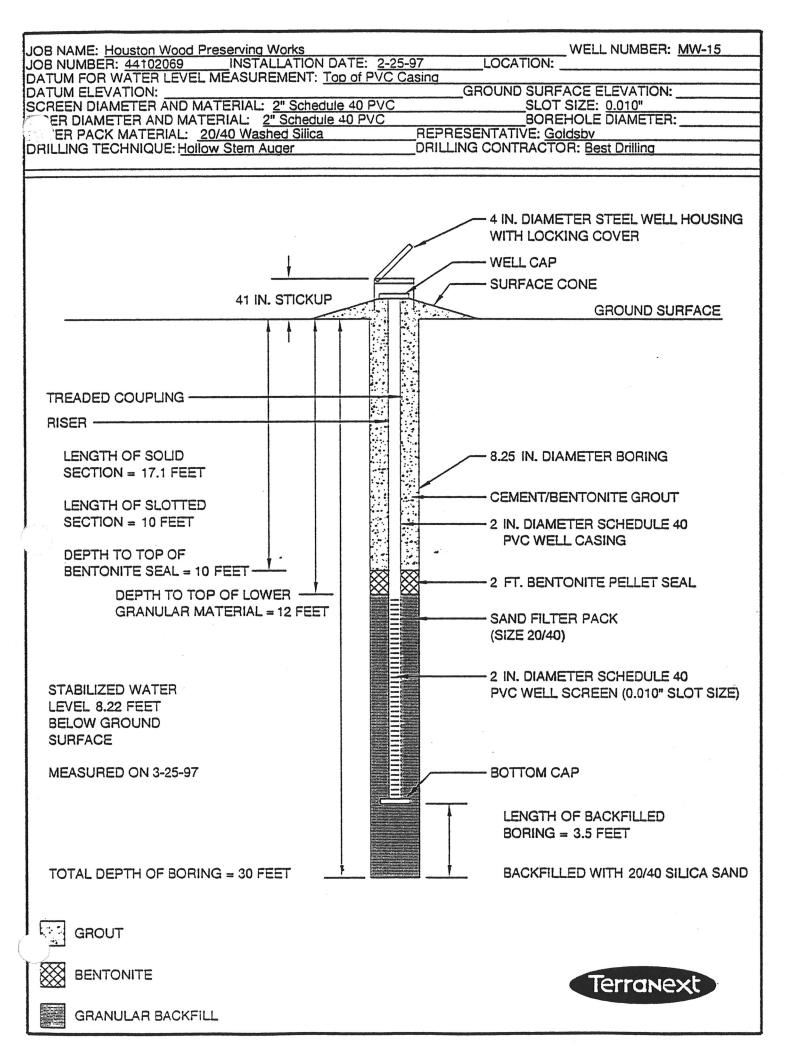
### MONITORING WELL INSTALLATION DIAGRAM





JOB NAME: Houston Wood Preserving Works WELL NUMBER: MW-14 JOB NUMBER: 44102069 INSTALLATION DATE: 2-27-97 LOCATION: DATUM FOR WATER LEVEL MEASUREMENT: Top of PVC Casing DATUM ELEVATION: GROUND SURFACE ELEVATION: SCREEN DIAMETER AND MATERIAL: 2" Schedule 40 PVC SLOT SIZE: 0.010" ER DIAMETER AND MATERIAL: 2" Schedule 40 PVC BOREHOLE DIAMETER: REPRESENTATIVE: Goldsby ER PACK MATERIAL: Washed Silica Sand DHILLING TECHNIQUE: Hollow Stem Auger DRILLING CONTRACTOR: Best Drilling 4 IN. DIAMETER STEEL WELL HOUSING WITH LOCKING COVER WELL CAP SURFACE CONE 40 IN, STICKUP GROUND SURFACE - 10 IN. DIAMETER SCHEDULE 40 PVC SURFACE CASING TREADED COUPLING -RISER -LENGTH OF SOLID SECTION = 33 FEET - 27 FEET - 12 IN. DIAMETER BORING LENGTH OF SLOTTED - CEMENT/BENTONITE GROUT SECTION = 10 FEET - 2 IN. DIAMETER SCHEDULE 40 DEPTH TO TOP OF PVC WELL CASING BENTONITE SEAL = 26 FEET - 2 FT. BENTONITE PELLET SEAL DEPTH TO TOP OF LOWER GRANULAR MATERIAL = 28 FEET SAND FILTER PACK (SIZE 20/40) 2 IN. DIAMETER SCHEDULE 40 STABILIZED WATER PVC WELL SCREEN (0.010" SLOT SIZE) LEVEL 7.71 FEET **BELOW GROUND** SURFACE MEASURED ON 3-25-97 **BOTTOM CAP** LENGTH OF BACKFILLED BORING = 2.5 FEET TOTAL DEPTH OF BORING = 45 FEET BACKFILLED WITH 20/40 SILICA SAND **GROUT** BENTONITE Terranex

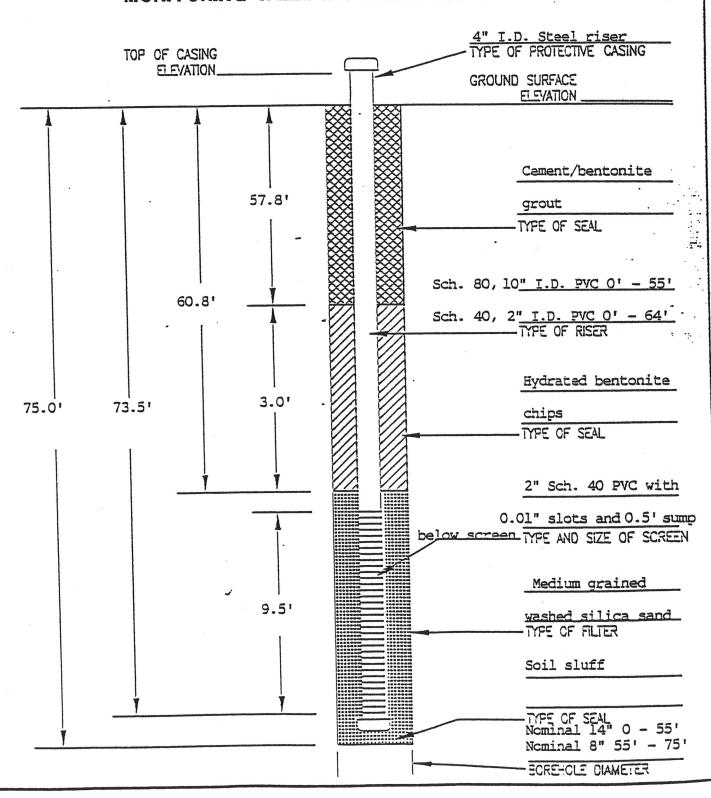
GRANULAR BACKFILL





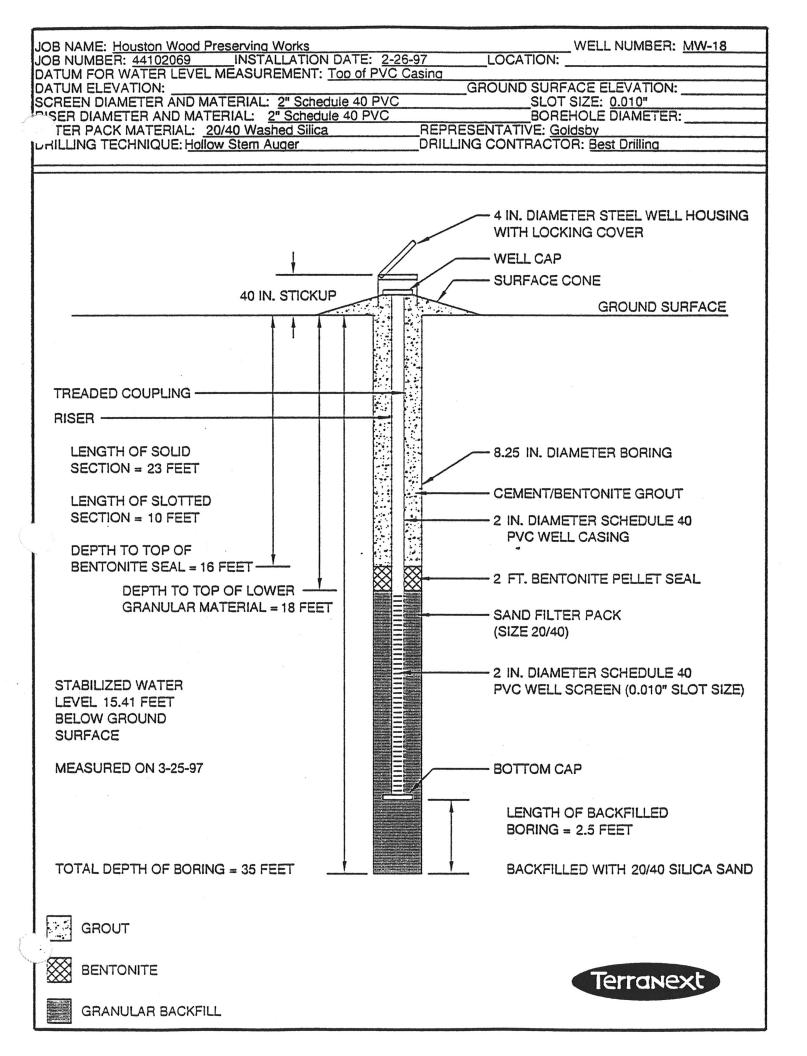
JOB # 44102069 PROJECT Houston Wood Preserving Works

### MONITORING WELL INSTALLATION DIAGRAM



JOB NAME: Houston Wood Preserving Works	WELL NUMBER: MW-16
JOB NUMBER: 44102069 INSTALLATION FOR WATER LEVEL MEASUREMEN	T: Top of PVC Casing
DATUM ELEVATION:	GROUND SURFACE ELEVATION:
SER DIAMETER AND MATERIAL: 2" Sche	edule 40 PVC BOREHOLE DIAMETER:
TER PACK MATERIAL: 20/40 Washed Sil DRILLING TECHNIQUE: Hollow Stem Auger	ica Sand REPRESENTATIVE: Goldsby DRILLING CONTRACTOR: Best Drilling
38 IN. STIC	4 IN. DIAMETER STEEL WELL HOUSING WITH LOCKING COVER WELL CAP SURFACE CONE
	GROUND SURFACE
TREADED COUPLING	
RISER —	
LENGTH OF SOLID SECTION = 17.3 FEET	8.25 IN. DIAMETER BORING
	CEMENT/BENTONITE GROUT
LENGTH OF SLOTTED  SECTION = 10 FEET	
SECTION = TO PEET	2 IN. DIAMETER SCHEDULE 40 PVC WELL CASING
DEPTH TO TOP OF	
BENTONITE SEAL = 10.5 FEET	2 FT. BENTONITE PELLET SEAL
DEPTH TO TOP OF LOWER -	
GRANULAR MATERIAL = 12.5 F	SAND FILTER PACK (SIZE 20/40)
STABILIZED WATER LEVEL 7.41 FEET BELOW GROUND SURFACE	2 IN. DIAMETER SCHEDULE 40 PVC WELL SCREEN (0.010" SLOT SIZE)
MEASURED ON 3-25-97	BOTTOM CAP
	LENGTH OF BACKFILLED BORING = 3 FEET
TOTAL DEPTH OF BORING = 30 FEET	BACKFILLED WITH 20/40 SILICA SAND
GROUT	
BENTONITE	Terranext
GRANULAR BACKFILL	

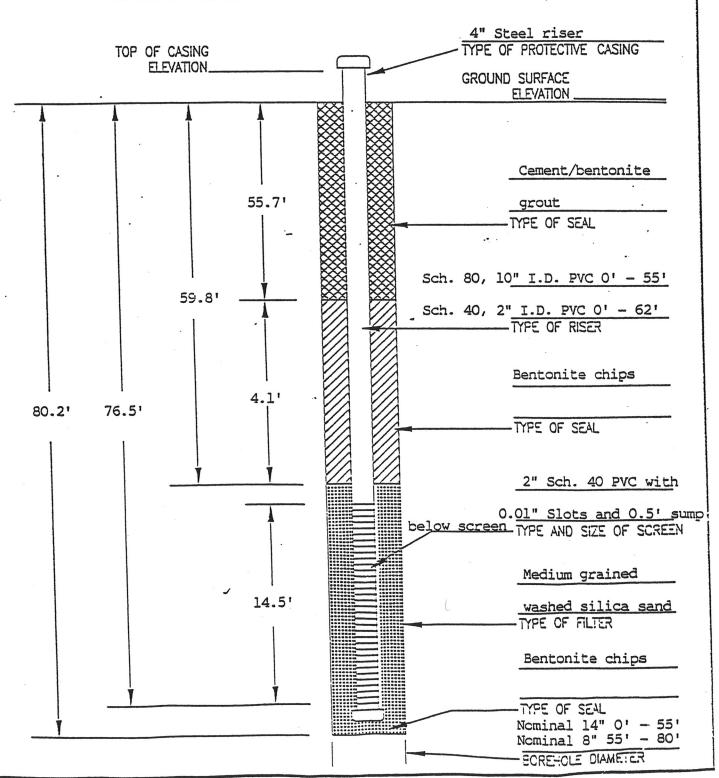
WELL NUMBER: MW-17 JOB NAME: Houston Wood Preserving Works LOCATION: INSTALLATION DATE: 3-25-97 JOB NUMBER: 44102069 DATUM FOR WATER LEVEL MEASUREMENT: Top of PVC Casing **GROUND SURFACE ELEVATION:** DATUM ELEVATION: SCREEN DIAMETER AND MATERIAL: 2" Schedule 40 PVC SLOT SIZE: 0.010" RISER DIAMETER AND MATERIAL: 2" Schedule 40 PVC BOREHOLE DIAMETER: 8 1/4" REPRESENTATIVE: Goldsby ER PACK MATERIAL: 20/40 Washed Silica Sand LLING TECHNIQUE: Hollow Stem Auger DRILLING CONTRACTOR: Best Drilling 4 IN. DIAMETER STEEL WELL HOUSING WITH LOCKING COVER WELL CAP SURFACE CONE 43 IN. STICKUP **GROUND SURFACE** TREADED COUPLING -RISER -LENGTH OF SOLID - 8.25 IN. DIAMETER BORING SECTION = 23.4 FEET CEMENT/BENTONITE GROUT LENGTH OF SLOTTED SECTION = 10 FEET - 2 IN. DIAMETER SCHEDULE 40 PVC WELL CASING DEPTH TO TOP OF BENTONITE SEAL = 16 FEET - 2 FT. BENTONITE PELLET SEAL DEPTH TO TOP OF LOWER GRANULAR MATERIAL = 18 FEET SAND FILTER PACK (SIZE 20/40) - 2 IN. DIAMETER SCHEDULE 40 STABILIZED WATER PVC WELL SCREEN (0.010" SLOT SIZE) LEVEL 9.97 FEET **BELOW GROUND** SURFACE MEASURED ON 3-25-97 BOTTOM CAP LENGTH OF BACKFILLED BORING = 2.5 FEET TOTAL DEPTH OF BORING = 35 FEET BACKFILLED WITH 20/40 SILICA SAND **GROUT** BENTONITE Terranext GRANULAR BACKFILL





JOB # 44102069 PROJECT Houston Wood Preserving Works

#### MONITORING WELL INSTALLATION DIAGRAM



# Laboratory Analytical Reports Appendix B

February 13, 1998 W.O. #422-09

ERM-SOUTHWEST, INC. 16300 Katy Freeway, Suite 300 Houston, Texas 77094-1611 (281) 579-8999

Pace Analytical Services, Inc. 900 Gemini Avenue Houston, TX 77058

> Tel: 713-488-1810 Fax: 713-488-4661



April 07, 1997 Report No.: 00060264 Section A Page 1

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW13-S00

SAMPLE NO: H446071

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042 PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 25-FEB-97 1020

DATE RECEIVED: 27-FEB-97

	TEST				
LN	CODE	DETERMINATION	DILUTION		
		DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	,		
		Benzene	1	< 5	-0, -0
		Chlorobenzene	1	< 5	- J J
		Ethylbenzene	1	< 5	-37 113
		Methylene chloride	1	< 5	-37 113
		Toluene	1	< 5	G
		Xylenes (total)	1	< 5	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	1	< 5	ug/kg
		1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	1	< 330	-3,
		2,4-Dinitrotoluene	. 1	< 330	
		2,6-Dinitrotoluene	1	< 330	<b></b>
		2-Chloronaphthalene	1	< 330	J
		2-Methylnaphthalene	1	< 330	-373
		4,6-Dinitro-o-cresol	1	< 330	
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 1,600	• •
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	. 1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	. 1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	. < 330	ug/kg
		Fluorene	1		ug/kg
		N-Nitrosodiphenylamine	1		ug/kg
		Naphthalene	1		ug/kg
		Nitrobenzene	1		ug/kg
	i	Pentachlorophenol	1		ug/kg
	1	Phenanthrene	1		ug/kg
	ı	Phenol	1.		ug/kg
	F	Pyrene	1		ug/kg
	ł	pis(2-Chloroethoxy)methane	1		ug/kg
		V · · · · · · · · · · · · · · · · · · ·	1	< 330	ug/kg

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April 07, 1997 Report No.: 00060264 Section A Page 2

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW13-S00

SAMPLE NO: H446071

TEST

N CODE DETERMINATION FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate 1 < 330 ug/kg

April 07, 1997
Report No.: 00060264
Section A Page 3

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW13-S015

SAMPLE NO: H446072

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042 PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 25-FEB-97 1032

DATE RECEIVED: 27-FEB-97

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	um /lem
		Benzene	1	< 5	ug/kg ug/kg
		Chlorobenzene	· 1	< 5	ug/kg ug/kg
		Ethylbenzene	1	< 5	•
		Methylene chloride	1	< 5	ug/kg ug/kg
		Toluene	1	< 5	ug/kg ug/kg
		Xylenes (total)	1	< 5	ug/kg ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil		` `	ug/ kg
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	·	< 1,600	ug/kg
		Acenaphthene	1		ug/kg
		Acenaphthylene	1		ug/kg
		Anthracene	. 1		ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1		ug/kg
		Di-n-butyl phthalate	1		ug/kg
		Dibenzofuran	1		ug/kg
		Fluoranthene	1		ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1		ug/kg
		Naphthalene	1		ug/kg
		Nitrobenzene	1		ug/kg
		Pentachlorophenol	1 <		ug/kg
		Phenanthrene	1 ~		ug/kg
		Phenol	1	< 330	ug/kg
		Pyrene	1		ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
1					

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April 07, 1997 Report No.: 00060264 Section A Page 4

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW13-S015

SAMPLE NO: H446072

TEST

CODE

LN

DETERMINATION

DILUTION

1

RESULT UNITS

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

April 07, 1997
Report No.: 00060264
Section A Page 5

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW13-S021

SAMPLE NO: H446073

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 25-FEB-97 1034

DATE RECEIVED: 27-FEB-97

	TEST		DILUTION		• • • • • • • • • • • • • • • • • • • •
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
					• • • • • • • • • • • • • • • • • • • •
1	OVTCS2				
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
7	001/700	Xylenes (total)	1	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1 "	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	, 1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	ss <b>1</b>	< 330	ug/kg
		Ni trobenzene	1	< 330	ug/kg
		Pentachlorophenol	. 1	< 1,600	ug/kg
		Phenanthrene Phenol	1	< 330	ug/kg
			1	< 330	ug/kg
		Pyrene	1	< 330	ug/kg
		bis(2-Chloroethoxy)methane	1	< 330	ug/kg

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April 07, 1997 Report No.: 00060264 Section A Page 6

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW13-S021

SAMPLE NO: H446073

TEST

LN

DETERMINATION

DILUTION

**FACTOR** 

RESULT UNITS

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

April 07, 1997
Report No.: 00060264
Section A Page 7

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW15-S00

SAMPLE NO: H446074

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007 PACE PROJECT: H44042

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 25-FEB-97 1330

DATE RECEIVED: 27-FEB-97

					••••••	
	TEST			DILUTION		
LN	CODE	DETERMINATION		FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil				
		1,2-Dichloroethane		1	< 5	ug/kg
		Benzene		1	< 5	ug/kg
		Chlorobenzene		1	< 5	ug/kg
		Ethylbenzene		1	< 5	ug/kg
		Methylene chloride		1	5	ug/kg
		Toluene		1	< 5	ug/kg
3	OSVTCS	Xylenes (total)		1	< 5	ug/kg
3	054165	TCL - Semi-volatile Extractables in Soil				
		1,2-Diphenylhydrazine		1	< 330	G G
		2,4-Dimethylphenol		1	< 330	ug/kg
		2,4-Dinitrotoluene		1	< 330	ug/kg
		2,6-Dinitrotoluene		1	< 330	ug/kg
		2-Chloronaphthalene		1	< 330	ug/kg
		2-Methylnaphthalene		1	< 330	ug/kg
		4,6-Dinitro-o-cresol		1	< 1,600	ug/kg
		4-Nitrophenol		1	< 1,600	ug/kg
		Acenaphthene		1	< 330	ug/kg
		Acenaphthylene		1	< 330	ug/kg
		Anthracene		1	< 330	ug/kg
		Benzo(a)anthracene		1	< 330	ug/kg
		Benzo(a)pyrene		1	< 330	ug/kg
		Chrysene		1	< 330	ug/kg
		Di-n-butyl phthalate Dibenzofuran	ix.	1	< 330	ug/kg
				1	< 330	ug/kg
		Fluoranthene		1	< 330	ug/kg
		Fluorene		1		ug/kg
		N-Nitrosodiphenylamine		1		ug/kg
		Naphthalene		1		ug/kg
		Nitrobenzene		1		ug/kg
		Pentach lorophenol		1	•	ug/kg
		Phenanthrene		1		ug/kg
		Phenol	Na.	1		ug/kg
		Pyrene		. 1		ug/kg
		bis(2-Chloroethoxy)methane		1	< 330	ug/kg

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April 07, 1997
Report No.: 00060264
Section A Page 8

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW15-S00
SAMPLE NO: H446074

TEST

CODE

DETERMINATION

DILUTION

**FACTOR** 

RESULT UNITS

bis(2-Ethylhexyl)phthalate

1 < 330 ug/kg

April 07, 1997 Report No.: 00060264 Section A Page 9

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW15-S020

SAMPLE NO: H446075

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042

PACE CLIENT: 620437 P.O. NO: 03219

DATE SAMPLED: 25-FEB-97 1345 DATE RECEIVED: 27-FEB-97

			••••••		
	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
			••••••		
1	OVTCS2	The state of the s			•
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	. 1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	6	ug/kg
		Toluene	1	< 5	ug/kg
		Xylenes (total)	1	6	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1		ug/kg
		Fluorene	1		ug/kg
		N-Nitrosodiphenylamine	1		ug/kg
		Naphthalene	· 1		ug/kg
		Nitrobenzene	1		ug/kg
		Pentachlorophenol	1		ug/kg
		Phenanthrene	1		ug/kg
		Phenol	. 1		ug/kg
		Pyrene	1		ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
		*		, 330	49/ 49

# Pace Analytical

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LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW15-S020

SAMPLE NO: H446075

TEST

LN

CODE

DETERMINATION

DILUTION

RESULT UNITS

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

April 07, 1997
Report No.: 00060264
Section A Page 11

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW15-S025

SAMPLE NO: H446076

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 25-FEB-97 1347

DATE RECEIVED: 27-FEB-97

	TEST		DILUTION				
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS		
1	OVTCS2	8260A TCL Volatiles in Soil					
		1,2-Dichloroethane	1	< 5	ug/kg		
		Benzene	1	< 5	ug/kg		
		Chlorobenzene	1	< 5.			
		Ethylbenzene	1	< 5	ug/kg ug/kg		
		Methylene chloride	1	6	ug/kg ug/kg		
		Toluene	1	< 5	ug/kg ug/kg		
		Xylenes (total)	1	< 5	ug/kg ug/kg		
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	·	` `	dg/ kg		
		1,2-Diphenylhydrazine	1	< 330	ug/kg		
		2,4-Dimethylphenol	· 1	< 330	ug/kg		
		2,4-Dinitrotoluene	1	< 330	ug/kg		
		2,6-Dinitrotoluene	1	< 330	ug/kg		
		2-Chloronaphthalene	1	< 330	ug/kg		
		2-Methylnaphthalene	1	< 330	ug/kg		
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg		
		4-Nitrophenol	1	< 1,600	ug/kg		
		Acenaphthene	1	< 330	ug/kg		
		Acenaphthylene	1	< 330	ug/kg		
		Anthracene	· 1		ug/kg		
		Benzo(a)anthracene	1		ug/kg		
		Benzo(a)pyrene	1		ug/kg		
		Chrysene	1		ug/kg		
		Di-n-butyl phthalate	1		ug/kg		
		Dibenzofuran	1		ug/kg		
		Fluoranthene	1		ug/kg		
		Fluorene	1		ug/kg		
		N-Nitrosodiphenylamine	1		ug/kg		
		Naphthalene	1		ug/kg		
		Nitrobenzene	1		ug/kg		
		Pentachlorophenol	1	< 1,600			
		Phenanthrene	1	< 330			
		Phenol	1		ug/kg		
		Pyrene	1		ug/kg		
		bis(2-Chloroethoxy)methane	1		ug/kg ug/kg		
			'	, 330	49/ 49		

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April 07, 1997 Report No.: 00060264 Section A Page 12

LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW15-S025

SAMPLE NO: H446076

CODE

LN

DETERMINATION

DILUTION **FACTOR** 

RESULT UNITS

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

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April 07, 1997 Report No.: 00060264 Section A Page 13

PROJECT MANAGER: Elessa Sommers

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT LIMS CLIENT: 0717 0007 ADDRESS: 6200 ROTHWAY, STE 190 PACE PROJECT: H44042 HOUSTON, TX 77040-PACE CLIENT: 620437 ATTENTION: BILL GOLDSBY P.O. NO: 03219 SAMPLE ID: HWPW-MW17-S025 DATE SAMPLED: 25-FEB-97 1622 SAMPLE NO: H446077 DATE RECEIVED: 27-FEB-97 SAMPLE MATRIX: SOIL

		45			
LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
•	041002	1,2-Dichloroethane			
		Benzene	5	< 25 *	-0,
		Chlorobenzene	5	50	-00
		Ethylbenzene	5	< 25	-0, -0
		Methylene chloride	125	1,200	
		Toluene	5	< 25	J. J
		Xylenes (total)	125	1,000	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	125	3,500	ug/kg
		1,2-Diphenylhydrazine	40	7 700 1	
		2,4-Dimethylphenol	10	< 3,300 *	ug/kg
		2,4-Dinitrotoluene	10	< 3,300	
		2,6-Dinitrotoluene	10	< 3,300	
		2-Chloronaphthalene	10	< 3,300	ug/kg
		2-Methylnaphthalene	10	< 3,300	
		4,6-Dinitro-o-cresol	10	32,000	ug/kg
		4-Nitrophenol	10	< 16,000	ug/kg
		Acenaphthene	10	< 16,000	ug/kg
		Acenaphthylene	10	27,000	ug/kg
		Anthracene	10	< 3,300	ug/kg
		Benzo(a)anthracene	10 10	17,000	ug/kg
		Benzo(a)pyrene		< 3,300	ug/kg
		Chrysene	10 10	< 3,300	ug/kg
		Di-n-butyl phthalate	10	3,300	ug/kg
		Dibenzofuran	10	< 3,300	ug/kg
		Fluoranthene	10	24,000	ug/kg
		Fluorene	10	23,000	ug/kg
		N-Nitrosodiphenylamine	10	28,000	ug/kg
		Naphthalene	25	< 3,300 120,000	ug/kg
		Ni trobenzene	10	< 3,300	ug/kg
		Pentachlorophenol	10	-	ug/kg
		Phenanthrene	25	< 16,000	ug/kg
		Phenol	10	69,000	ug/kg
		Pyrene	10	< 3,300	ug/kg
	1	bis(2-Chloroethoxy)methane	10	14,000 < 3,300	ug/kg
		• • • • • • • • • • • • • • • • • • • •	10	< 3,300	ug/kg

### 13 REPORT OF LABORATORY ANALYSIS

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April 07, 1997 Report No.: 00060264 Section A Page 14

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW17-S025

SAMPLE NO: H446077

TEST

CODE

DETERMINATION

DILUTION

RESULT UNITS

bis(2-Ethylhexyl)phthalate

10

< 3,300 ug/kg

LN

COMMENTS: \* The reporting limits are elevated due to the dilution required because of the high concentration of target analytes.

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW17-S030

SAMPLE MATRIX: SOIL

SAMPLE NO: H446078

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 25-FEB-97 1640

DATE RECEIVED: 27-FEB-97

PROJECT MANAGER: Elessa Sommers

			*************		
	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
••••					
1	OVTCS2	The votations in soil			
		1,2-Dichloroethane	5	< 25 *	ug/kg
		Benzene	5	< 25	ug/kg
		Chlorobenzene	5	< 25	ug/kg
		Ethylbenzene	5	700	
		Methylene chloride	5	< 25	
		Toluene	5	460	
_		Xylenes (total)	5	2,400	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil		• • • • • •	
		1,2-Diphenylhydrazine	30	< 9,900*#	ug/kg
		2,4-Dimethylphenol	30	< 9,900	
		2,4-Dinitrotoluene	30	< 9,900	• •
		2,6-Dinitrotoluene	30	< 9,900	
		2-Chloronaphthalene	30	< 9,900	
		2-Methylnaphthalene	30	76,000	
		4,6-Dinitro-o-cresol	30	< 50,000	
		4-Nitrophenol	30	< 50,000	
		Acenaphthene	30	26,000	
		Acenaphthylene	30	< 9,900	
		Anthracene	30	21,000	
		Benzo(a)anthracene	30	< 9,900	
		Benzo(a)pyrene	30	< 9,900	
		Chrysene	30	< 9,900	
		Di-n-butyl phthalate	30	< 9,900	
		Dibenzofuran	30	39,000	
		Fluoranthene	30	30,000	
		Fluorene	30	24,000	-
		N-Nitrosodiphenylamine	30	< 9,900	ug/kg
		Naphthalene	50	260,000	ug/kg
		Nitrobenzene	30	< 9,900	ug/kg
		Pentachlorophenol	30	< 50,000	ug/kg
		Phenanthrene	30		ug/kg
		Phenol	30	< 9,900	ug/kg
		Pyrene	30	17,000	ug/kg
		bis(2-Chloroethoxy)methane	30	< 9,900	ug/kg
			30	. ,,,,,,	721 VA

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April 07, 1997 Report No.: 00060264 Section A Page 16

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW17-S030

SAMPLE NO: H446078

TEST

LN

CODE

DETERMINATION

**FACTOR** 

RESULT UNITS

bis(2-Ethylhexyl)phthalate

30

< 9,900 ug/kg

COMMENTS: \* The reporting limits are elevated due to the dilution required because of

the high concentration of target analytes.

# The internal standard recoveries were outside of QC acceptance limits due to

matrix interferences, which was confirmed by re-analysis.

### 16 REPORT OF LABORATORY ANALYSIS

April 07, 1997 Report No.: 00060264 Section A Page 17

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW18-S00

SAMPLE NO: H446079

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 26-FEB-97 1010

DATE RECEIVED: 27-FEB-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
_N	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil	•		
•	011002	1,2-Dichloroethane			
		Benzene	125	< 620 *	ug/kg
		Chlorobenzene	125	< 620	ug/kg
		Ethylbenzene	125	< 620	ug/kg
		Methylene chloride	125	4,200	ug/kg
		Toluene	125	< 620	ug/kg
		Xylenes (total)	125	1,400	ug/kg
3	OSVTCS		625	42,000	ug/kg
-	034163	TCL - Semi-volatile Extractables in Soil 1,2-Diphenylhydrazine			
			10	< 3,300 *	ug/kg
		2,4-Dimethylphenol	10	< 3,300	ug/kg
		2,4-Dinitrotoluene	10	< 3,300	ug/kg
		2,6-Dinitrotoluene	10	< 3,300	ug/kg
		2-Chloronaphthalene	10	< 3,300	ug/kg
		2-Methylnaphthalene	10	6,900	ug/kg
		4,6-Dinitro-o-cresol	10	< 3,300	ug/kg
		4-Nitrophenol	10	< 3,300	ug/kg
		Acenaphthene	10	6,300	ug/kg
	*	Acenaphthylene	10	< 3,300	ug/kg
		Anthracene	10	9,200	ug/kg
		Benzo(a)anthracene	. 10	< 3,300	ug/kg
		Benzo(a)pyrene	10	< 3,300	ug/kg
		Chrysene	10	3,300	ug/kg
		Di-n-butyl phthalate	10	< 3,300	ug/kg
		Dibenzofuran	10	4,000	ug/kg
		Fluoranthene	10	16,000	ug/kg
		Fluorene	10	5,600	ug/kg
		N-Nitrosodiphenylamine	10		ug/kg
		Naphthalene	10		ug/kg
		Nitrobenzene	10		ug/kg
		Pentach loropheno l	10	-	ug/kg
		Phenanthrene	10	Paramana Paramana	ug/kg
		Phenol	10	and being the second	ug/kg ug/kg
		Pyrene	10		_
		bis(2-Chloroethoxy)methane	10		ug/kg ug/kg

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April 07, 1997 Report No.: 00060264 Section A Page 18

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HWPW-MW18-S00

SAMPLE NO: H446079

TEST

CODE

LN

DETERMINATION

DILUTION

**FACTOR** 

RESULT UNITS

bis(2-Ethylhexyl)phthalate

10

< 3,300 ug/kg

COMMENTS: \* The reporting limits are elevated due to the dilution required because of the high concentration of target analytes.

April 07, 1997 Report No.: 00060264 Section A Page 19

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW18-S025

SAMPLE MATRIX: SOIL

SAMPLE NO: H446080

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 26-FEB-97 1042

DATE RECEIVED: 27-FEB-97

PROJECT MANAGER: Elessa Sommers

	7507				
	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2				
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	9	
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	13	ug/kg
		Methylene chloride	1	< 5	
		Toluene	1	6	
		Xylenes (total)	1	39	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			-3, 113
		1,2-Diphenylhydrazine	. 1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	
		2,6-Dinitrotoluene	1	< 330	
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	. 1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1		ug/kg
		Dibenzofuran	1		ug/kg
		Fluoranthene	1		ug/kg
		Fluorene	1		ug/kg
		N-Nitrosodiphenylamine	1		ug/kg
		Naphthalene	1		ug/kg
		Nitrobenzene			ug/kg
		Pentachlorophenol	1	< 1,600	
		Phenanthrene	1	< 330	
		Phenol	1		ug/kg
		Pyrene	1		ug/kg
		bis(2-Chloroethoxy)methane	i		ug/kg

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LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW18-S025

SAMPLE NO: H446080

TEST

CODE

LN

DETERMINATION

DILUTION

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

April 07, 1997 Report No.: 00060264 Section A Page 21

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW18-S030

SAMPLE NO: H446081

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 26-FEB-97 1050

DATE RECEIVED: 27-FEB-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILLITAN.			
LN	CODE	DETERMINATION	DILUTION			
			FACTOR	RESULT	UNITS	
1	0)(7000	00/01 000 000				-
1	OVTCS2					
		1,2-Dichloroethane	1	< 5	ug/kg	
		Benzene	1	< 5		
		Chlorobenzene	1	< 5		
		Ethylbenzene	, 1	< 5	ug/kg	
		Methylene chloride	1	< 5		
		Toluene	1		ug/kg	
3	001/700	Xylenes (total)	1	< 5		
٥	OSVTCS	TCL - Semi-volatile Extractables in Soil				
		1,2-Diphenylhydrazine	1	< 330	ug/kg	
		2,4-Dimethylphenol	1	< 330	ug/kg	
		2,4-Dinitrotoluene	1	< 330	ug/kg	
		2,6-Dinitrotoluene	1	< 330	ug/kg	
		2-Chloronaphthalene	1	< 330	ug/kg	
		2-Methylnaphthalene	1	< 330	ug/kg	
		4,6-Dinitro-o-cresol	1	< 1,600		
		4-Nitrophenol	1	< 1,600		
		Acenaphthene	1	< 330	ug/kg	
		Acenaphthylene	1	< 330	ug/kg	
		Anthracene	1	< 330	ug/kg	
		Benzo(a)anthracene	1	< 330	ug/kg	
		Benzo(a)pyrene	1	< 330	ug/kg	
		Chrysene	1	< 330	ug/kg	
		Di-n-butyl phthalate	1	< 330	ug/kg	
		Dibenzofuran	1	< 330	ug/kg	
		Fluoranthene	i		ug/kg	
		Fluorene	1		ug/kg	
		N-Nitrosodiphenylamine	1		ug/kg	
		Naphthalene	1		ug/kg	
		Nitrobenzene	. 1		ug/kg	
	1	Pentachlorophenol	1			
		Phenanthrene	i		ug/kg	
	í	Phenol	1		ug/kg	
		Pyrene	1		ug/kg	
	Ł	pis(2-Chloroethoxy)methane	1		ug/kg	
			ı	< 330	ug/kg	

# REPORT OF LABORATORY ANALYSIS

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW18-S030

SAMPLE NO: H446081

TEST LN CODE

DILUTION **FACTOR** 

RESULT UNITS

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW16-S00

SAMPLE NO: H446082

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 26-FEB-97 1355

DATE RECEIVED: 27-FEB-97 PROJECT MANAGER: Elessa Sommers

TEST LN DILUTION DETERMINATION RESULT UNITS 1 OVTCS2 8260A TCL Volatiles in Soil 1,2-Dichloroethane Benzene < 5 ug/kg Chlorobenzene < 5 ug/kg Ethylbenzene 1 < 5 ug/kg Methylene chloride 1 < 5 ug/kg Toluene < 5 ug/kg Xylenes (total) < 5 ug/kg 3 OSVTCS TCL - Semi-volatile Extractables in Soil 1 < 5 ug/kg 1,2-Diphenylhydrazine 2,4-Dimethylphenol 10 < 3,300\* ug/kg 10 2,4-Dinitrotoluene < 3,300 ug/kg 10 2,6-Dinitrotoluene < 3,300 ug/kg 10 2-Chloronaphthalene < 3,300 ug/kg 2-Methylnaphthalene 10 < 3,300 ug/kg 10 4,6-Dinitro-o-cresol < 3,300 ug/kg 10 4-Nitrophenol < 16,000 ug/kg 10 Acenaphthene < 16,000 ug/kg < 3,300 Acenaphthylene 10 ug/kg 10 Anthracene < 3,300 ug/kg 10 Benzo(a)anthracene < 3,300 ug/kg 10 . Benzo(a)pyrene < 3,300 ug/kg 10 Chrysene < 3,300 ug/kg < 3,300 10 Di-n-butyl phthalate ug/kg 10 Dibenzofuran < 3,300 ug/kg 10 Fluoranthene < 3,300 ug/kg 10 < 3,300 Fluorene ug/kg N-Nitrosodiphenylamine 10 < 3,300 ug/kg 10 Naphthalene < 3,300 ug/kg 10 < 3,300 ug/kg Nitrobenzene Pentachlorophenol 10 < 3,300 ug/kg < 16,000 ug/kg 10 Phenanthrene < 3,300 ug/kg 10 Phenol 10 Pyrene < 3,300 ug/kg bis(2-Chloroethoxy)methane 10 < 3,300 ug/kg 10 < 3,300 ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW16-S00
SAMPLE NO: H446082

TEST DILUTION

LN CODE DETERMINATION FACTOR

DETERMINATION FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate 10 < 3,300 ug/kg

COMMENTS: \* The reporting limits are elevated due to the dilution required because of matrix interferences.

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW16-S020

SAMPLE NO: H446083

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042
PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 26-FEB-97 1415

DATE RECEIVED: 27-FEB-97

PROJECT MANAGER: Elessa Sommers

			PROJE	CI MANAGER:	Elessa Sommers
	EST			B.1.	
N C	ODE	DETERMINATION		DILUTION FACTOR	
					RESULT UNITS
1 ov	TCS2	8260A TCL Volatiles in Soil			~
		1,2-Dichloroethane			
		Benzene		1	< 5 ug/kg
		Chlorobenzene		1	< 5 ug/kg
		Ethylbenzene		1	< 5 ug/kg
		Methylene chloride		1	< 5 ug/kg
		Toluene		1	< 5 ug/kg
		Xylenes (total)		1	< 5 ug/kg
OSV		TCL - Semi-volatile Extractables in Soil		1	< 5 ug/kg
		1,2-Diphenylhydrazine			<b>.</b>
18		2,4-Dimethylphenol		1	< 330 ug/kg
		2,4-Dinitrotoluene		1	< 330 ug/kg
		2,6-Dinitrotoluene		1	< 330 ug/kg
		2-Chloronaphthalene		1	< 330 ug/kg
		2-Methylnaphthalene		1	< 330 ug/kg
		4,6-Dinitro-o-cresol		1	< 330 ug/kg
		4-Nitrophenol		1 .	< 1,600 ug/kg
		Acenaphthene		1	< 1,600 ug/kg
		Acenaphthylene		1	< 330 ug/kg
		Anthracene		1	< 330 ug/kg
	E	Benzo(a)anthracene		1	< 330 ug/kg
		Benzo(a)pyrene		1	< 330 ug/kg
		Chrysene		1	< 330 ug/kg
		li-n-butyl phthalate		1	< 330 ug/kg
	D	ibenzofuran		1	< 330 ug/kg
	F	luoranthene		1	< 330 ug/kg
	F	luorene	**	1	< 330 ug/kg
	N	-Nitrosodiphenylamine		1	< 330 ug/kg
	Na	aphthalene		1	< 330 ug/kg
		itrobenzene		1	< 330 ug/kg
	Pe	entach l oropheno l		1	< 330 ug/kg
	Pł	henanthrene		1	< 1,600 ug/kg
		tenol		1	< 330 ug/kg
	Py	/rene		1	< 330 ug/kg
	bi	s(2-Chloroethoxy)methane		1	< 330 ug/kg
		The second secon		1	< 330 ug/kg

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LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW16-S020

SAMPLE NO: H446083

TEST

CODE

LN

DETERMINATION

DILUTION

**FACTOR** 

RESULT UNITS

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW16-S025

SAMPLE NO: H446084

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 26-FEB-97 1420

DATE RECEIVED: 27-FEB-97

PROJECT MANAGER: Elessa Sommers

				210002 00	manici S
LN	TEST	DETERMINATION	DILUTION		
		DETERMINATION	FACTOR	RESULT	UNITS
		,			
1	OVTCS2	The state of the s			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	
		Chlorobenzene	1	< 5	
		Ethylbenzene	1	< 5	
		Methylene chloride	1	< 5.	ug/kg
		Toluene	1	< 5	
_		Xylenes (total)	1	6	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 330	
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	<u> </u>	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Nitrobenzene	1	< 330	ug/kg
		Pentachlorophenol	1	< 1,600	ug/kg
		Phenanthrene	1		ug/kg
		Phenol	1		ug/kg
		Pyrene	1	< 330	ug/kg
		bis(2-Chloroethoxy)methane	1	< 330	ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW16-S025

SAMPLE NO: H446084

TEST DILUTION LN CODE DETERMINATION **FACTOR** 

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

RESULT UNITS

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW12A-S00

SAMPLE NO: H446085

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 27-FEB-97 0808

DATE RECEIVED: 27-FEB-97

SA	MPLE MATE	RIX: SOIL	PROJECT MANAGER:	Elessa So	mmers
			±.		
	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	DECI II T	UNITS
		•		KESULI	
1	OVTCS2				
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
7	001/700	Xylenes (total)	1	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	. 1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1		ug/kg
		Fluoranthene	. 1		ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1		ug/kg
		Naphthalene	1		ug/kg
		Nitrobenzene	1		ug/kg
		Pentachlorophenol	1		ug/kg
		Phenanthrene	1	•	ug/kg
		Phenol	1		ug/kg
		Pyrene			ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW12A-S00

SAMPLE NO: H446085

TEST

LN

CODE DETERMINATION DILUTION

**FACTOR** 

RESULT UNITS

bis(2-Ethylhexyl)phthalate

1

< 330 ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW12A-S020

SAMPLE NO: H446086

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007
PACE PROJECT: H44042
PACE CLIENT: 620437
P.O. NO: 03219

DATE SAMPLED: 27-FEB-97 0830

DATE RECEIVED: 27-FEB-97

PROJECT MANAGER: Elessa Sommers

	TEST				
LN	CODE	DETERMINATION	DILUTION		
		DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< .5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	
		Ethylbenzene	1	< 5	
		Methylene chloride	1	< 5	
		Toluene	1	< 5	•. •
		Xylenes (total)	1	< 5	• •
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			-3,3
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	-
		4-Nitrophenol	1	-	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Nitrobenzene	1	< 330	ug/kg
		Pentachlorophenol	1	< 1,600	ug/kg
		Phenanthrene	1	< 330	ug/kg
		Phenol	1	< 330	ug/kg
		Pyrene	1	< 330	ug/kg
		bis(2-Chloroethoxy)methane	1	< 330	ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW12A-S020

SAMPLE NO: H446086

TEST
LN CODE DETERMINATION DILUTION
FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

April 07, 1997
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### LABORATORY ANALYSIS REPORT

CLIENT NAME: ADDRESS:	6200 ROTHWAY, STE 190	LIMS CLIENT: PACE PROJECT:	
ATTENTION:	HOUSTON, TX 77040- BILL GOLDSBY	PACE CLIENT: P.O. NO:	620437
SAMPLE ID: SAMPLE NO: SAMPLE MATRIX:		DATE SAMPLED: DATE RECEIVED: PROJECT MANAGER:	27-FEB-97
TEST			

		TEST					
L	N	CODE	DETERMINATION	DILUTION			
			DETERMINATION	FACTOR	RESULT	UNITS	
	1	OVTCS2	8260A TCL Volatiles in Soil				
			1,2-Dichloroethane		_	1.4	
			Benzene	1	< 5	ug/kg	
			Chlorobenzene	1	< 5	ug/kg	
			Ethylbenzene	1	< 5	ug/kg	
			Methylene chloride	1	< 5	ug/kg	
			Toluene	1	< 5	ug/kg	
			Xylenes (total)	1	< 5	ug/kg	
	3	OSVTCS	TCL - Semi-volatile Extractables in Soil	1	< 5	ug/kg	
			1,2-Diphenylhydrazine				
			2,4-Dimethylphenol	1	< 330	ug/kg	
			2,4-Dinitrotoluene	. 1	< 330	ug/kg	
			2,6-Dinitrotoluene	1	< 330	ug/kg	
			2-Chloronaphthalene	1	< 330	ug/kg	
			2-Methylnaphthalene	1	< 330	ug/kg	
			4,6-Dinitro-o-cresol	1		ug/kg	
			4-Nitrophenol	1		ug/kg	
			Acenaphthene	1		ug/kg	
			Acenaphthylene	. 1		ug/kg	
			Anthracene	1	< 330		
			Benzo(a)anthracene	1		ug/kg	
			Benzo(a)pyrene	1		ug/kg	
			Chrysene	1		ug/kg	
			Di-n-butyl phthalate	1		ug/kg	
			Dibenzofuran	1		ug/kg	
			Fluoranthene	1	< 330		
			Fluorene	1		ug/kg	
		1	N-Nitrosodiphenylamine	1		ug/kg	
			Naphthalene	1		ug/kg	
		,	Nitrobenzene	1		ug/kg	
		F	Pentach loropheno l	1		ıg/kg	
		F	Phenanthrene			ıg/kg	
		F	Phenol	1		ıg/kg	
		P	Pyrene	1		ıg/kg	
		b	pis(2-Chloroethoxy)methane	1		ıg/kg	
			,	1	< 330 u	ıg/kg	

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< 330 ug/kg

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW12A-S025

SAMPLE NO: H446087

TEST
LN CODE DETERMINATION FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate

April 07, 1997
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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW12B-S030

SAMPLE NO: H446088

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 27-FEB-97 1025

DATE RECEIVED: 27-FEB-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	DECINT	UNITS
	• • • • • • • • • • • • • • • • • • • •			KESULI	ONIIS
1	OVTCS2	93/04 781 Well at the second			
'	001632	8260A TCL Volatiles in Soil 1,2-Dichloroethane			
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	. 1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
		Xylenes (total)	1	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	1	< 5	ug/kg
		1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	, 1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 330	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1		ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1		ug/kg
		N-Nitrosodiphenylamine	1		ug/kg
		Naphthalene	1		ug/kg
		Nitrobenzene	. 1		ug/kg
		Pentach loropheno l	1		ug/kg
		Phenanthrene	1	-	ug/kg
		Phenol	1		ug/kg
		Pyrene	1		ug/kg
		ois(2-Chloroethoxy)methane	1		ug/kg
		· · · · · · · · · · · · · · · · · · ·	1	< 330	ug/kg

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LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW12B-S030

SAMPLE NO: H446088

TEST LN CODE DETERMINATION RESULT UNITS

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

Tel: 713-488-1810 Fax: 713-488-4661

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW12B-S040

SAMPLE NO: H446089

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44042

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 27-FEB-97 1053

DATE RECEIVED: 27-FEB-97
PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
-	001/700	Xylenes (total)	1	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 330	
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	
		4,6-Dinitro-o-cresol	1	< 1,600	J. J
		4-Nitrophenol	1	< 1,600	
		Acenaphthene	1	< 330	
		Acenaphthylene	- 1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Nitrobenzene	. 1	< 330	ug/kg
		Pentachlorophenol	1	< 1,600	
		Phenanthrene	1	< 330	
		Phenol	1	< 330	ug/kg
		Pyrene	1	< 330	ug/kg
		bis(2-Chloroethoxy)methane	1	< 330	ua/ka

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LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-MW12B-S040

SAMPLE NO: H446089

DILUTION LN CODE DETERMINATION

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

RESULT UNITS

**FACTOR** 

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#### SUPPLEMENTAL INFORMATION

				• • • • • • • • • • • • • • • • • • • •						
	TEST	LCSR BLNK	DUP/MS MS/MSD		SAMPLE PREPAR	RATION		SAMPLE ANALYS	SIS	
LN	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPL	E ID:	HWPW-MW13	-s00					SAMPLE NO	): H4460	171
								57.8.1. 22		
	OVTCS2		72083		11-MAD-07:1070	DD0	19-8260A	04-MAR-97 2015		GCMSY
3	034103	12147	16147	19-3330A	11-MAR-97 1030	KDQ	19-8270B	17-MAR-97 0758	EAY	GCMSA
SAMPL	E ID:	HWPW-MW13	-\$015					SAMPLE NO	: H4460	172
1	OVTCS2	72004	72083	NA			19-8260A	05-MAR-97 1254	.ic	GCMSY
3	OSVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270B	17-MAR-97 0848		GCMSA
SAMPL	ID:	HWPW-MW13	-\$021					SAMPLE NO	. 44440	177
								SAMPLE NO	. 14400	13
	OVTCS2		72083				19-8260A	05-MAR-97 1328	JC	GCMSY
3	OSVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270B	17-MAR-97 0936	EAY	GCMSA
AMPLI	ID:	HWPW-MW15	-s00					SAMPLE NO	: H4460	74
1	OVTCS2	72004	72083	NΔ			19-8260A	OF MAD 07 4750	10	001101
	OSVTCS			19-3550A	11-MAR-97 1030	RDQ	19-8270B	05-MAR-97 1359 17-MAR-97 1115		GCMSY GCMSA
							.,	77 1112		dullon
SAMPLE	ID:	HWPW-MW15	-s020					SAMPLE NO	: H4460	75
1	OVTCS2	72004	72083	NA			19-8260A	05-MAR-97 1433	JC	GCMSY
3	OSVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270в	17-MAR-97 1204	EAY	GCMSA
SAMPLE	ID:	HWPW-MW15	-\$025					SAMPLE NO	: H4460	76
	017000	7000/	70.00							
	OVTCS2 OSVTCS		72083 72140	NA 19-3550A	11-MAR-97 1030	, no	19-8260A	05-MAR-97 1506		GCMSY
-	007103	16147	12147	19-3330A	11-MAK-97 1030	KUU	19-8270B	21-MAR-97 1546	EAY	GCMSA
AMPLE	ID: I	HWPW-MW17-	·\$025					SAMPLE NO	: н4460	77
1	OVTCS2	72161	72083	NA			19-8260A	09-MAR-97 1839	ır	GCMSY
3	OSVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270B	03-APR-97 1355		GCMSA
AMPLE	ID: I	HWPW-MW17-	·s030					SAMPLE NO	• HYYYU.	78
								OAFIF EL NO		, •
	OVTCS2		72083				19-8260A	07-MAR-97 1912	JC	GCMSY
5	OSVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270В	22-MAR-97 1837	EAY	GCMSA

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### SUPPLEMENTAL INFORMATION

	TEST	LCSR BLNK	DUP/MS MS/MSD	***********	SAMPLE PREPAR	RATION	•••••	SAMPLE ANALYSIS -	
LN	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME ANAL	YST INSTRUMEN
AMPLE	ID: i	IWPW-MW18	-500					SAMPLE NO: H	1446079
	VTCS2		72083				19-8260A	09-MAR-97 1945 JC	GCMSY
3 09	SVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270B	22-MAR-97 1926 EAY	GCMSA
MPLE	ID: H	IWPW-MW18	-\$025					SAMPLE NO: H	446080
1 0	VTCS2	72004	72083	NA			19-8260A	05-MAR-97 1539 JC	GCMSY
3 09	SVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270в	21-MAR-97 1814 EAY	GCMSA
AMPLE 1	ID: H	IWPW-MW18	-s030					SAMPLE NO: H	446081
1 0\	VTCS2	72004	72083	NA			19-8260A	05-MAR-97 1613 JC	GCMSY
3 09	SVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270в	21-MAR-97 1903 EAY	GCMSA
AMPLE 1	ID: H	IWPW-MW16	-\$00					SAMPLE NO: H	446082
	/TCS2		72083	7			19-8260A	05-MAR-97 1646 JC	GCMSY
3 08	SVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270в	03-APR-97 1445 EAY	GCMSA
AMPLE I	D: H	IWPW-MW16	-s020					SAMPLE NO: H	446083
1 OV	/TCS2	72004	72083	NA			19-8260A	05-MAR-97 1719 JC	GCMSY
3 08	SVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270B	19-MAR-97 0353 EAY	GCMSA
AMPLE I	D: H	WPW-MW16	-\$025					SAMPLE NO: H	446084
1 ov	TCS2	72004	72083	NA ·			19-8260A	05-MAR-97 1752 JC	GCMSY
3 OS	SVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270B	21-MAR-97 1952 EAY	GCMSA
MPLE I	D: H	WPW-MW12/	A-S00					SAMPLE NO: H	446085
1 ov	TCS2	72004	72083	NA			19-8260A	05-MAR-97 1826 JC	GCMSY
3 os	VTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270B	21-MAR-97 2042 EAY	GCMSA
MPLE I	D: H	WPW-MW12/	A-S020					SAMPLE NO: H	446086
1 ov	TCS2	72004	72083	NA			19-8260A	05-MAR-97 1859 JC	GCMSY
3 os	VTCS	72149			11-MAR-97 1030	RDQ	19-8270B	21-MAR-97 2131 EAY	GCMSA

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### SUPPLEMENTAL INFORMATION

	LCSR TEST BLNK		DUP/MS MS/MSD		SAMPLE PREPAR	RATION	*********	SAMPLE ANALY	YSIS	
LN	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPL	E ID: H	IWPW-MW12	A-\$025					SAMPLE N	NO: H4460	187
1	OVTCS2	72004	72083	NA ·			10.0010			
3	OSVTCS	72149	72149		11 1110 07 1070		19-8260A	05-MAR-97 1932		GCMSY
,	034163	12149	16149	19-3550A	11-MAR-97 1030	RDQ	19-8270B	18-MAR-97 2132	EAY	GCMSA
SAMPL	E ID: H	WPW-MW12	3-8030					SAMPLE N	10: H4460	188
1	OVTCS2	72004	72083	NA			19-8260A	05-MAR-97 2005	1C	GCMSY
3	OSVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ	19-8270B	19-MAR-97 0303	-	GCMSA
SAMPL	E ID: H	WPW-MW12	3-5040					SAMPLE N	IO: H4460	189
1	OVTCS2	72083	72083	NA			19-8260A	07-MAR-97 1413	ıc	CCHOY
3	OSVTCS	72149	72149	19-3550A	11-MAR-97 1030	RDQ				GCMSY
3 ' <u>R</u>		72149 Literatur			11-MAR-97 1030	RDQ	19-8270в	19-MAR-97 0214	EAY	GCMSA

R Method Literature Reference

<sup>19</sup> EPA-Test Methods for Evaluating Solid Waste, 3rd ed, Nov. 1986 and updates

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LN	CODE	SURROGATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF	LI
AMPLE	ID:	WPW-MW13-S00		SAMPLE NO:	н446071	
2 :	\$VOA2S	GC/MS Volatiles Surrogates (8260)			1	
		4-Bromofluorobenzene	98			
		Dibromofluoromethane	110			
		Toluene-d8	91	-		
4 5	\$BNAS	GC/MS BNA Surrogates			3	
		2,4,6-Tribromophenol	9*	-		
		2-Fluorobiphenyl	33	-		
		2-Fluorophenol	30	-		
		Nitrobenzene-d5	33	-		
		Phenol-d5	32	-		
		p-Terphenyl-d14	33	-		
		* The recovery of the surrogate was outside of QC acceptance limits due to matrix interference.				
MPLE	ID:	WPW-MW13-S015		SAMPLE NO:	H446072	
2 :	\$VOA2S	GC/MS Volatiles Surrogates (8260)			1	
		4-Bromofiuorobenzene	97	-		
		Dibromofluoromethane	97	-		
		Toluene-d8	96			
4 5	\$BNAS	GC/MS BNA Surrogates			3	
		2,4,6-Tribromophenol	28	-		
		2-Fluorobiphenyl	32	-		
		2-Fluorophenol	28	-		
		Nitrobenzene-d5	30	-		
		Phenol-d5	30	-		
		p-Terphenyl-d14	34	-		
MPLE	ID: I	IWPW-MW13-S021		SAMPLE NO:	H446073	
2 5	\$VOA2S	GC/MS Volatiles Surrogates (8260)			1	
		4-Bromofluorobenzene	100	-		
		Dibromofluoromethane	105	-		
		Toluene-d8	93	-		
4 9	BNAS	GC/MS BNA Surrogates			3	je.
		2,4,6-Tribromophenol	28	-		
		2-Fluorobiphenyl	34			
		2-Fluorophenol	27	-		
		Nitrobenzene-d5	30	-		
		Phenol-d5	30	-		
		p-Terphenyl-d14	28			

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LN	CODE	SURROGATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF LN
SAMP	LE ID:	HWPW-MW15-s00		SAMPLE NO:	H446074
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			
		4-Bromofluorobenzene	107		1
		Dibromofluoromethane	114	-	
		Toluene-d8	93	-	
4	\$BNAS	GC/MS BNA Surrogates	93	-	7
		2,4,6-Tribromophenol	36	_	3
		2-Fluorobiphenyl	41	_	
		2-Fluorophenol	34	-	
		Nitrobenzene-d5	41	_	
		Phenol-d5	38	_	
		p-Terphenyl-d14	44		
SAMPL	E ID: I	WPW-MW15-S020		SAMPLE NO:	H446075
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			1
		4-Bromofluorobenzene	99	_	'
		Dibromofluoromethane	110		
		Toluene-d8	93	_	
4	\$BNAS	GC/MS BNA Surrogates	,,,	_	3
		2,4,6-Tribromophenol	30	_	3
		2-Fluorobiphenyl	48	-	
		2-Fluorophenol	42	_	
		Nitrobenzene-d5	42	-	
		Phenol-d5	43	-	
		p-Terphenyl-d14	43	-	
AMPLE	E ID: H	WPW-MW15-S025		SAMPLE NO:	H446076
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			
		4-Bromofluorobenzene	101		1
		Dibromofluoromethane	101	-	
		Toluene-d8			
4	\$BNAS	GC/MS BNA Surrogates	92	-	-
		2,4,6-Tribromophenol	2 ***		3
		2-Fluorobiphenyl	43		
		2-Fluorophenol	61	-	
		Nitrobenzene-d5	55	-	
		Phenol-d5	63	-	
		p-Terphenyl-d14	60	-	
		• • • • • • • • • • • • • • • • • • •	60		

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LN	CODE	SURROGATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF LN
AMPL	E ID:	HWPW-MW17-S025		SAMPLE NO:	H446077
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			_1
		4-Bromofluorobenzene	101	-	•
		Dibromofluoromethane	103	-	
		Toluene-d8	97	-	
4	\$BNAS	GC/MS BNA Surrogates			3
		2,4,6-Tribromophenol	*	-	
		2-Fluorobiphenyl	*	-	
		2-Fluorophenol	*	-	
		Nitrobenzene-d5	*	•	
		Phenol-d5	*	-	
		p-Terphenyl-d14	*	-	
		*The surrogates were not recovered due to the dilution required because of high analyte concentrations.			
AMPL	E ID: }	WPW-MW17-S030		SAMPLE NO:	H444078
2	\$V0428	GC/MS Volatiles Surrogates (8260)		oran LL NO:	
-	TONES	4-Bromofluorobenzene			1
		Dibromofluoromethane	111	•	
		Toluene-d8	115	-	
4	\$BNAS	GC/MS BNA Surrogates	94		_
•	4011710	2,4,6-Tribromophenol			3
		2-Fluorobi phenyl	*	•	
		2-Fluorophenol	*	•	
		Nitrobenzene-d5	*	-	
		Phenol-d5	*	•	
		p-Terphenyl-d14	*	-	
			*	•	
		* The surrogates were not recovered due to the dilution required because of high analyte concentrations.			
AMPLI	E ID: H	WPW-MW18-S00		SAMPLE NO:	H446079
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			-1
		4-Bromofluorobenzene	103	-	
		Dibromofluoromethane	98	-	
		Toluene-d8	97	-	
4	\$BNAS	GC/MS BNA Surrogates			3
		2,4,6-Tribromophenol	*	-	-
		2-Fluorobiphenyl	*	-	
		2-Fluorophenol	*	-	
		Nitrobenzene-d5	*	-	

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LN COD		PERCENT	ACCEPTANCE	
	SOURCE COMPOUND	RECOVERY		REF I
AMPLE ID:	HWPW-MW18-S00			• • • • • • • • • • • •
			SAMPLE NO:	H446079
	p-Terphenyl-d14			
	* The surrogates were not recovered due to the dilution required because of	*	•	
	high analyte concentrations.	)Ť		
AMPLE ID:	HWPW-MW18-S025			
			SAMPLE NO:	H446080
2 \$VOA2	S GC/MS Volatiles Surrogates (8260)			
	4-Bromofluorobenzene			. 1
	Dibromofluoromethane	97	-	
	Toluene-d8	110	-	
4 \$BNAS	GC/MS BNA Surrogates	93	-	
	2,4,6-Tribromophenol			3
	2-Fluorobiphenyl	19	-	
	2-Fluorophenol	50	-	
	Nitrobenzene-d5	41	-	
	Phenol-d5	47	-	
	p-Terphenyl-d14	49	•	
MPLE ID.	HWPW-MW18-S030	49	-	
		s	SAMPLE NO:	H446081
2 \$VOA29	GC/MS Volatiles Surrogates (8260)			
	4-Bromofluorobenzene			1
	Dibromofluoromethane	95	•	
	Toluene-d8	107	-	
4 \$BNAS	GC/MS BNA Surrogates	93	-	
	2,4,6-Tribromophenol			3
	2-Fluorobiphenyl	43	-	
	2-Fluorophenol	49	-	
	Nitrobenzene-d5	41	-	
	Phenol-d5	50	-	
	p-Terphenyl-d14	47	-	
		50	-	
PLE ID:	twpw-mw16-s00			
		SA	AMPLE NO: H	1446082
2 \$VOA2S	GC/MS Volatiles Surrogates (8260)			
	4-Bromofluorobenzene			1
	Dibromofluoromethane	102	-	
	Toluene-d8	108	-	
4 \$BNAS	GC/MS BNA Surrogates	91	-	
	2,4,6-Tribromophenol			3
	2-Fluorobiphenyl	*	-	_
	2-Fluorophenol	*	-	
	radi opticitit			

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LN CODE	SURROGATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF LN
SAMPLE ID:	HWPW-MW16-S00		SAMPLE NO:	H446082
	Nitrobenzene-d5	*	n (m)	
	Phenol-d5	*	_	
	p-Terphenyl-d14	*	· .	
	*The surrogates were not recovered due to the dilution required because of matrix interferences.			
SAMPLE ID:	HWPW-MW16-S020		SAMPLE NO:	H446083
			52 1101	
2 \$VOA2S	GC/MS Volatiles Surrogates (8260)			1
	4-Bromofluorobenzene	97	-	
	Dibromofluoromethane	107	-	
	Toluene-d8	93	-	
4 \$BNAS	GC/MS BNA Surrogates			3
	2,4,6-Tribromophenol	34	-	
	2-Fluorobiphenyl	44	-	
	2-Fluorophenol	33	-	
	Nitrobenzene-d5	40	•	
	Phenoi-d5	37	-	
	p-Terphenyl-d14	44	•	
AMPLE ID: I	HWPW-MW16-S025		SAMPLE NO:	H446084
2 \$VOA2S	GC/MS Volatiles Surrogates (8260)			1
	4-Bromofluorobenzene	95	_	1
	Dibromofluoromethane	107	-	
	Toluene-d8	91	-	
4 \$BNAS	GC/MS BNA Surrogates	71	-	3
	2,4,6-Tribromophenol	50	_	3
	2-Fluorobiphenyl	69	-	
	2-Fluorophenol	60	-	
	Nitrobenzene-d5	74	-	
	Phenol-d5	65	-	
	p-Terphenyl-d14	61	-	
AMPLE ID: }	WPW-MW12A-S00		SAMPLE NO:	H446085
	GC/MS Volatiles Surrogates (8260)			
2 \$VOA25				1
2 <b>\$VOA2</b> S				
2 \$VOA2S	4-Bromofluorobenzene Dibromofluoromethane	98 109	-	

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LN CODE	SURRO	RATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF L
AMPLE ID:	HWPW-MW12A-S00			SAMPLE NO:	W444085
				SAMPLE NO.	H440005
4 \$BNAS	GC/MS BNA Surrogates				. 3
	2,4,6-Tribromophenol		34	-	
	2-Fluorobiphenyl		46	-	
	2-Fluorophenol		30	-	
	Nitrobenzene-d5		36	-	
	Phenol-d5		36	•	
	p-Terphenyl-d14		50	-	
AMPLE ID:	HWPW-MW12A-S020			SAMPLE NO:	H446086
2 \$VOA2S	GC/MS Volatiles Surrogates	(8260)			1
	4-Bromofluorobenzene		95		'
	Dibromofluoromethane		101		
	Toluene-d8		92	_	
4 \$BNAS	GC/MS BNA Surrogates		,,,		3
	2,4,6-Tribromophenol		35		J
	2-Fluorobiphenyl		40	_	
	2-Fluorophenol		28	-	
	Nitrobenzene-d5		35	_	
	Phenol-d5		36	_	
	p-Terphenyl-d14		48	•	
MPLE ID: i	HWPW-MW12A-S025			SAMPLE NO:	H446087
				SAMPLE NO.	11440007
2 \$VOA2S	GC/MS Volatiles Surrogates	(8260)			1
	4-Bromofluorobenzene		97	-	•
	Dibromofluoromethane		111	-	
	Toluene-d8		94	-	
4 \$BNAS	GC/MS BNA Surrogates		,-,		3
	2,4,6-Tribromophenol		50	-	,
	2-fluorobiphenyl		30		
	2-Fluorophenol		55		
	Nitrobenzene-d5		68		
	Phenol-d5		60	_	
	p-Terphenyl-d14		55		
	WPW-MW12B-S030			SAMPLE NO:	H446088
MPLE ID: H					
	GC/MS Volatiles Surrogates	8260)			
	GC/MS Volatiles Surrogates	8260)	404		1
	GC/MS Volatiles Surrogates 4-Bromofluorobenzene Dibromofluoromethane	8260)	101 111	-	1

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### SURROGATE STANDARD RECOVERY

LN	TEST CODE	SURROGATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF LN
SAMPI	LE ID:	HWPW-MW12B-S030		SAMPLE NO:	H446088
4	\$BNAS	GC/MS BNA Surrogates			3
		2,4,6-Tribromophenol	34		3
		2-Fluorobiphenyl	39		
		2-Fluorophenol	32		
		Nitrobenzene-d5	35		
		Phenol-d5	35		
		p-Terphenyl-d14	42		
SAMPL	LE ID:	HWPW-MW12B-S040		SAMPLE NO:	H446089
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			1
		4-Bromofluorobenzene	100		•
		Dibromofluoromethane	104		
		Toluene-d8	94		
4	\$BNAS	GC/MS BNA Surrogates	, ,		3
		2,4,6-Tribromophenol	29		3
		2-Fluorobiphenyl	39		
		2-Fluorophenol	32		
		Nitrobenzene-d5	40	-	
		Phenol-d5	37		
		p-Terphenyl-d14	38		
			20		

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### LABORATORY CONTROL SAMPLE RECOVERY

TEST CODE	DETERMINATION	LCS % RECOVERY	ACCEPTANCE LIMITS
BATCH NO:	71950		SAMPLE NO: H383013
OVTCC	92404 TOL Volgation in O. II		,
041632	8260A TCL Volatiles in Soil		
	1,1-Dichloroethene Benzene	99	•
		101	•
	Chlorobenzene Toluene	103	•
		101	-
	Trichloroethene	<b>87</b>	•
BATCH NO: 7	72004		SAMPLE NO: H383087
OVTCS2	8260A TCL Volatiles in Soil		
21.234	1,1-Dichloroethene	22	
	Benzene	98	-
	Chlorobenzene	105	•
	Toluene	105	-
	Trichloroethene	108	-
•	Truitoroethere	84	•
BATCH NO: 7	72083		SAMPLE NO: H383201
OVTCS2	8260A TCL Volatiles in Soil		
	1,1-Dichloroethene	99	20
	Benzene	104	-
	Chlorobenzene	102	-
	Toluene		•
	Trichloroethene	105	-
	The state of the s	82	•
BATCH NO: 7	2149		SAMPLE NO: H383310
OSVTCS	TCL - Semi-volatile Extractables in Soil		
	1,2,4-Trichlorobenzene		
	1,4-Dichlorobenzene	54	. <del>.</del>
	2,4-Dinitrotoluene	53	-
	2-Chlorophenol	73	-
	4-Nitrophenol	55	-
	Acenaphthene	50	-
	Pentachlorophenol	59.	-
	Phenol	65	-
		55.	-
	Pyrene	76	-
	n-Nitrosodi-n-propylamine	55	-
	p-Chloro-m-cresol	62	-

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### LABORATORY CONTROL SAMPLE RECOVERY

	,	***************************************	
TEST CODE	DETERMINATION	LCS % RECOVERY	ACCEPTANCE LIMITS
BATCH NO: 7	72161		SAMPLE NO: H383328
OVTCS2	8260A TCL Volatiles in Soil		
	1,1-Dichloroethane	100	- ·
	Benzene	104	, <b>-</b>
	Chlorobenzene	102	•
	Toluene	104	-
	Trichloroethene	86	-

Tel: 713-488-1810 Fax: 713-488-4661

April 07, 1997
Report No.: 00060264
Section E Page 1

### METHOD BLANK DATA

TEST	DETERMINATION	DECLU T	LIMET
	DETERMINATION	RESULT	UNIT
CH NO:	71950		SAMPLE NO: H38301
OVTCS2	8260A TCL Volatiles in Soil		
011002	1,1,1,2-Tetrachloroethane	·	
	1,1,1-Trichloroethane	< 5	ug/kg
	1,1,2,2-Tetrachloroethane	< 5	ug/kg
	1,1,2-Trichloroethane	< 5	ug/kg
	1,1-Dichloroethane	< 5	ug/kg
	1,1-Dichloroethene	< 5	ug/kg
	1,1-Dichloropropene	< 5	ug/kg
	1,2,3-Trichlorobenzene	< 5	ug/kg
	1,2,3-Trichloropropane	< 5	ug/kg
	1,2,4-Trichlorobenzene	< 5	ug/kg
	1,2,4-Trimethylbenzene	< 5	ug/kg
	1,2-Dibromo-3-chloropropane	< 5	ug/kg
	1,2-Dibromoethane	. < 5	ug/kg
	1,2-Dichlorobenzene	< 5	ug/kg
	1,2-Dichloroethane	< 5	ug/kg
	1,2-Dichloropropane	< 5	ug/kg
	1,3,5-Trimethylbenzene	< 5	ug/kg
	1,3-Dichlorobenzene	< 5	ug/kg
	1,3-Dichloropropane	< 5	ug/kg
	1,4-Dichlorobenzene	< 5	ug/kg
		< 5	ug/kg
	2,2-Dichloropropane 2-Chlorotoluene	< 5	ug/kg
		< 5	ug/kg
	4-Chlorotoluene	< 5	ug/kg
	Acetone	< 10	ug/kg
	Benzene	< 5	ug/kg
	Bromobenzene	< 5	ug/kg
	Bromochloromethane	< 5	ug/kg
	Bromodichloromethane	< 5	ug/kg
	Bromoform	< 5	ug/kg
	Bromomethane	< 10	ug/kg
	Carbon tetrachloride	< 5	ug/kg
	Chlorobenzene	< 5	ug/kg
	Chlorodibromomethane	< 5	ug/kg
	Chloroethane	< 10	ug/kg
	Chloroform	< 5	ug/kg
	Chloromethane	< 10	ug/kg
	Dibromomethane	< 5	ug/kg
	Dichlorodifluoromethane	< 5	ug/kg
	Ethylbenzene	< 5	ug/kg
	Hexachlorobutadiene	< 5	ug/kg
	Isopropylbenzene	< 5	ug/kg

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### METHOD BLANK DATA

TEST				
CODE	DETERMINATION	RESULT	UNIT	
				• • • • • • • • • • • • • • • • • • • •
	Methylene chloride	< 5	ug/kg	
	Naphthalene	< 10	ug/kg	
	Styrene	< 5	ug/kg	
	Tetrachloroethene	< 5	ug/kg	
	Toluene	< 5	ug/kg	
	Trichloroethene	< 5	ug/kg	
	Trichlorofluoromethane	< 5	ug/kg	
	Vinyl chloride	< 10	_	
	Xylenes (total)	< 5	ug/kg	
	cis-1,2-Dichloroethene	< 5	ug/kg	
	m-Xylene	< 5	ug/kg	
	n-Butyl benzene	< 5	ug/kg	
	n-Propylbenzene	< 5	ug/kg	
	o-Xylene	< 5	ug/kg	
	p-Isopropyltoluene	< 5	ug/kg	
	p-Xylene		ug/kg	
	sec-Butyl benzene	< 5	ug/kg	
	tert-Butylbenzene	< 5	ug/kg	
	trans-1,2-Dichloroethene	< 5	ug/kg	
TCU NO.	7700/	< 5	ug/kg	
ATCH NO: 7	72004	SAI	MPLE NO:	H383088
OVTCS2	8260A TCL Volatiles in Soil			
	1,2-Dichloroethane	-	1007	
	Benzene	< 5	ug/kg	
	Chlorobenzene	< 5	ug/kg	
	Ethylbenzene	< 5	ug/kg	
	Methylene chloride	< 5	ug/kg	
	Toluene	< 5	ug/kg	
	Xylenes (total)	< 5	ug/kg	
		< 5	ug/kg	
ATCH NO: 7	2083	SAM	IPLE NO:	H383202
OVTCS2	8260A TCL Volatiles in Soil		3. 30000 - 0.00 <del>-0</del>	
	1,2-Dichloroethane			
	Benzene		ug/kg	
	Chlorobenzene	< 5	ug/kg	
	Ethylbenzene	< 5	ug/kg	
	Methylene chloride	< 5	ug/kg	
	Toluene	< 5	ug/kg	
	Xylenes (total)	< 5	ug/kg	
		< 5	ug/kg	

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Section E Page 3

### METHOD BLANK DATA

				••••••	
	TEST				
	CODE	DETERMINATION	RESULT	UNIT	
BATCH !	NO: 7	2149		SAMPLE NO:	H383311
09	SVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	< 330	ug/kg	
		2,4-Dimethylphenol	< 330	ug/kg	
		2,4-Dinitrotoluene	< 330	ug/kg	
		2,6-Dinitrotoluene	< 330	ug/kg	
		2-Chloronaphthalene	< 330	ug/kg	
		2-Methylnaphthalene	< 330	ug/kg	
		4,6-Dinitro-o-cresol	< 1,600	ug/kg	
		4-Nitrophenol	< 1,600	ug/kg	
		Acenaphthene	< 330	ug/kg	
		Acenaphthylene	< 330	ug/kg	
		Anthracene	< 330	ug/kg	
		Benzo(a)anthracene	< 330	ug/kg	
}.		Benzo(a)pyrene	< 330	ug/kg	
		Chrysene	< 330	ug/kg	
		Di-n-butyl phthalate	< 330	ug/kg	
		Dibenzofuran	< 330	ug/kg	
		Fluoranthene	< 330	ug/kg	
		Fluorene	< 330	ug/kg	
		N-Nitrosodiphenylamine	< 330	ug/kg	
		Naph tha lene	< 330	ug/kg	
		Nitrobenzene	< 330	ug/kg	
		Pentachlorophenol	< 1,600	ug/kg	
		Phenanthrene	< 330	ug/kg	
		Phenol	< 330	ug/kg	
		Pyrene	< 330	ug/kg	
		bis(2-Chloroethoxy)methane	< 330	ug/kg	
		bis(2-Ethylhexyl)phthalate	< 330	ug/kg	
BATCH N	10: 7	2161		SAMPLE NO:	н383329
OV	/TC92	8260A TCL Volatiles in Soil			
34	, 002	1,2-Dichloroethane	< 5		
		Benzene		ug/kg	
		Chlorobenzene	< 5	ug/kg	
		Ethylbenzene	< 5	ug/kg	
			< 5	ug/kg	
		Methylene chloride Toluene	< 5	ug/kg	
			< 5	ug/kg	
		Xylenes (total)	< 5	ug/kg	

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### MATRIX SPIKE AND MATRIX SPIKE DUPLICATE DATA

TEST	DETERMINATION	MS RESULT	MSD RESULT	UNITS	RPD	MS PCT RCVRY	MSD PCT RCVRY
BATCH NO: 7	72083				SAM	PLE NO: H446	089
OVTCS2	8260A TCL Volatiles in Soil 1,1-Dichloroethene Benzene Chlorobenzene Toluene Trichloroethene	42.9 43.4 41.1 44.3 38.7	43.9 43.0 41.0 43.5 38.3	ug/kg ug/kg ug/kg ug/kg ug/kg	2.37 1.02 0.12 1.73 1.06	107 108 103 111 97	110 107 102 109 96
10.5 GARAGERIA (10.715/10.4%) 4-	72149				SAM	PLE NO: H4460	083
OSVTCS	TCL - Semi-volatile Extractables 1,2,4-Trichlorobenzene 1,4-Dichlorobenzene 2,4-Dinitrotoluene 2-Chlorophenol 4-Nitrophenol Acenaphthene N-Nitrosodi-n-propylamine Pentachlorophenol Phenol Pyrene p-Chloro-m-cresol * Recovery outside of QC acceptance	38.0* 47.4 46.1 67.6 67.1 43.8* 33.2 70.9 70.7 50.4*	43.6 45.3 48.0 60.1 64.0 42.4* 29.2 66.9 73.4 46.6* 91.6	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	13.7 4.52 4.03 11.8 4.72 3.25 12.8 5.81 3.74 7.84 4.92	38 47 46 34 34 44 33 36 36 50	44 45 48 30 32 42 29 34 37 47

	<b>PROJECT NAME</b>	SITELOCA	The state of the s			
[erronext	Houston	4910 Liberty Rd	ut Rel	CHAIN OF CUSTODY RECORD	ODY RECORD	2-27-67-1
	Wood	/touston				C.O.C. #
303/914-1700	Works	PROJECT#102069.07		//// Oct	SINI	SHIP TO:
SAMPLERS NAME & SIGNATURE BILL GOLDSBY / Bill Goldsby		CONTACT & PHONE (713)460. 4720	IONE	HIMA	Z V V V Z	ו ארב אייארו אייאר
}	- AMO	SAMPLE	# OF	0000	LSN3	LAB. CONTACT & PHONE E. Somméco 4/28-1810
	00	LUCATION		\dom\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \	YES NO YES NO	*REMARKS:
HWPW.MW13.500	1/29/10:00	MW13	× +		×	1-10-10-10-1
HW PW. MW13.5019	10:32					(C)
14WPW-MW13.5021	10:34	>				(3)
HWPW-MW15.500	13:30	MW15				70
14WPW-MW15-5020	13:45					515
- HUPW-MW15-5025	13:47	$\rightarrow$				900
HWPW-MW17.5025	16:22	MWIT				May have O)
HWPW-MMIT-SOMO	04:71	<i>&gt;</i>				8(.0)
14WPW-MW18-500	12497 10:10	MWIB				00
KNUPW. MW18-5025	26:01					
HWPW-MW18-5030	10:50	->	<i>J</i>			() ()
14WPW-MW16.500	13:55	MW16				(SO)
HWPW MWIG. SO 250	14:15					C83
HWPW-MW/B-S625	V 14:20 V	<b>&gt;</b>	<i>\ ∧</i>			う か り
RELINGUISHED BY (Signature)	727/97 17:20 ( LAC.	har	RELEA SED BY	DATE & TIME RECEIVED BY	*REMARKS:	S:
	DATE & TIME RECEIVED BY		RELEASED BY	DATE & TIME RECEIVED BY		
RELINQUISHED BY (Signature)	DATE & TIME RECEIVED AT LAB. BY		METHOD OF SHIPMENT			

Terranext	HOUSTON WOOD	SITELOCATIC 4910 CIBEETY Haustal, TX	z z z	CHAIN	CHAIN OF CUSTODY RECORD	DY RECORD	1
303/914-1700		PROJECT # 4402069.07		00/55		SAN	SHIP TO:
SAMPLERS NAME & SIGNATURE BILL COUDSBY   Bill (Illabry)	alin	CONTACT & PHONE (713)460. 4780	VE VE	CHIMA		ZS 100	/ NOR CASH CALLORE
	DATE TIME COMP.	SAMPLE	)F INERS	01/00/00		VES NO YES NO YES	LAB. CONTACT & PHONE L. SANNELS 488-1810 **RENARKS:
HWPW-MW12A. SOO	1/2/2 08:08	MWIZA	7	X		X	FILIUPUSS
HWPW - MWIZA - SOZO	08:30			,			300
HWPW.MWIZA . 5025	<i>\$</i> 5:80	>					( <del>(</del> <del>(</del> <del>(</del> <del>(</del> <del>(</del> <del>(</del> <del>(</del> <del>(</del> <del>(</del> <del>(</del>
HWPW. MWIZB.5030	52:01	MWIZB					920
HWM. MW 1213-5040	V 10:53 V	>	<u>→</u>	<u> </u>			520
	2				lgst web	9	
55							-
•							
-							
						~	
RELINOUISHED BY (Signature)	2279-4:2 (1)	Mar	RELEASED BY	DATE & TIME	RECEIVED BY	*REMARKS:	S:
TELIMOUISHED BY (Signature)	PATE & TIME RECEIVED BY	X	RELEASED BY	DATE & TIME	RECEIVED BY	T :	
RELINDUISHED BY IS	DATE & TIME RECEIVED AT LAB. BY	ATLAB. BY METHO	HO HIPMENT	NT		<del></del>	



> Tel: 713-488-1810 Fax: 713-488-4661

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW14-S017

SAMPLE NO: H446213

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082
PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 27-FEB-97 1428

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST				•••••
LN	CODE	DETERMINATION	DILUTION		
		DETERMINATION	FACTOR	RESULT	UNITS
			**********		
1	OVTCS2	11 0016			
		1,2-Dichloroethane		_	
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	-0,
		Xylenes (total)	1	< 5	0
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	1	< 5	ug/kg
		1,2-Diphenylhydrazine	-		
		2,4-Dimethylphenol	5	< 1,600	ug/kg
		2,4-Dinitrotoluene	5	< 1,600	ug/kg
		2,6-Dinitrotoluene	5	< 1,600	ug/kg
		2-Chloronaphthalene	5	< 1,600	ug/kg
		2-Methylnaphthalene	5 5	< 1,600	ug/kg
		4,6-Dinitro-o-cresol	5	16,000	ug/kg
		4-Nitrophenol	5	< 8,200	ug/kg
		Acenaphthene	5	< 8,200	ug/kg
		Acenaphthylene	5	9,900	ug/kg
		Anthracene	. 5	< 1,600	ug/kg
		Benzo(a)anthracene	5	< 1,600	ug/kg
		Benzo(a)pyrene	5	< 1,600	ug/kg
		Chrysene	5	< 1,600	ug/kg
		Di-n-butyl phthalate	5	< 1,600	ug/kg
		Dibenzofuran	5	< 1,600	ug/kg
		Fluoranthene	5	7,800	ug/kg
		Fluorene	5	< 1,600	ug/kg
		N-Nitrosodiphenylamine	5		ug/kg
		Naphthalene	5		ug/kg
		Nitrobenzene	5		ug/kg
		Pentachlorophenol	5		ug/kg
		Phenanthrene	5		ug/kg
		Phenol	5		ug/kg
		Pyrene	5	< 1,600	
		bis(2-Chloroethoxy)methane	5		ug/kg
			5	< 1,600	ug/kg

> Tel: 713-488-1810 Fax: 713-488-4661

April 08, 1997 Report No.: 00060278 Section A Page 2

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW14-S017

SAMPLE NO: H446213

TEST DILUTION
LN CODE DETERMINATION FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate

5 < 1,600 ug/kg

COMMENTS: The detection limits reported for semi-volatiles were elevated due to the dilution required because of the high concentration of target analytes.

Tel: 713-488-1810 Fax: 713-488-4661

April 08, 1997 Report No.: 00060278 Section A Page 3

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW14-S035

SAMPLE MATRIX: SOIL

SAMPLE NO: H446214

LIMS CLIENT: 0717 0007 PACE PROJECT: H44082 PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 27-FEB-97 1500

DATE RECEIVED: 04-MAR-97 PROJECT MANAGER: Elessa Sommers

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	- 1	< 5	ug/kg
-		Xylenes (total)	1		ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			-3, 113
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Nitrobenzene	1	< 330	ug/kg
		Pentachlorophenol	1	< 1,600	ug/kg
		Phenanthrene	1	< 330	ug/kg
		Phenol	1	< 330	ug/kg
		Pyrene	1	< 330	ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg

> Tel: 713-488-1810 Fax: 713-488-4661

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW14-S035

SAMPLE NO: H446214

TEST DILUTION

LN CODE DETERMINATION FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate

1 < 330 ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-MW14-S040

SAMPLE NO: H446215

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 27-FEB-97 1510

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
·	011002	1,2-Dichloroethane	1	< 5	um flem
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg ug/kg
		Ethylbenzene	1	< 5	ug/kg ug/kg
		Methylene chloride	· i	< 5	ug/kg
		Toluene	1	< 5	ug/kg
		Xylenes (total)	i	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	*	` ,	ug/ kg
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	i	< 330	ug/kg
		2,6-Dinitrotoluene	i	< 330	ug/kg
		2-Chloronaphthalene	i	< 330	ug/kg
		2-Methylnaphthalene	i	< 330	ug/kg
		4,6-Dinitro-o-cresol	i	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	i	< 330	ug/kg
		Acenaphthylene	i	< 330	ug/kg
		Anthracene	i	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1 .	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Nitrobenzene	1	< 330	ug/kg
		Pentachlorophenol	1	< 1,600	ug/kg
		Phenanthrene	1	< 330	ug/kg
		Phenol	1	< 330	ug/kg
		Pyrene	1	< 330	ug/kg
		bis(2-Chloroethoxy)methane	1	< 330	ug/kg
					3,

Pace Analytical Services, Inc. 900 Gemini Avenue Houston, TX 77058

> Tel: 713-488-1810 Fax: 713-488-4661

April 08, 1997 Report No.: 00060278 Section A Page 6

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW14-S040

SAMPLE NO: H446215

TEST DILUTION
LN CODE DETERMINATION FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

Tel: 713-488-1810 Fax: 713-488-4661

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-AOC4-SE-SOO

**SAMPLE NO: H446216** 

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 03-MAR-97 1110

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

	• • • • • • • • • • • • • • • • • • • •				
	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
•	041032	1,2-Dichloroethane			
		Benzene	1	< 5	
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	· < 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
		Xylenes (total)	1	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	1	< 5	ug/kg
•	001100	1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	2	< 660	ug/kg
		2,4-Dinitrotoluene	2	< 660	ug/kg
		2,6-Dinitrotoluene	2	< 660	ug/kg
		2-Chloronaphthalene	2	< 660	ug/kg
		2-Methylnaphthalene	. 2	< 660	ug/kg
		4,6-Dinitro-o-cresol	2	< 660	ug/kg
		4-Nitrophenol	2	< 3,200	ug/kg
		Acenaphthene	2	< 3,200	ug/kg
		Acenaphthylene	2	< 660	ug/kg
		Anthracene	2	< 660	ug/kg
		Benzo(a)anthracene	2	< 660	ug/kg
			2	< 660	ug/kg
		Benzo(a)pyrene	2	< 660	ug/kg
		Chrysene	2	920	ug/kg
		Di-n-butyl phthalate Dibenzofuran	2	< 660	ug/kg
		Fluoranthene	2	< 660	ug/kg
		Fluorene	2	2,800	ug/kg
		N-Nitrosodiphenylamine	2	< 660	ug/kg
		Naphthalene	2	< 660	ug/kg
		Nitrobenzene	2	< 660	ug/kg
		Pentachlorophenol	2	< 660	ug/kg
		Phenanthrene	2	< 3,200	ug/kg
		Phenol	2	1,100	ug/kg
		Pyrene	2	< 660	ug/kg
		• 50.55	2	3,600	ug/kg
		bis(2-Chloroethoxy)methane	2	< 660	ug/kg

### 53 REPORT OF LABORATORY ANALYSIS

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April 08, 1997 Report No.: 00060278 Section A Page 8

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-AOC4-SE-SOO

**SAMPLE NO: H446216** 

TEST DILUTION

LN CODE DETERMINATION FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate

2 < 660 ug/kg

COMMENTS: The detection limits reported for semi-volatiles were elevated due to the dilution required because of the high concentration of target analytes.

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-AOC4-SW-SOO

SAMPLE NO: H446217

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 03-MAR-97 1130

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST				
LN	CODE	DETERMINATION	DILUTION		
		DETERMINATION	FACTOR	RESULT	UNITS
			,		••••••
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	
		Benzene	1	< 5	0, 10
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	
		Toluene	1	< 5	0. 0
		Xylenes (total)	i	< 5	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	'	``	ug/kg
		1,2-Diphenylhydrazine	1	< 330	rem flom
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	i .	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	i	< 330	ug/kg
		2-Methylnaphthalene	. 1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1		ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 1,600	ug/kg
		Acenaphthylene	, 1 1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330 < 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg ug/kg
		Fluoranthene	i	< 330	
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg ug/kg
		Naphthalene	1	< 330	
		Nitrobenzene	1	< 330	ug/kg
		Pentachlorophenol	1		ug/kg
		Phenanthrene	1	< 1,600	ug/kg
		Phenol	1	< 330	ug/kg
		Pyrene	1	< 330 < 330	ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
			1	< 330	ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-AOC4-SW-SOO

SAMPLE NO: H446217

TEST LN CODE

DETERMINATION

DILUTION

1

RESULT UNITS

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-AOC4-NE-SOO

SAMPLE NO: H446218

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 03-MAR-97 1150

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
	0.7500	20/04 704 14 14 14 14 14 14 14 14 14 14 14 14 14			
1	OVTCS2	The state of the s			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
7	001/200	Xylenes (total)	1	< 5	ug/kg
. 3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Nitrobenzene	1	< 330	ug/kg
		Pentachlorophenol	1	< 1,600	ug/kg
		Phenanthrene	1	< 330	ug/kg
		Phenol	1		ug/kg
		Pyrene	1		ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
			-	. 220	-3/ ~3

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-AOC4-NE-SOO

**SAMPLE NO: H446218** 

TEST

CODE

LN

DETERMINATION

RESULT UNITS

bis(2-Ethylhexyl)phthalate

< 330 ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-AOC4-NW-SOO

SAMPLE NO: H446219

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 03-MAR-97 1209

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST				
LN	CODE	DETERMINATION	DILUTION		
		DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	um /lem
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg ug/kg
		Ethylbenzene	1	< 5	
		Methylene chloride	i	< 5	
		Toluene	i	< 5	-0,
		Xylenes (total)	i	< 5	•
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	•	` `	ug/kg
		1,2-Diphenylhydrazine	2	< 660	um /lem
		2,4-Dimethylphenol	2	< 660	ug/kg
		2,4-Dinitrotoluene	2	< 660	ug/kg
		2,6-Dinitrotoluene	2	< 660	ug/kg
		2-Chloronaphthalene	2	< 660	ug/kg ug/kg
		2-Methylnaphthalene	2	< 660	
		4,6-Dinitro-o-cresol	2	< 3,300	ug/kg ug/kg
		4-Nitrophenol	2	< 3,300	
		Acenaphthene	2	< 660	ug/kg ug/kg
		Acenaphthylene	2	< 660	ug/kg ug/kg
		Anthracene	2	< 660	
		Benzo(a)anthracene	2	< 660	ug/kg ug/kg
		Benzo(a)pyrene	2	< 660	ug/kg
		Chrysene	2	< 660	ug/kg
		Di-n-butyl phthalate	2	< 660	ug/kg ug/kg
		Dibenzofuran	2	< 660	ug/kg
		Fluoranthene	2	< 660	ug/kg
		Fluorene	2	< 660	ug/kg
		N-Nitrosodiphenylamine	2	< 660	ug/kg
		Naphthalene	2	< 660	ug/kg
		Nitrobenzene	2	< 660	ug/kg
		Pentachlorophenol	2	< 3,300	ug/kg
		Phenanthrene	2	< 660	ug/kg
		Phenol	2	< 660	ug/kg
		Pyrene	2	< 660	ug/kg
		bis(2-Chloroethoxy)methane	2	< 660	ug/kg ug/kg
			-	- 000	ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-AOC4-NW-SOO

SAMPLE NO: H446219

TEST DILUTION

LN CODE DETERMINATION FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate

2 < 660 ug/kg

COMMENTS: The detection limits reported for semi-volatiles were elevated due to the

dilution required because of matrix interferences.

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LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-AOC7-S00

DATE SAMPLED: 03-MAR-97 1335 SAMPLE NO: H446220 DATE RECEIVED: -04-MAR-97 SAMPLE MATRIX: SOIL PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
• • • • •					
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	7	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	46	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	11	ug/kg
		Xylenes (total)	1	82	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	500	< 165,000	ug/kg
		2,4-Dimethylphenol	500	< 165,000	ug/kg
		2,4-Dinitrotoluene	500	< 165,000	ug/kg
		2,6-Dinitrotoluene	500	< 165,000	ug/kg
		2-Chloronaphthalene	500	< 165,000	ug/kg
		2-Methylnaphthalene	500	< 165,000	ug/kg
		4,6-Dinitro-o-cresol	500	< 820,000	ug/kg
		4-Nitrophenol	500	< 820,000	ug/kg
		Acenaphthene	500	270,000	ug/kg
		Acenaphthylene	500	< 165,000	ug/kg
		Anthracene	500	460,000	ug/kg
		Benzo(a)anthracene	500	220,000	ug/kg
		Benzo(a)pyrene	500	< 165,000	ug/kg
		Chrysene	500	210,000	ug/kg
		Di-n-butyl phthalate	500	< 165,000	ug/kg
		Dibenzofuran	500	190,000	ug/kg
		Fluoranthene	500	1,100,000	ug/kg
		Fluorene	500	330,000	ug/kg
		N-Nitrosodiphenylamine	500	< 165,000	ug/kg
		Naphthalene	500	220,000	ug/kg
		Nitrobenzene	500	< 165,000	ug/kg
		Pentachlorophenol	500	< 820,000	ug/kg
		Phenanthrene	500	950,000	ug/kg
		Phenol	500	< 165,000	ug/kg
		Pyrene	500	880,000	ug/kg
		bis(2-Chloroethoxy)methane	500	< 165,000	ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-AOC7-S00
SAMPLE NO: H446220

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
5	16858	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	500 50		ug/kg mg/kg

COMMENTS: The detection limits reported for semi-volatiles were elevated due to the dilution required because of the high concentration of target analytes.

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB02-S7

SAMPLE NO: H446221

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 03-MAR-97 1430

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	IINITS
			*****************		
1	OVTCS2				
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	
		Ethylbenzene	1	< 5	
		Methylene chloride	1	< 5	0. 0
		Toluene	1	< 5	ug/kg
		Xylenes (total)	1	< 5	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	·	` ,	ug/kg
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	· 1	< 330	ug/kg ug/kg
		2,4-Dinitrotoluene	1	< 330	
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1		ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 1,600	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	-	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Nitrobenzene	1	< 330	ug/kg
		Pentachlorophenol	1	< 330	ug/kg
		Phenanthrene	1		ug/kg
		Phenol	1		ug/kg
		Pyrene	1		ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
			1	< 330	ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB02-S7
SAMPLE NO: H446221

••••					
LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
10	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	1	< 330 20	ug/kg mg/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB02-S21

SAMPLE NO: H446222

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437 P.O. NO: 03219

DATE SAMPLED: 03-MAR-97 1440

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	LINITE
			IACION	KESULI	ON112
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
_		Xylenes (total)	1	< 5	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			-37 (3
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	. 1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	- 1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Nitrobenzene	1		ug/kg
		Pentachlorophenol	1		ug/kg
		Phenanthrene	1	-	ug/kg
		Phenol	1		ug/kg
		Pyrene	1		ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
					3,

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB02-S21
SAMPLE NO: H446222

TEST DILUTION LN CODE DETERMINATION FACTOR RE	-01117	
	ESULT	UNITS
bis(2-Ethylhexyl)phthalate 1 < 5 I685S Petroleum Hydrocarbons 1	< 330 70	ug/kg mg/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB02-S24

SAMPLE NO: H446223

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 03-MAR-97 1445

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
		***************************************			
1	OVTCS2	8260A TCL Volatiles in Soil			
•	011002	1,2-Dichloroethane	_	_	
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
		Xylenes (total)	1		ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	1	< 5	ug/kg
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene ·	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Nitrobenzene	1	< 330	ug/kg
		Pentachlorophenol	1	< 1,600	ug/kg
		Phenanthrene	1	< 330	ug/kg
		Phenol	1	< 330	ug/kg
		Pyrene	1	< 330	ug/kg
		bis(2-Chloroethoxy)methane	- 1	< 330	ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB02-S24
SAMPLE NO: H446223

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
5	16858	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	1 1	< 330 < 20	ug/kg mg/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB02-S37.5

SAMPLE NO: H446224

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 03-MAR-97 1500

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

				*	
	TEST		DILUTION		*****
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	8	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
_		Xylenes (total)	1	5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	1,400	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	
		Acenaphthene	1	2,100	
		Acenaphthylene	. 1	< 330	ug/kg
		Anthracene	1	1,400	ug/kg
		Benzo(a)anthracene	1	400	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	, 1	400	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	1,700	ug/kg
		Fluoranthene	1	2,800	ug/kg
		Fluorene	1	1,900	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1		
		Nitrobenzene	1		ug/kg
		Pentachlorophenol	1	< 1,600	ug/kg
		Phenanthrene	2	8,600	ug/kg
		Phenol	1	< 330	ug/kg
		Pyrene	1	1,200	ug/kg
		bis(2-Chloroethoxy)methane	1	< 330	ug/kg

# REPORT OF LABORATORY ANALYSIS

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-SB02-S37.5

SAMPLE NO: H446224

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
		bis(2-Ethylhexyl)phthalate	1		ug/kg
5	1685s	Petroleum Hydrocarbons	1	< 20	mg/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB02-S38.5

SAMPLE NO: H446225 SAMPLE MATRIX: SOIL PACE PROJECT: H44082
PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 03-MAR-97 1505

DATE RECEIVED: 04-MAR-97
PROJECT MANAGER: Elessa Sommers

TEST DILUTION CODE LN DETERMINATION **FACTOR** RESULT UNITS 1 OVTCS2 8260A TCL Volatiles in Soil 1,2-Dichloroethane < 5 ug/kg Benzene < 5 ug/kg Chlorobenzene 1 < 5 ug/kg Ethylbenzene 1 7 ug/kg Methylene chloride 1 < 5 ug/kg Toluene 1 < 5 ug/kg Xylenes (total) 6 ug/kg 3 OSVTCS TCL - Semi-volatile Extractables in Soil 1,2-Diphenylhydrazine 1 < 330 ug/kg 2,4-Dimethylphenol < 330 ug/kg 1 2,4-Dinitrotoluene 1 < 330 ug/kg 2,6-Dinitrotoluene < 330 ug/kg 2-Chloronaphthalene 1 < 330 ug/kg 2-Methylnaphthalene 1 590 ug/kg 4,6-Dinitro-o-cresol < 1,600 ug/kg 4-Nitrophenol < 1,600 ug/kg Acenaphthene 3,100 ug/kg Acenaphthylene < 330 ug/kg Anthracene 2,000 ug/kg Benzo(a)anthracene 560 ug/kg Benzo(a)pyrene < 330 ug/kg 1 Chrysene 530 ug/kg 1 Di-n-butyl phthalate < 330 1 ug/kg Dibenzofuran 2,600 ug/kg Fluoranthene 4,000 ug/kg Fluorene 1 3,100 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 10 12,000 ug/kg Nitrobenzene 1 < 330 ug/kg Pentachlorophenol < 1,600 ug/kg Phenanthrene 10 17,000 ug/kg Phenol < 330 1 ug/kg Pyrene 1 1,800 ug/kg bis(2-Chloroethoxy)methane < 330 ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB02-S38.5

SAMPLE NO: H446225

		***************************************			
LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
5	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	1	< 330 130	ug/kg mg/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE NO: H446226

SAMPLE MATRIX: SOIL

SAMPLE ID: HWPW-SB02-S49

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 03-MAR-97 1525

PROJECT MANAGER: Elessa Sommers

DATE RECEIVED: 04-MAR-97

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
•		1,2-Dichloroethane	1		
		Benzene	1	< 5 < 5	ug/kg
		Chlorobenzene	1		ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5 < 5	ug/kg
		Toluene	1		ug/kg
		Xylenes (total)	1	< 5 < 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	'	` ' '	ug/kg
		1,2-Diphenylhydrazine	1	< 330	ua/ka
		2,4-Dimethylphenol	1	< 330	ug/kg ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	. 1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	i	< 330	ug/kg
		Benzo(a)pyrene	<u>i</u>	< 330	ug/kg
		Chrysene	· i	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Nitrobenzene	1	< 330	ug/kg
		Pentachlorophenol	1	< 1,600	ug/kg
		Phenanthrene	1	< 330	ug/kg
		Phenol	1	< 330	ug/kg
		Pyrene	1	< 330	ug/kg
		bis(2-Chloroethoxy)methane	1	< 330	ug/kg
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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB02-S49
SAMPLE NO: H446226

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
_		bis(2-Ethylhexyl)phthalate	1	< 330	ug/kg
5	16858	Petroleum Hydrocarbons	1	< 20	mg/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-AOC3W-SOO

SAMPLE NO: H446227

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 04-MAR-97 0825

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	LIMITS
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
		Xylenes (total)	. 1	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	10	< 3,300	ug/kg
		2,4-Dimethylphenol	10	< 3,300	ug/kg
		2,4-Dinitrotoluene	10	< 3,300	ug/kg
		2,6-Dinitrotoluene	10	< 3,300	ug/kg
		2-Chloronaphthalene	10	< 3,300	ug/kg
		2-Methylnaphthalene	10	5,000	ug/kg
		4,6-Dinitro-o-cresol	10	< 16,000	ug/kg
		4-Nitrophenol	10	< 16,000	ug/kg
		Acenaphthene	10	8,800	ug/kg
		Acenaphthylene	10	< 3,300	ug/kg
		Anthracene	10	8.600	ug/kg
		Benzo(a)anthracene	10	3,600	ug/kg
		Benzo(a)pyrene	10	< 3,300	ug/kg
		Chrysene	10	3,500	ug/kg
		Di-n-butyl phthalate	10	< 3,300	ug/kg
		Dibenzofuran	10	6,700	ug/kg
		Fluoranthene	10	20,000	ug/kg
		Fluorene	10	12,000	ug/kg
		N-Nitrosodiphenylamine	10	< 3,300	ug/kg
		Naphthalene	10	< 3,300	ug/kg
		Nitrobenzene	10	< 3,300	ug/kg
		Pentachlorophenol	10	< 16,000	ug/kg
		Phenanthrene	10	36,000	ug/kg
		Phenol	10	< 3,300	ug/kg
		Pyrene	10	13,000	ug/kg
		bis(2-Chloroethoxy)methane	10	< 3,300	ug/kg
		a to the second		. 3,300	-a, va

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-AOC3W-S00

**SAMPLE NO: H446227** 

TEST DILUTION
LN CODE DETERMINATION FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate

10 < 3,300 ug/kg

COMMENTS: The detection limits reported for semi-volatiles were elevated due to the dilution required because of the high concentration of target analytes.

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-AOC3E-S00

SAMPLE NO: H446228

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 04-MAR-97 0843

DATE RECEIVED: 04-MAR-97
PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
	0.7200	22/21 22/ 11/11/11/11/11/11/11/11/11/11/11/11/11			
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene Shi anahanana	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
3	OSVTCS	Xylenes (total)	1	< 5	ug/kg
3	USVICS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	_ 1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Ni trobenzene	1	< 330	ug/kg
		Pentachlorophenol  Phonocology	1	< 1,600	ug/kg
		Phenanthrene	1	< 330	ug/kg
		Phenol	1	< 330	ug/kg
		Pyrene	1	< 330	ug/kg
		bis(2-Chloroethoxy)methane	1	< 330	ug/kg

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< 330 ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-AOC3E-SOO

SAMPLE NO: H446228

TEST DILUTION LN CODE **FACTOR** RESULT UNITS bis(2-Ethylhexyl)phthalate

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### LABORATORY ANALYSIS REPORT

CLIENT NAME:	TERRANEXT		LIMS CLIE	ENT:	0717 0007
ADDRESS:	6200 ROTHWAY, STE 190		PACE PROJE	ECT:	H44082
	HOUSTON, TX 77040-	•	PACE CLIE	ENT:	620437
ATTENTION:	BILL GOLDSBY		P.O.	NO:	03219

SAMPLE ID:	HWPW-AOC5W-S00	DATE SAMPLED:	04-MAR-97 0928
SAMPLE NO:	H446229	DATE RECEIVED:	04-MAR-97
SAMPLE MATRIX:	SOIL	PROJECT MANAGER: I	Elessa Sommers

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
•	041032	1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	20	ug/kg ug/kg
		Chlorobenzene	1	< 5	ug/kg ug/kg
		Ethylbenzene	125	6,100	ug/kg
		Methylene chloride	123	< 5	ug/kg ug/kg
		Toluene	1	85	ug/kg
		Xylenes (total)	125	26,000	ug/kg
3	OSVTCS	• 0 20 (0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	123	20,000	ug/ kg
_		1,2-Diphenylhydrazine	10	< 3,300	ug/kg
	0	2,4-Dimethylphenol	10	< 3,300	ug/kg
		2,4-Dinitrotoluene	10	< 3,300	ug/kg
		2,6-Dinitrotoluene	10	< 3,300	ug/kg
		2-Chloronaphthalene	10	< 3,300	ug/kg
		2-Methylnaphthalene	10	9,200	ug/kg
		4,6-Dinitro-o-cresol	10	< 16,000	ug/kg
		4-Nitrophenol	10	< 16,000	ug/kg
		Acenaphthene	10	4,300	ug/kg
		Acenaphthylene	10	< 3,300	ug/kg
		Anthracene	10	< 3,300	ug/kg
		Benzo(a)anthracene	10	< 3,300	ug/kg
		Benzo(a)pyrene	10	< 3,300	ug/kg
		Chrysene	10	< 3,300	ug/kg
		Di-n-butyl phthalate	10	< 3,300	ug/kg
		Dibenzofuran	10	< 3,300	ug/kg
		Fluoranthene	10	5,300	ug/kg
		Fluorene	10	4,000	ug/kg
		N-Nitrosodiphenylamine	10	< 3,300	ug/kg
		Naphthalene	10	11,000	ug/kg
		Nitrobenzene	10	< 3,300	ug/kg
		Pentach lorophenol	10	< 16,000	ug/kg
		Phenanthrene	10	12,000	ug/kg
		Phenol	10	< 3,300	ug/kg
		Pyrene	10	5,900	ug/kg
		bis(2-Chloroethoxy)methane	10	< 3,300	ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-AOC5W-SOO

SAMPLE NO: H446229

TEST CODE LN

DETERMINATION

DILUTION

bis(2-Ethylhexyl)phthalate

10

< 3,300 ug/kg

COMMENTS: The detection limits reported for semi-volatiles were elevated due to the dilution required because of the high concentration of target analytes.

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB05-S19.5

SAMPLE NO: H446230

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 04-MAR-97 1020

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

TEST   DETERMINATION   PACTOR   RESULT UNITS			***************************************			
1 OVTCS2   8260A TCL Volatiles in Soil		TEST		DILLITION	***********	
1 OVTCS2 8260A TCL Volatiles in Soil  1,2-Dichloroethane 8 enzeme Chlorobenzene Ethylbenzene 1	LN	CODE	DETERMINATION		RESULT	LINITS
1,2-Dichloroethane						
1,2-Dichloroethane						
Benzene	1	OVTCS2				
Chlorobenzene				1	< 5	ug/kg
Ethylbenzene Methylene chloride Toluene Xylenes (total)  SOSVTCS TCL - Semi-volatile Extractables in Soil  1,2-Diphenylhydrazine 2,4-Dimethylphenol 2,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylphenol 3,4-Dimethylene 3,4-Dimeth				1	< 5	ug/kg
Methylene chloride				1	< 5	ug/kg
Toluene			· ·	1	< 5	ug/kg
Xylenes (total)				1	< 5	ug/kg
1				1	< 5	ug/kg
1,2-Diphenylhydrazine 2,4-Dimethylphenol 1	-	001/200		1	< 5	ug/kg
2,4-Dimethylphenol 2,4-Dimitrotoluene 3,330 ug/kg 2,6-Dinitrotoluene 1	3	OSVICS				
2,4-Dinitrotoluene 2,6-Dinitrotoluene 3,330 ug/kg 2-Chloronaphthalene 1				1	< 330	ug/kg
2,6-Dinitrotoluene 1 < 330 ug/kg 2-Chloronaphthalene 1 < 330 ug/kg 2-Methylnaphthalene 1 < 330 ug/kg 4,6-Dinitro-o-cresol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg Acenaphthene 1 < 330 ug/kg Acenaphthene 1 < 330 ug/kg Acenaphthene 1 < 330 ug/kg Acenaphthacene 1 < 330 ug/kg Anthracene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluorene 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg				1	< 330	ug/kg
2-Chloronaphthalene 2-Methylnaphthalene 3 330 ug/kg 4,6-Dinitro-o-cresol 4-Nitrophenol Acenaphthene 1 < 1,600 ug/kg 4-Nitrophenol Acenaphthylene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Anthracene 1 < 330 ug/kg Anthracene 1 < 330 ug/kg Benzo(a)anthracene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 < 330 ug/kg Fluoranthene 1 < 330 ug/kg N-Nitrosodiphenylamine Nitrobenzene 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 2 < 330 ug/kg Nitrobenzene 3 < 330 ug/kg Nitrobenzene 4 < 330 ug/kg Nitrobenzene 5 < 330 ug/kg Nitrobenzene 6 < 330 ug/kg Nitrobenzene 7 < 330 ug/kg Nitrobenzene 8 < 330 ug/kg Nitrobenzene 9 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 2 < 330 ug/kg Nitrobenzene 3 < 330 ug/kg				1	< 330	ug/kg
2-Methylnaphthalene 1 < 330 ug/kg 4,6-Dinitro-o-cresol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Anthracene 1 < 330 ug/kg Benzo(a)anthracene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Ug/kg Chrysene 1 < 330 ug/kg Ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Ug/kg Fluorene 1 < 330 ug/kg Ug/k				1	< 330	ug/kg
4,6-Dinitro-o-cresol 4-Nitrophenol Acenaphthene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene  Anthracene  Benzo(a)anthracene Benzo(a)pyrene  Chrysene  Di-n-butyl phthalate Di-n-butyl phthalate Dibenzofuran Fluoranthene  Fluoranthene Fluoranthene  N-Nitrosodiphenylamine Naphthalene Naphthalene Nitrobenzene Nitrobenzene Pentachlorophenol Pyrene Phenol Pyrene  Nisc2-chloropathoxylamthane  Lagykg  1 < 330 ug/kg  1 < 330 ug/kg  230 ug/kg			·	1	< 330	ug/kg
4,6-Dinitro-o-cresol 4-Nitrophenol 4-Nitrophenol 4-Nitrophenol 4-Nitrophenol 4-Nitrophenol 4-Nitrophenol 4-Nitrophenol 4-Nitrophenol 4-Nitrophenol 4-Nitrophenol 4-Nitrophenol 8-Royal and Royal and				1	< 330	ug/kg
A-Nitrophenol Acenaphthene Acenaphthylene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Chrysene Di-n-butyl phthalate Dibenzofuran Fluoranthene Fluorene N-Nitrosodiphenylamine Naphthalene Nitrobenzene Nitrobenzene Pentachlorophenol Pyrene Phenol Pyrene  1				1	< 1,600	
Acenaphthylene 1 < 330 ug/kg Anthracene 1 < 330 ug/kg Benzo(a)anthracene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg				1	< 1,600	
Acenaphthylene Anthracene Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(a)py				1	< 330	ug/kg
Anthracene Benzo(a)anthracene Benzo(a)pyrene 1			. ,	1	< 330	
Benzo(a)anthracene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Pyrene 1 < 330 ug/kg				1	< 330	-
Benzo(a)pyrene 1 < 330 ug/kg Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Pyrene 1 < 330 ug/kg				- 1	< 330	
Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Pyrene 1 < 330 ug/kg			1 14 1 1 (* part 1 - 1 14 14 14 14 14 14 14 14 14 14 14 14 1	1	< 330	
Dienzofuran 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Pyrene 1 < 330 ug/kg			<u>.</u>	1		•
Dibenzofuran   1				1	< 330	
Fluoranthene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Pyrene 1 < 330 ug/kg				1	< 330	
N-Nitrosodiphenylamine				1.	< 330	J. J
N-Nitrosodiphenylamine				1	< 330	
Naphthalene       1       < 330				1	< 330	
Nitrobenzene       1       < 330			-	1	< 330	
Pentachlorophenol 1 < 1,600 ug/kg Phenanthrene 1 < 330 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg  his(2-Chloroethoxy)methone			111 11 11 11 11 11 11 11 11 11 11 11 11	1		
Phenanthrene 1 < 330 ug/kg  Phenol 1 < 330 ug/kg  Pyrene 1 < 330 ug/kg  his(2-Chloroethoxy)methone 1 < 330 ug/kg			•	1		
Phenol Pyrene 1 < 330 ug/kg Pis(2-Chloroethoxy) methons 1 < 330 ug/kg			,	1		
Pyrene 1 < 330 ug/kg				1		
his(2-Chloropthoyy)methana			9 9 1000000	1		
			bis(2-Chloroethoxy)methane	1		

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB05-S19.5

SAMPLE NO: H446230

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
5	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	1	< 330 < 20	ug/kg mg/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB05-S24

SAMPLE NO: H446231 SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437 P.O. NO: 03219

DATE SAMPLED: 04-MAR-97 1033

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		******
LN	CODE	DETERMINATION	FACTOR	RESULT	LINITS
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
_		Xylenes (total)	1	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Nitrobenzene	1	< 330	ug/kg
		Pentachlorophenol	1	< 1,600	ug/kg
		Phenanthrene	1	< 330	ug/kg
		Phenol	1	< 330	ug/kg
		Pyrene	1	< 330	ug/kg
		bis(2-Chloroethoxy)methane	1	< 330	ug/kg
			5		- Jr J

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB05-S24
SAMPLE NO: H446231

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
5	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	1	< 330 < 20	ug/kg mg/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB05-S34.5

SAMPLE NO: H446232

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 04-MAR-97 1050

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

••••					
	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
		Xylenes (total)	1	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	. 1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	- 1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene		< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1,	< 330	ug/kg
		Nitrobenzene	1	< 330	ug/kg
		Pentachlorophenol	1	< 1,600	ug/kg
		Phenanthrene	1	< 330	ug/kg
		Phenol	1	< 330	ug/kg
		Pyrene	1	< 330	ug/kg
		bis(2-Chloroethoxy)methane	1	< 330	ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-SB05-S34.5

SAMPLE NO: H446232

	******				
LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
5	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	1	< 330 < 20	ug/kg mg/kg

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#### **LABORATORY ANALYSIS REPORT**

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB05-S34.5

SAMPLE NO: H446232

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 04-MAR-97 1050

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		• • • • • • • • • • • • • • • • • • • •
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
					• • • • • • • •
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	. < 5	ua /ka
		Benzene	1	. < 5	ug/kg ug/kg
		Chlorobenzene	1	< 5	
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
		Xylenes (total)	1	< 5	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			37 113
		1,2-Diphenylhydrazine	1	< 330	ug/kg
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene	1	< 330	ug/kg
		Anthracene	1	< 330	ug/kg
		Benzo(a)anthracene	1	< 330	ug/kg
		Benzo(a)pyrene Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate	1	< 330	ug/kg
		Dibenzofuran	1	< 330	ug/kg
		Fluoranthene	1	< 330	ug/kg
		Fluorene	1	< 330	ug/kg
		N-Nitrosodiphenylamine	1	< 330	ug/kg
		Naphthalene	1	< 330	ug/kg
		Nitrobenzene	1	< 330	ug/kg
		Pentachlorophenol	1	< 330	ug/kg
		Phenanthrene	1	< 1,600	ug/kg
		Phenol	1	< 330	ug/kg
		Pyrene	/ 1 1	< 330	ug/kg
		bis(2-Chloroethoxy)methane	1	< 330 < 330	ug/kg
			!	< 220	ug/kg

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		LABORATORY ANALYSIS REPORT		ction A rage 41
, (	CLIENT NA		LIMS CLIENT:	0717 0007
	ADDRE		PACE PROJECT:	H44082
	A 777117 1	HOUSTON, TX 77040-	PACE CLIENT:	620437
	ATTENTI	DN: BILL GOLDSBY	P.O. NO:	03219
	SAMPLE	ID: HWPW-SB05-S39		
			DATE SAMPLED:	04-MAR-97 1103
	SAMPLE		DATE RECEIVED:	04-MAR-97
SAI	MPLE MATR	ix: SUIL	PROJECT MANAGER:	Elessa Sommers
			<i>t</i>	
	TEST		BILLITION	
LN	CODE	DETERMINATION	DILUTION	
		PEICHTANION	FACTOR	RESULT UNIT
		, , , , , , , , , , , , , , , , , , , ,		***********
1	OVTCS2	8260A TCL Volatiles in Soil		
		1.2-Dichloroethane		_

LN	CODE	DETERMINATION	FLOTION	FACTOR		
		**************************************	FACTOR	RESULT	UNITS	
1	OVTCS2	8260A TCL Volatiles in Soil				
		1,2-Dichloroethane		_		
		Benzene	1	< 5	ug/kg	
		Chlorobenzene	1	< 5	ug/kg	
		Ethylbenzene	1	< 5	ug/kg	
		Methylene chloride	1	< 5	ug/kg	
		Toluene	1	< 5	ug/kg	
		Xylenes (total)	1	< 5	ug/kg	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	1	< 5	ug/kg	
-		1,2-Diphenylhydrazine				
		2,4-Dimethylphenol	1	< 330	ug/kg	
		2,4-Dinitrotoluene	1	< 330	ug/kg	
		2,6-Dinitrotoluene	1	< 330	ug/kg	
		2-Chloronaphthalene	1.	< 330	ug/kg	
		2-Methylnaphthalene	1	< 330	ug/kg	
		4,6-Dinitro-o-cresol	1	< 330	ug/kg	
		4-Nitrophenol	1	< 1,600	ug/kg	
		Acenaphthene	1	< 1,600	ug/kg	
		Acenaphthylene	1	< 330	ug/kg	
		Anthracene	1	< 330	ug/kg	
		Benzo(a)anthracene	1	< 330	ug/kg	
		Benzo(a)pyrene	1	< 330	ug/kg	
		Chrysene	. 1	< 330	ug/kg	
		Di-n-butyl phthalate	1	< 330	ug/kg	
		Dibenzofuran	1	< 330	ug/kg	
		Fluoranthene	1	< 330	ug/kg	
		Fluorene	· 1 .	< 330	ug/kg	
			1	< 330	ug/kg	
		N-Nitrosodiphenylamine	<sub>.</sub> 1	< 330	ug/kg	
		Naphthalene Nitrobenzene	1	< 330	ug/kg	
			1	< 330	ug/kg	
		Pentachlorophenol	1	< 1,600	ug/kg	
		Phenanthrene Phenol	1	< 330	ug/kg	
			1	< 330	ug/kg	
		Pyrene	1	< 330	ug/kg	
		bis(2-Chloroethoxy)methane	1	< 330	ug/kg	

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB05-S39
SAMPLE NO: H446233

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
5	16858	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	1 1		ug/kg mg/kg

Tel: 713-488-1810 Fax: 713-488-4661

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB05-S54

SAMPLE NO: H446234

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 04-MAR-97 1128

DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

TEST   DETERMINATION   FACTOR   RESULT   UNITS							
1 OVTCS2   8260A TCL Volatiles in Soil   1,2-Dichloroethane   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbenzene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   1   < 5   ug/kg   Ug/kg   Ethylbensene   1   < 5   ug/kg   Ug/kg   Ethylbensene   1   < 5   ug/kg   Ethylbensene   Ethylbensene   Ethylbensene   Ethylbensene   Ethylbensene   Ethylbensene   Ethylbensene   Ethylbensene   Ethyl				DILUTION			-
1 OVTCS2 8260A TCL Volatiles in Soil 1,2-Dichloroethane 8enzene 1	LN	CODE	DETERMINATION		RESULT	UNITS	
1,2-Dichloroethane Benzene Chlorobenzene Ethytbenzene Hethytene chloride Toluene Xylenes (total)  3 OSVICS TCL - Semi-volatile Extractables in Soil 1,2-Diphenythydrazine 2,4-Dinitrotoluene 2,6-Dinitrotoluene 3,6-Dinitrotoluene 4,6-Dinitro-o-cresol 4,6-Dinitro-o-cresol 4,6-Dinitro-o-cresol 4,6-Dinitro-o-cresol 4,6-Dinitro-o-cresol 5,1-Dinitro-o-cresol 6,1-Dinitro-o-cresol 7,2-Diphenythydrazine 9,3-Dinitro-o-cresol 1,2-Diphenythydrazine 1,2-Diphenythydrazine 1,2-Diphenythydrazine 1,2-Diphenythydrazine 1,2-Dinitro-o-cresol 1,2-Dinitro-o-cresol 2,6-Dinitro-o-cresol 3,3-Dinitro-o-cresol 4,6-Dinitro-o-cresol 4,6-Dinitro-o-cresol 5,1-Dinitro-o-cresol 6,2-Methyt-laphthalene 1,2-Dinitro-o-cresol 1,2-Dinitro-o-cresol 1,2-Dinitro-o-cresol 1,2-Dinitro-o-cresol 1,2-Dinitro-o-cresol 1,2-Dinitro-o-cresol 1,2-Dinitro-o-cresol 1,2-Dinitro-o-cresol 2,3-Dinitro-o-cresol 3,3-Dinitro-o-cresol 3,3-Dinitro-o-cresol 4,6-Dinitro-o-cresol 4,6-Dinitro-o-cresol 5,2-Dinitro-o-cresol 6,2-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,3-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,3-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,3-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,3-Dinitro-o-cresol 7,3-Dinitro-o-cresol 7,3-Dinitro-o-cresol 7,3-Dinitro-o-cresol 7,3-Dinitro-o-cresol 7,3-Dinitro-o-cresol 7,3-Dinitro-o-cresol 7,3-Dinitro-o-cresol 7,2-Dinitro-o-cresol 7,3-Di							
1,2-Dichloroethane Benzene Chlorobenzene Ethytbenzene Hethytene chloride Toluene Xylenes (total)  3 OSVICS TCL - Semi-volatile Extractables in Soil 1,2-Diphenythydrazine 2,4-Dinitrotoluene 2,6-Dinitrotoluene 3,0-Dinitrotoluenenenenenenenenenenenenenenenenenenen	4	017003	00/04 701 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1				
Benzene	1	OVICSZ					
Chlorobenzene				1	< 5	ug/kg	
Ethylbenzene				. 1	< 5	ug/kg	
Methylene chloride         1         < 5				1	< 5	ug/kg	
Toluene Xylenes (total) 1 < 5 ug/kg Xylenes (total) 1 < 5 ug/kg Xylenes (total) 1 < 5 ug/kg Xylenes (total) 1 < 5 ug/kg Xylenes (total) 1 < 5 ug/kg Xylenes (total) 1 < 5 ug/kg Xylenes (total) 1 < 330 ug/kg 2,4-Dimthylphenol 1 < 330 ug/kg 2,4-Dimthylphenol 1 < 330 ug/kg 2,4-Dimtrotoluene 1 < 330 ug/kg 2,6-Dintrotoluene 1 < 330 ug/kg 2.6-Dintrotoluene 1 < 330 ug/kg 2-Methylnephthalene 1 < 330 ug/kg 2-Methylnephthalene 1 < 330 ug/kg 4,6-Dintro-o-cresol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg Acenaphthylene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Benzo(a)anthracene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Din-butyl phthalate 1 < 330 ug/kg Din-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluorene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg Nhitrosodiphenylamine 1 < 330 ug/kg Nhitrosodiphenylamine 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330 ug/kg Prene 1 < 330			10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	< 5	ug/kg	
Xylenes (total)				1	< 5	ug/kg	
1				1	< 5	ug/kg	
1,2-Diphenylhydrazine 2,4-Dimethylphenol 1 < 330 ug/kg 2,4-Dimitrotoluene 1 < 330 ug/kg 2,6-Dinitrotoluene 1 < 330 ug/kg 2-Chloronaphthalene 1 < 330 ug/kg 2-Chloronaphthalene 1 < 330 ug/kg 2-Methylnaphthalene 1 < 330 ug/kg 2-Methylnaphthalene 1 < 330 ug/kg 4,6-Dinitro-o-cresol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg Acenaphthylene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Acenaphtylene 1 < 330 ug/kg Acenaphtylene 1 < 330 ug/kg Acenaphtylene 1 < 330 ug/kg Acenaphtylene 1 < 330 ug/kg Acenaphtylene 1 < 330 ug/kg Acenaphtylene 1 < 330 ug/kg Acenaphtylene 1 < 330 ug/kg Acenaphtylene 1 < 330 ug/kg Acenaphtylene 1 < 330 ug/kg Benzo(a)aphracene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluorene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenathrene 1 < 330 ug/kg Phenol Pyrene 1 < 330 ug/kg Pyrene 1 < 330 ug/kg	7	001/700		1	< 5	ug/kg	
2,4-Dimethylphenol	3	OSVICS					
2,4-Dinitrotoluene       1       < 330				1	< 330	ug/kg	
2,6-Dinitrotoluene 2-Chloronaphthalene 1				1	< 330	ug/kg	
2-Chloronaphthalene 2-Methylnaphthalene 330 ug/kg 4,6-Dinitro-o-cresol 4-Nitrophenol Acenaphthene 1 < 330 ug/kg 4-Nitrophenol Acenaphthylene 1 < 330 ug/kg Anthracene 1 < 330 ug/kg Anthracene 1 < 330 ug/kg Anthracene 1 < 330 ug/kg Anthracene 1 < 330 ug/kg Benzo(a)anthracene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 < 330 ug/kg Fluoranthene 1 < 330 ug/kg N-Nitrosodiphenylamine Naphthalene Nitrobenzene 1 < 330 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg				1	< 330	ug/kg	
2-Methylnaphthalene 1 < 330 ug/kg 4,6-Dinitro-o-cresol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg Acenaphthene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Anthracene 1 < 330 ug/kg Benzo(a)anthracene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Chrysene 1 < 330 ug/kg Chrysene 1 < 330 ug/kg Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluorenthene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 < 330 ug/kg Riuorene 1 <				1	< 330	ug/kg	
2-Methylnaphthalene 4,6-Dinitro-o-cresol 1,1,600 ug/kg 4-Nitrophenol 1,1,600 ug/kg Acenaphthene 1,2,330 ug/kg Acenaphthylene 1,2,330 ug/kg Anthracene 1,2,330 ug/kg Benzo(a)anthracene 1,2,330 ug/kg Benzo(a)pyrene 1,2,330 ug/kg Benzo(a)pyrene 1,2,330 ug/kg Benzo(a)pyrene 1,2,330 ug/kg Benzo(a)pyrene 1,2,330 ug/kg Benzo(a)pyrene 1,2,330 ug/kg Benzo(a)pyrene 1,2,330 ug/kg Benzo(a)pyrene 1,2,330 ug/kg Benzo(a)pyrene 1,2,330 ug/kg Benzo(a)pyrene 1,2,330 ug/kg Benzo(a)pyrene 1,2,330 ug/kg Fluoranthene 1,2,330 ug/kg Fluoranthene 1,2,330 ug/kg N-Nitrosodiphenylamine Nitrobenzene 1,2,330 ug/kg N-pentachlorophenol 1,2,330 ug/kg Phenanthrene 1,2,330 ug/kg Phenanthrene 1,2,330 ug/kg Phenol Phenol Phenol Phenol Pyrene 1,2,330 ug/kg Pyrene 1,2,330 ug/kg Pyrene			•	1	< 330	ug/kg	
4-Nitrophenol 1 < 1,600 ug/kg Acenaphthene 1 < 330 ug/kg Acenaphthylene 1 < 330 ug/kg Anthracene 1 < 330 ug/kg Benzo(a)anthracene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg				1	< 330		
Acenaphthene Acenaphthene Acenaphthylene Acenaphthylene Anthracene Anthracene Benzo(a)anthracene Benzo(a)pyrene Chrysene Di-n-butyl phthalate Dibenzofuran Fluorene N-Nitrosodiphenylamine Naphthalene Nitrobenzene Nitrobenzene Phenol Pyrene  his(2-Chlerosthovy)methone  1				1	< 1,600		
Acenaphthene Acenaphthylene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Chrysene Di-n-butyl phthalate Dibenzofuran Fluoranthene Fluorene N-Nitrosodiphenylamine Naphthalene Nitrobenzene Pentachlorophenol Phenanthrene Phenol Pyrene  Nist2-Chlorosethoxylmethose Pisson  Acenaphthylene Acenaphthylene Acenaphthylene Acenaphtyl				1	< 1,600		
Acenaphthylene Anthracene Anthracene Benzo(a)anthracene Benzo(a)pyrene Chrysene Di-n-butyl phthalate Dibenzofuran Fluoranthene Fluorene N-Nitrosodiphenylamine Naphthalene Nitrobenzene Pentachlorophenol Phenanthrene Phenol Pyrene  1				1	< 330	-	
Benzo(a)anthracene Benzo(a)pyrene Chrysene 1				1	< 330		
Benzo(a)anthracene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg				1	< 330	ug/kg	
Benzo(a)pyrene				1	< 330	_	
Chrysene Di-n-butyl phthalate Dibenzofuran D				1	< 330		
Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Pyrene 1 < 330 ug/kg				1	< 330		
1				1			
Fluoranthene 1 < 330 ug/kg Fluorene 1 < 330 ug/kg N-Nitrosodiphenylamine 1 < 330 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 < 330 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 330 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Pyrene 1 < 330 ug/kg				1	< 330		
N-Nitrosodiphenylamine				1	< 330		
N-Nitrosodiphenylamine  Naphthalene  Nitrobenzene  Nitrobenzene  Pentachlorophenol  Phenanthrene  Phenol  Pyrene  Discording to the process of the process o				1	< 330		
Naphthalene       1       < 330				1			
Nitrobenzene				1			
Pentachlorophenol       1       < 1,600				1			
Phenanthrene         1         < 330 ug/kg			Pentachlorophenol	1			
Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg 1 < 330 ug/kg					•		
Pyrene 1 < 330 ug/kg				1			
his/2-Chloroothovy/methons			*	1			
			bis(2-Chloroethoxy)methane	1			

Tel: 713-488-1810 Fax: 713-488-4661

April 08, 1997
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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-SB05-S54

SAMPLE NO: H446234

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
5	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	1 1	< 330 < 20	ug/kg mg/kg

Tel: 713-488-1810 Fax: 713-488-4661

April 08, 1997 Report No.: 00060278 Section A Page 45

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB06-S4

SAMPLE NO: H446235

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44082

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 04-MAR-97 1433 DATE RECEIVED: 04-MAR-97

PROJECT MANAGER: Elessa Sommers

****						
	TEST		DILUTION			
LN	CODE	DETERMINATION	FACTOR	RESULT	LINITE	
			170100	RESULI	ONIIS	
1	OVTCS2	8260A TCL Volatiles in Soil				
		1,2-Dichloroethane	1	< 5	ua/ka	
		Benzene	1	< 5	ug/kg	
		Chlorobenzene	1	< 5	ug/kg ug/kg	
		Ethylbenzene	1	55		
		Methylene chloride	1	< 5	ug/kg ug/kg	
		Toluene	1			
		Xylenes (total)	1	140	ug/kg ug/kg	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	•	140	ug/kg	
		1,2-Diphenylhydrazine	25	< 8,200	ug/kg	
		2,4-Dimethylphenol	25	< 8,200	ug/kg	
		2,4-Dinitrotoluene	25	< 8,200	ug/kg	
		2,6-Dinitrotoluene	25	< 8,200	ug/kg	
		2-Chloronaphthalene	25	< 8,200	ug/kg	
		2-Methylnaphthalene	25	72,000	ug/kg	
		4,6-Dinitro-o-cresol	25	< 41,000	ug/kg	
		4-Nitrophenol	25	< 41,000	ug/kg	
		Acenaphthene	25	46,000		
		Acenaphthylene	25	< 8,200	ug/kg	
		Anthracene	25	25,000	ug/kg ug/kg	
		Benzo(a)anthracene	25	8,200	ug/kg ug/kg	
		Benzo(a)pyrene	25	< 8,200		
		Chrysene	25	9,900	ug/kg ug/kg	
		Di-n-butyl phthalate	25	< 8,200	ug/kg ug/kg	
		Dibenzofuran	25	43,000		
		Fluoranthene	25	52,000	ug/kg ug/kg	
		Fluorene	25	41,000		
		N-Nitrosodiphenylamine	25	< 8,200	ug/kg ug/kg	
		Naphthalene	25	132,000	ug/kg	
		Nitrobenzene	25	< 8,200	ug/kg	
		Pentachlorophenol	25	< 41,000	ug/kg ug/kg	
		Phenanthrene	25	82,000	-	
		Phenol	25	< 8,200	ug/kg	
		Pyrene	25	30,000	ug/kg	
		bis(2-Chloroethoxy)methane	25	< 8,200	ug/kg	
			40	, 0,200	ug/kg	

Tel: 713-488-1810 Fax: 713-488-4661

April 08, 1997
Report No.: 00060278
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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-SB06-S4

SAMPLE NO: H446235

LN	TEST	DETERMINATION	DILUTION			
		DETERMINATION	FACTOR	RESULT	UNITS	
		bis(2-Ethylhexyl)phthalate	25	< 8,200	ug/kg	
5	16858	Petroleum Hydrocarbons	1	690	mg/kg	

COMMENTS: The detection limits reported for semi-volatiles were elevated due to the dilution required because of the high concentration of target analytes.

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Section B Page 1

### SUPPLEMENTAL INFORMATION

	TEST	LCSR BLNK	DUP/MS MS/MSD		SAMPLE PREPA	RATION	**********	SAMPLE ANALYS	SIS	•••••
LN	CODE		BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYST	INSTRUMEN
AMPL	E ID: H	IWPW-MW14	-s017					SAMPLE NO	D: H4462	213
	OVTCS2		72083				19-8260A	07-MAR-97 1446	JC	GCMSY
3	OSVTCS	72203	72203	19-3550A	12-MAR-97 0900	АМ	19-8270B	30-MAR-97 2323	EAY	GCMSZ
AMPL	E ID: H	WPW-MW14	-s035					SAMPLE NO	): H4462	214
1	OVTCS2	72083	72257	NA			19-8260A	07-MAR-97 1520	10	ogue.
3	OSVTCS	72203	72203	19-3550A	12-MAR-97 0900	RDQ	19-8270B	22-MAR-97 2154		GCMSY GCMSX
AMB	- 10. II		2010							GONOX
AMPLI	: 1D: H	WPW-MW14	-8040					SAMPLE NO	): H4462	215
1	OVTCS2	72083	72257				19-8260A	07-MAR-97 1553	JC.	GCMSY
3	OSVTCS	72203	72203	19-3550A	12-MAR-97 0900	RDQ	19-8270B	22-MAR-97 2244		GCMSX
AMPLI	E ID: H	WPW-AOC4	-SE-S00	,				SAMPLE NO	): H4462	216
	OVTCS2		72257				19-8260A	07-MAR-97 1626	JC	GCMSY
3	OSVTCS	72203	72203	19-3550A	12-MAR-97 0900	RDQ	19-8270B	06-APR-97 2208	EAY	GCMSA
AMPLE	E ID: H	WPW-AOC4	-sw-s00					SAMPLE NO	: H4462	17
1	OVTCS2	72083	72257	NA			19-8260A	07-MAR-97 1659	ıc	GCMSY
3	OSVTCS	72203	72203	19-3550A	12-MAR-97 0900	RDQ	19-8270B	23-MAR-97 2208		GCMSA
AMPLE	ID: H	WPW-AOC4	-NE-S00					SAMPLE NO		
	01/2000	70444						57111 EE 140	. 114402	.10
	OVTCS2 OSVTCS	72161 72203	72257		42 442 67 6666		19-8260A			GCMSY
J	034163	12203	12203	19-3330A	12-MAR-97 0900	RDQ	19-8270B	23-MAR-97 1449	EAY	GCMSA
AMPLE	ID: H	WPW-AOC4	-NW-S00	r.				SAMPLE NO	: H4462	19
1	OVTCS2	72257	72257	NA			19-8260A	10-MAR-97 1228	ıc	CCNCA
3	OSVTCS	72203	72203	19-3550A	12-MAR-97 0900	RDQ	19-8270B	05-APR-97 1726		GCMSY GCMSA
AMPLE	ID: H	WPW-AOC7	- 5'00					SAMPLE NO		20
1	OVTCS2	72194	72257	MA			10.00/01			
	OSVTCS	72203		NA 19-3550A	12-MAR-97 0900	PDO		11-MAR-97 0948		GCMSY
	16858	72360		19-3550A	12-MMK-31 U9UU	KUW	19-8270B 02-418.1	02-APR-97 0308		GCMSA
				., 023011			02-410.1	14-MAR-97 1200	JLJ	302WAT

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### SUPPLEMENTAL INFORMATION

	TEST	LCSR BLNK	DUP/MS MS/MSI	s	SAMPLE PREPA	ARATION			LYSIS	
LN		BATCH	BATCH		DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYST	INSTRUME
SAME	PLE ID:	HWPW-SBO	2-\$7					SAMPI F	NO: H446	221
4	OVTCS2	72257	72257	7 114						
	OSVICS				12-MAR-97 0900		19-8260A	10 1011 71 100		GCMSY
_	1685s			) 19-3550A	12-MAK-97 0900	KDQ	19-8270в			GCMSA
		12500	72300	19-3330A			02-418.1	14-MAR-97 120	) JLJ	302WAT
SAMP	LE ID:	HWPW-SB02	2- <b>s</b> 21					SAMPLE	NO: H4462	222
1	OVTCS2	72194	72257	NA NA			19-8260A	11-MAR-97 102	l ic	GCMSY
3	OSVTCS	72449			17-MAR-97 1300	RDQ	19-8270в			GCMSA
5	1685s	72360	72360	19-3550A			02-418.1	14-MAR-97 1200		302WAT
SAMP	LE ID:	HWPW-SB02	2-524					SAMPLE	NO: H4462	23
1	OVTCS2	72194	72257	NA			40.0040			
	OSVTCS	72449			17-MAR-97 1300	DDO		11-MAR-97 1137		GCMSY
	16858	72360		19-3550A	17 -MAK-97 1300	KUQ	19-8270B			GCMSA
				17 33301			02-418.1	14-MAR-97 1200	JLJ	302WAT
SAMP	LE ID: H	IWPW-SB02	-837.5					SAMPLE	NO: H4462	24
1	OVTCS2	72194	72257	NA			19-8260A	11-MAR-97 1201	1C	GCMSY
	OSVTCS	72449	72449	19-3550A	17-MAR-97 1300	RDQ	19-8270B	23-MAR-97 2128		GCMSA
5	16858	72360	72360	19-3550A			02-418.1	14-MAR-97 1200		302WAT
SAMPL	E ID: H	WPW-SB02	-s38.5					CAMDIE	NO: H44622	95
								SAMPLE	NU: 1144022	25
	OVTCS2	72194	72257				19-8260A	11-MAR-97 1244	JC	GCMSY
	OSVTCS	72449			17-MAR-97 1300	RDQ	19-8270B	23-MAR-97 1705		GCMSA
5	1685s	72360	72360	19-3550A			02-418.1	14-MAR-97 1200		302WAT
SAMPL	E ID: H	WPW-SB02	-\$49					SAMPLE N	NO: H44622	26
1	OVTCS2	72257	72257							
	OSVTCS				17 440 07 4700		19-8260A	10-MAR-97 1404		GCMSY
	16858	72360	72340	19-3550A 19-3550A	17-MAR-97 1300	RDQ	19-8270в	23-MAR-97 1949		GCMSA
-	.0050	12300	72300	19-3330A			02-418.1	14-MAR-97 1200	JLJ	302WAT
SAMPL	E ID: H	NPW-AOC3	I-S00					SAMPLE N	IO: H44622	7
1	OVTCS2	72257	72257	NA			10-93404	40 445 07 4445		
	OSVTCS	72449			17-MAR-97 1300	PDO		10-MAR-97 1440		GCMSY
		10 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				NOW.	19-8270B	04-APR-97 2249	EAY	GCMSA

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### SUPPLEMENTAL INFORMATION

8260A 10-MAR-97 8270B 23-MAR-97 SAI 8260A 11-MAR-97 8270B 01-APR-97		GCMSA
R-METHOD DATE/TI SA -8260A 10-MAR-97 -8270B 23-MAR-97 SA -8260A 11-MAR-97 8270B 01-APR-97	IME ANALY  AMPLE NO: H4  7 1513 JC 7 1754 EAY  AMPLE NO: H4	GCMSY GCMSY GCMSY GCMSY GCMSY
SA 8260A 10-MAR-97 8270B 23-MAR-97 SA 8260A 11-MAR-97 8270B 01-APR-97	AMPLE NO: H4 7 1513 JC 7 1754 EAY AMPLE NO: H4	GCMSY GCMSA GCMSA 46229 GCMSY
8260A 10-MAR-97 8270B 23-MAR-97 SAI 8260A 11-MAR-97 8270B 01-APR-97	7 1513 JC 7 1754 EAY AMPLE NO: H4 7 1759 JC	GCMSY GCMSA 46229 GCMSY
8270B 23-MAR-97 SAI 8260A 11-MAR-97 8270B 01-APR-97	7 1754 EAY AMPLE NO: H4 7 1759 JC	GCMSA 46229 GCMSY
8270B 23-MAR-97 SAI 8260A 11-MAR-97 8270B 01-APR-97	7 1754 EAY AMPLE NO: H4 7 1759 JC	GCMSA 46229 GCMSY
8260A 11-MAR-97 8270B 01-APR-97	7 1759 JC	GCMSY
8270B 01-APR-97		
8270B 01-APR-97		
SAI		
	MPLE NO: H44	_
		TOLDO
	7 1317 JC	GCMSY
	2218 EAY	GCMSA
418.1 14-MAR-97	1200 JLJ	302WAT
SAN	MPLE NO: H44	6231
3260A 10-MAR-97	1905 JC	GCMSY
3270B 23-MAR-97	2356 EAY	GCMSA
	1200 JLJ	302WAT
SAM	MPLE NO: H44	6232
3260A 10-MAR-97		GCMSY
		GCMSA
18.1 14-MAR-97	1200 JLJ	302WAT
SAM	IPLE NO: H44	6233
260A 10-MAD-07	2011 10	OCHOV
		GCMSY
		GCMSA 302WAT
		GCMSY
2700 3/ was as 4		GCMSA
	1200 JLJ	302WAT
2 2 2 1	18.1 14-MAR-97  SAM  260A 10-MAR-97  270B 24-MAR-97  18.1 14-MAR-97  SAM  260A 10-MAR-97  270B 24-MAR-97	18.1 14-MAR-97 1200 JLJ  SAMPLE NO: H444 260A 10-MAR-97 2011 JC 270B 24-MAR-97 0135 EAY 18.1 14-MAR-97 1200 JLJ  SAMPLE NO: H444 260A 10-MAR-97 2044 JC 270B 24-MAR-97 0224 EAY

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#### SUPPLEMENTAL INFORMATION

		TEST	LCSR BLNK	DUP/MS MS/MSD		- SAMPLE PREPAR	ATION		SAMPLE ANALY	YSIS	
	N.	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SA	SAMPLE ID: HWPW-SB06-S4 SAMPLE NO: H446235										
	1 3 5	OVTCS2 OSVTCS 1685S	72194 72450 72360	72257 72450 72360	NA 19-3550A 19-3550A	18-MAR-97 1300	RDQ	19-8260A 19-8270B 02-418-1	11-MAR-97 1350 24-MAR-97 1348 14-MAR-97 1200	JLJ EAY JC	GCMSY GCMSA 302WAT

#### LR Method Literature Reference

- 02 EPA-Methods for Chemical Analysis of Water & Wastes, 1984.
- 19 EPA-Test Methods for Evaluating Solid Waste, 3rd ed, Nov. 1986 and updates

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#### SURROGATE STANDARD RECOVERY

LN	TEST	SURROGATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF LN
					KEF LN
AMPL	.E ID: 1	HWPW-MW14-S017		SAMPLE NO:	H446213
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			2
		4-Bromofluorobenzene	96		1
		Dibromofluoromethane	. 104	-	
		Toluene-d8	92	_	
4	\$BNAS	GC/MS BNA Surrogates	, ,,,	_	3
		2,4,6-Tribromophenol	60	_	3
		2-Fluorobiphenyl	100	_	
		2-Fluorophenol	62	-	
		Nitrobenzene-d5	55	-	
		Phenol-d5	80		
		p-Terphenyl-d14	85	-	
MPL	E ID: H	WPW-MW14-S035		SAMPLE NO:	H446214
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			1
		4-Bromofluorobenzene	98		
		Dibromofluoromethane	112		
		Toluene-d8	93	_	
4	\$BNAS	GC/MS BNA Surrogates	,,		3
		2,4,6-Tribromophenol	35		,
		2-Fluorobiphenyl	47	-	
		2-Fluorophenol	35	-	
		Nitrobenzene-d5	41	-	
		Phenol-d5	41	-	
		p-Terphenyl-d14	42	-	
4PLE	E ID: H	WPW-MW14-S040	\$	SAMPLE NO:	H446215
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			1
		4-Bromofluorobenzene	97	-	
		Dibromofluoromethane	114	-	
		Toluene-d8	92	-	
4	\$BNAS	GC/MS BNA Surrogates	7-		3
		2,4,6-Tribromophenol	44	-	
		2-Fluorobiphenyl	57	-	
		2-Fluorophenol	44	-	
		Nitrobenzene-d5	49	-	
		Phenol-d5	48		
		p-Terphenyl-d14	50	-	

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### SURROGATE STANDARD RECOVERY

	TEST		PERCENT	ACCEPTANCE	
LN	CODE	SURROGATE COMPOUND	RECOVERY		REF LA
SAMPL	E ID:	HWPW-A0C4-SE-S00			
				SAMPLE NO:	H446216
2	\$VOA2	(0200)			1
		4-Bromofluorobenzene	103	-	
		Dibromofluoromethane	110	-	
,	<b>A</b> D	Toluene-d8	92	-	
4	\$BNAS	GC/MS BNA Surrogates			3
		2,4,6-Tribromophenol	32	-	
		2-Fluorobiphenyl	50	-	
		2-Fluorophenol	25	-	
		Nitrobenzene-d5	38		
		Phenol-d5	27	-	
		p-Terphenyl-d14	40	-	
AMPL	E ID:	HWPW-AOC4-SW-S00		SAMPLE NO:	H446217
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			
		4-Bromofluorobenzene	400		1
		Dibromofluoromethane	102	•	
		Toluene-d8	112	•	
4	\$BNAS	GC/MS BNA Surrogates	91	-	
		2,4,6-Tribromophenol			3
		2-Fluorobiphenyl	43	-	
		2-Fluorophenol	30	-	
		Nitrobenzene-d5	24	-	
		Phenol-d5	35	,=	
		p-Terphenyl-d14	19*	y	
		* The surrogate recovery was outside of QC acceptance limits due to matrix interference.	44		
MDIE	ID: H	IWPW-AOC4-NE-SOO			
			S	SAMPLE NO: I	H446218
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			1
		4-Bromofluorobenzene	109	-	1
		Dibromofluoromethane	113	-	÷
		Toluene-d8	96	_	
4 :	\$BNAS	GC/MS BNA Surrogates	70	_	7
		2,4,6-Tribromophenol	27	_	3
		2-Fluorobiphenyl	31	-	
		2-Fluorophenol		-	
		Nitrobenzene-d5	8*	-	
		Phenol -d5	27	-	
		p-Terphenyl-d14	5*	-	
		1	31	-	

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### SURROGATE STANDARD RECOVERY

LN	CODE	SURROGATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF LA
		* *			
		* The surrogate recovery was outside of QC acceptance limits due to matrix interference.			
SAMPL	E ID:	HWPW-AOC4-NW-SOO		SAMPLE NO:	W//6210
2	\$VOA29	CC/MC Valatiles Communication		oran LL NO.	11440219
-	TY ONES	GC/MS Volatiles Surrogates (8260) 4-Bromofluorobenzene			1
		Dibromofluoromethane	106	-	•
		Totuene-d8	105	-	
4	\$BNAS		99	•	
7	PDNAS	GC/MS BNA Surrogates			3
		2,4,6-Tribromophenol	53	-	-
		2-Fluorobiphenyl	88	-	
		2-Fluorophenol	43	-	
		Nitrobenzene-d5	50		
		Phenol -d5	50	-	
		p-Terphenyl-d14	80	-	
SAMPLE	E ID: H	WPW-A0C7-S00		AMPLE NO:	1///220
-	<b>A</b> 1404.00	*	•	AMPLE NO:	H446220
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			1
		4-Bromofluorobenzene	116		1
		Dibromofluoromethane	118		
,	<b>Am</b>	Toluene-d8	93	-	
4	\$BNAS	GC/MS BNA Surrogates	,,		7
		2,4,6-Tribromophenol	*		3
		2-Fluorobiphenyl	*	_	
		2-Fluorophenol	*	-	
		Nitrobenzene-d5	*	-	
		Phenol-d5	*	-	
		p-Terphenyl-d14	*	-	
	,	* The surrogate was not recovered due to the dilution taken as a result of the		•	
		high concentration of target analytes.			
SAMPLE	ID: H	PW-SB02-S7	SA	MPLE NO: H	446221
2 \$	\$VOA2S	GC/MS Volatiles Surrogates (8260)			
		4-Bromofluorobenzene			1
		Dibromofluoromethane	100	-	
		Toluene-d8	109	-	
4 \$	BNAS	GC/MS BNA Surrogates	99	-	
		2,4,6-Tribromophenol			3
		2-Fluorobiphenyl	49	-	
		2-Fluorophenol	61	-	
		Nitrobenzene-d5	43	-	¢'
			53	•	1.

LN

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### SURROGATE STANDARD RECOVERY

CODE SURROGATE COMPOUND  PLE ID: HWPW-SB02-S7	PERCENT RECOVERY	ACCEPTANC LIMITS	_
PLE ID: HWPW-SB02-S7			DEE
PLE ID: HWPW-SB02-S7			REF
Dhanada 15		SAMPLE NO:	H446221
Phenol -d5	50		
p-Terphenyl-d14	59		
LE ID: HWPW-SB02-S21			
		SAMPLE NO:	H446222
\$VOA2S GC/MS Volatiles Surrogates (8260)			11770222
4-Bromofluorobenzene			1
Dibromofluoromethane	102		•
Toluene-d8	102	. •	
\$BNAS GC/MS BNA Surrogates	99	-	
2,4,6-Tribromophenol			3
2-Fluorobiphenyl	48	-	J
2-Fluorophenol	57	-	
Nitrobenzene-d5	44	_	
Phenol-d5	58	-	
p-Terphenyl-d14	55	-	
p respirit-dia	594	_	
E ID: HWPW-SB02-S24	.,,		
IIII N 000E 3E4	s	SAMPLE NO:	H446223
\$VOA2S GC/MS Volatiles Surrogates (8260)		THE NO.	11440223
4-Bromofluorobenzene			1
Dibromofluoromethane	103	-	1
Toluene-d8	100	-	
\$BNAS GC/MS BNA Surrogates	99	_	
2,4,6-Tribromophenol	, ,,		_
2-Fluorobiphenol	47	_	3
2-Fluorophenol	53	-	
Nitrobenzene-d5	25	-,	
Phenol-d5	52	-	
	16*	•	
p-Terphenyl-d14		-	
* The surrogate recovery was outside of QC acceptance limits due to matrix	v 50	-	
interference.	•		
ID: HWPW-SB02-S37.5			
	SAI	MPLE NO: H4	446224
GVOA2S GC/MS Volatiles Surrogates (8260)			7-10224
4-Bromofluorobenzene			1
Dibromofluoromethane	106	-	'
Toluene-d8	110	-	
BNAS GC/MS BNA Surrogates	99	-	
· · · · · · · · · · · · · · · · · · ·	10.7		_
2.4.6-Tribromophenol			7
2,4,6-Tribromophenol 2-Fluorobiphenyl	43		3

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### SURROGATE STANDARD RECOVERY

LN CODE	SURROGATE COMPOUND	PERCENT RECOVER'	ACCEPTANCE  / LIMITS	
				REF LN
AMPLE ID:	HWPW-SB02-S37.5			
			SAMPLE NO:	H446224
	2-Fluorophenol		. ^	
	Nitrobenzene-d5	38		
	Phenol-d5	62		
	p-Terphenyl-d14	44 51		
			-	
AMPLE ID:	HWPW-SB02-S38.5		SAMPLE NO:	W///33F
_			SAMPLE NO:	H446225
2 \$VOA2				_
	4-Bromofluorobenzene	107	_	1
	Dibromofluoromethane	104	-	
	Toluene-d8	98	•	
4 \$BNAS	GC/MS BNA Surrogates	70	-	_
	2,4,6-Tribromophenol	14		3
	2-Fluorobiphenyl	46	•	
	2-Fluorophenol	54	, -	
	Nitrobenzene-d5	38	-	
	Phenol-d5	56	-	
	p-Terphenyl-d14	45 55	. •	
MPLE ID:	HWPW-SB02-S49	33	-	
MFLL ID:	1MFW-3BUZ-349		SAMPLE NO:	H446226
2 \$VOA2S	GC/MS Volatiles Surrogates (8260)			
	4-Bromofluorobenzene			1
	Dibromofluoromethane	100	-	
	Toluene-d8	102	-	
4 \$BNAS	GC/MS BNA Surrogates	98	-	
	2,4,6-Tribromophenol			3
	2-Fluorobiphenyl	39	-	
	2-Fluorophenol	44	-	
	Nitrobenzene-d5	43	-	
	Phenol-d5	40	-	
	p-Terphenyl-d14	39	-	
		46	-	
PLE ID: H	WPW-AOC3W-SOO	s	AMPLE NO: H	1//4227
2 \$1/04.26	CC/MC Valantil		MATEL NO. 1	440227
- AVUNCS	GC/MS Volatiles Surrogates (8260)			1
	4-Bromofluorobenzene	109	-	'
	Dibromofluoromethane	110	-	
/ Am	Toluene-d8	97		
4 \$BNAS	GC/MS BNA Surrogates	71	-	-
	2,4,6-Tribromophenol			3
	2-Fluorobiphenyl	*		

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### SURROGATE STANDARD RECOVERY

LN ,	TEST CODE		SURROGATE COMPOUND	PERCENT	ACCEPTANCE	REF
						•••••
SAMPLE	ID:	HWPW-AOC3W-SOO			SAMPLE NO:	H446227
		2-Fluorophenol				
		Nitrobenzene-d5				
		Phenol-d5			-	
		p-Terphenyl-d14			-	
			not recovered due to the dilution taken as a result	-4 4b-	-	
		high concentration of	target analytes.	or the		
SAMPLE	ID:	HWPW-AOC3E-SOO				
					SAMPLE NO:	H446228
2 \$	VOA2S	GC/MS Volatiles Surr	gates (8260)			
		4-Bromofluorobenzene	•	107		1
		Dibromofluoromethane		112		
		Toluene-d8		99	-	
4 \$	BNAS	GC/MS BNA Surrogates		77	-	_
		2,4,6-Tribromophenol		48		3
		2-Fluorobiphenyl		57	•	
		2-Fluorophenol		45	-	
		Nitrobenzene-d5			•	
		Phenol-d5		. 50 49		
		p-Terphenyl-d14		55	-	
MPLE 1	ID: I	HWPW-AOC5W-SOO				
		*			SAMPLE NO: 1	1446229
2 \$\	/0A2S	GC/MS Volatiles Surro	gates (8260)			
		4-Bromofluorobenzene	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	99		1
		Dibromofluoromethane		5.753	•	
		Toluene-d8		108 95	-	
4 \$B	BNAS	GC/MS BNA Surrogates		93	•	_
		2,4,6-Tribromophenol		*		3
		2-Fluorobiphenyl		*	-	
		2-Fluorophenol		*	-	
		Nitrobenzene-d5			-	
		Phenol-d5			-	
		p-Terphenyl-d14		*	-	
			ot recovered due to the dilution taken as a result o	# .4 4L-	-	
		high concentration of t	arget analytes.	or the		
MPLE II	D: HI	WPW-SB05-S19.5	,	S	SAMPLE NO: H	446230
2 <b>\$</b> V(	DA2S	GC/MS Volatiles Surrog	21ac (8240)			
		4-Bromofluorobenzene	aces (0200)	NOTICE 11		1
		Dibromofluoromethane		103	•	
		ono i caoi one triane		102	•	

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### SURROGATE STANDARD RECOVERY

N CODE SURROGATE COMPOUND	PERCENT	ACCEPTANC	E
	RECOVERY	LIMITS	REF
MPLE ID: HWPW-SB05-S19.5		SAMPLE NO:	H446230
Toluene-d8		OAN EL NO.	N44023U
4 \$BNAS GC/MS BNA Surrogates	100	-	
2,4,6-Tribromophenol			3
2-Fluorobiphenyl	49	-	
2-Fluorophenol	54	-	
Nitrobenzene-d5	44	-	
Phenol-d5	58	-	
p-Terphenyl-d14	50 48	-	
IPLE ID: HWPW-SB05-S24			
		SAMPLE NO:	H446231
2 \$VOA2S GC/MS Volatiles Surrogates (8260)			1
4-Bromofluorobenzene	102	-	1
Dibromofluoromethane	100		
Toluene-d8	104	-	
4 \$BNAS GC/MS BNA Surrogates			3
2,4,6-Tribromophenol	55	-	3
2-fluorobiphenyl	70	-	
2-Fluorophenol	50	-	
Nitrobenzene-d5	67		
Phenol-d5	65	-	
p-Terphenyl-d14	60	-	
PLE ID: HWPW-SB05-S34.5	S	AMPLE NO:	H446232
2 \$VOA2S GC/MS Volatiles Surrogates (8260)	<b>.</b>	un LL NO.	1440232
4-Bromofluorobenzene			1
Dibromofluoromethane	106	-	
Toluene-d8	99	-	
\$BNAS GC/MS BNA Surrogates	101	-	
2,4,6-Tribromophenol	2.50		3
2-Fluorobiphenyl	49	-	
2-Fluorophenol	59	-	
Nitrobenzene-d5	41	-	
Phenol-d5	70	-	
p-Terphenyl-d14	49 54	•	
LE ID: HWPW-SB05-S39		-	
	SA	MPLE NO: H	1446233
\$VOA2S GC/MS Volatiles Surrogates (8260) 4-Bromofluorobenzene			1
Dibromofluoromethane	103	-	•
	94		

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### SURROGATE STANDARD RECOVERY

.N	CODE	SURROGATE COMPOUND	 PERCENT RECOVERY	ACCEPTANC LIMITS	E REF
MPL	E ID:	HWPW-SB05-S39		SAMPLE NO:	H446233
		Toluene-d8			
4	\$BNAS	GC/MS BNA Surrogates	105	-	
		2,4,6-Tribromophenol			3
		2-Fluorobiphenyl	43	-	
		2-Fluorophenol	58	-	
		Nitrobenzene-d5	47	-	
		Phenol-d5	50	-	
		p-Terphenyl-d14	50	-	
		p respicitly to the	53	-	
MPL	E ID:	HWPW-SB05-S54		SAMPLE NO:	H446234
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			11-40234
_	- 1 - 1 - 1	4-Bromofluorobenzene			1
		Dibromofluoromethane	102	-	
		Toluene-d8	96	-	
4	\$BNAS		101	-	
7	PDNAS	GC/MS BNA Surrogates			3
		2,4,6-Tribromophenol	50	-	-
		2-Fluorobiphenyl	58	-	
		2-Fluorophenol	48	-	
		Nitrobenzene-d5	53	_	
		Phenol-d5	55	_	
		p-Terphenyl-d14	53	•	
PLE	ID: H	WPW-SB06-S4	_		
	01/01/00	,	•	SAMPLE NO:	H446235
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			1
		4-Bromofluorobenzene	107	-	1
		Dibromofluoromethane	109	-	
		Toluene-d8	96	-	
+ 5	BBNAS	GC/MS BNA Surrogates	70	-	_
		2,4,6-Tribromophenol	*		3
		2-Fluorobiphenyl	*	-	
		2-Fluorophenol	*	-	
		Nitrobenzene-d5	*	-	
		Phenol-d5		-	
		p-Terphenyl-d14	*	-	
		*The surrogates were not recovered due to the dilution	*	-	

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### LABORATORY CONTROL SAMPLE RECOVERY

CODE		LCS %	ACCEPTANCE LIMITS	
BATCH NO:	72083		SAMPLE NO: H3832	01
OVTCS	2 8260A TCL Volatiles in Soil			
	1,1-Dichloroethene			
	Benzene	99	-	
	Chlorobenzene	104	-	
	Toluene	102	• .	
	Trichloroethene	105	· -	
		82	•	
BATCH NO:	72161		SAMPLE NO: H38332	28
OVTCS2	8260A TCL Volatiles in Soil			
	1,1-Dichloroethane	400	-	
	Benzene	100	-	
	Chlorobenzene	104	-	
	Toluene	102		
	Trichloroethene	104	-	
		86	•	
BATCH NO:	72194		SAMPLE NO: H38339	0
OVTCS2	8260A TCL Volatiles in Soil			
	1,1-Dichloroethene			
	Benzene	94	-	
	Chlorobenzene	98	-	
9	Toluene	96	•	
	Trichloroethene	98	-	
	richtoroethene	84	-	
BATCH NO: 7	72203		SAMPLE NO: H383408	В
OSVTCS	TCL - Semi-volatile Extractables in Soil			
	1,2,4-Trichlorobenzene	/		
	1,4-Dichlorobenzene	51	-	
	2,4-Dinitrotoluene	45	-	
	2-Chlorophenol	50 //	-	
	4-Nitrophenol	49.	-	
	Acenaphthene	29 🗸	•	
	N-Nitrosodi-n-propylamine	44 1	•	
	Pentachlorophenol	45 /	•	
	Phenol	60√	•	
	Pyrene	39 🗸	•	
	p-chloro-m-cresol	<b>52</b> 🗸	•	
	D CITO U-111-CF8501	44 /		

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### LABORATORY CONTROL SAMPLE RECOVERY

CODE	DETERMINATION	LCS % RECOVERY	ACCEPTANCE LIMITS
BATCH NO: 7225	7		SAMPLE NO: H383486
OVTCS2 82	60A TCL Volatiles in Soil		SAMPLE NO: 1303400
	1-Dichloroethene		
	nzene	90	
	lorobenzene	92	-
	Luene	92	-
	ichloroethene	98	-
11	chtoroethene	75	•
BATCH NO: 72360			SAMPLE NO: H383623
I 685S Per	roleum Hydrocarbons	100.7	-
ATCH NO: 72449	•		SAMPLE NO: H383779
OSVTCS TCL	- Semi-volatile Extractables in Soil		07411 EE NO. 11303779
1.2	,4-Trichlorobenzene		
	-Dichlorobenzene	76	•
	-Dinitrotoluene	72	-
	hlorophenol	86	-
	itrophenol	70	-
	naphthene	55	
	tachlorophenol	79	-
Phe		90	
		65	• •
Pyr		82	-
	trosodi-n-propylamine	72	, <u>-</u> ,
p-ci	nloro-m-cresol	75	-
TCH NO: 72450			SAMPLE NO: H383781
OSVTCS TCL	- Semi-volatile Extractables in Soil		
1,2,	4-Trichlorobenzene	F0 /	
	Dichlorobenzene	59	•
2,4-	Dinitrotoluene	48	-
	lorophenol	80	-
	trophenol	55,	•
	aphthene	80	•
	achlorophenol	67	-
Phen		70	•
Pyre		47	•
	trosodi-n-propylamine	66	
n-Ch	loro-m-cresol	74	•
p-cn	tor o-iii-cresot	55	

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### METHOD BLANK DATA

TES	<b>-</b>		
COD	E DETERMINATION	RESULT	UNIT
BATCH NO:	72083	9	AND E NO
OVTC	S2 8260A TCL Volatiles in Soil	3	AMPLE NO: H383202
	1,2-Dichloroethane		
174	Benzene	< 5	ug/kg
	Chlorobenzene	< 5	
	Ethylbenzene	< 5	ug/kg
	Methylene chloride	< 5	ug/kg
	Toluene	< 5	ug/kg
	Xylenes (total)	< 5	ug/kg
	Aytenes (total)	< 5	ug/kg
BATCH NO:	72161	``	ug/kg
		SA	MPLE NO: H383329
OVTCS	seem ist votatiles in soil		
	1,2-Dichloroethane		
	Benzene	< 5	ug/kg
	Chlorobenzene	< 5	ug/kg
	Ethylbenzene	< 5	ug/kg
	Methylene chloride	< 5	ug/kg
	Toluene	< 5	ug/kg
	Xylenes (total)	< 5	ug/kg
ATCH NO:	7210/	< 5	ug/kg
	7 6 174	SAM	PLE NO: H383391
OVTCS2	8260A TCL Volatiles in Soil		PLE NO: H383391
	1,2-Dichloroethane		
	Benzene	< 5	ug/kg
	Chlorobenzene	< 5	ug/kg
	Ethylbenzene	< 5	
	Methylene chloride		ug/kg
	Toluene		ug/kg
	Xylenes (total)	_	ug/kg
	Ayrenes (total)	_	ug/kg
CH NO: 7	2203	```	ug/kg
		SAMP	LE NO: H383409
OSVTCS	TCL - Semi-volatile Extractables in Soil	574	11303407
	1,2,4-Trichlorobenzene		
	1,2-Dichlorobenzene	< 330	Jg/kg
	1,2-Diphenylhydrazine		1g/kg
	1,3-Dichlorobenzene		ig/kg
	1,4-Dichlorobenzene		ig/kg
	2,4,5-Trichlorophenol		ig/kg
	2,4,6-Trichlorophenol	-	g/kg
	2,4-Dichlorophenol		
	-7 Contorophenot	< 330 u	g/kg

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### METHOD BLANK DATA

TEST CODE			
	DETERMINATION	RESULT	UNIT
2 / Pi			
2,4-Dimethy		< 330	ug/kg
2,4-Dinitro		< 1,600	ug/kg
2,4-Dinitro		< 330	ug/kg
2,6-Dinitro		< 330	ug/kg
2-Chloronar		< 330	ug/kg
2-Chlorophe		< 330	ug/kg
2-Methylnap	nthalene	< 330	ug/kg
2-Methylphe		< 330	
2-Nitroanil		< 1,600	ug/kg
2-Nitrophen		< 330	ug/kg
3,3'-Dichlo	robenzidine	< 660	ug/kg ug/kg
3-Nitroanil		< 1,600	
4,6-Dinitro		< 1,600	ug/kg
4-Bromophen	phenylether	< 330	ug/kg ug/kg
4-Chloro-3-	nethylphenol	< 330	
4-Chloroanil		< 330	ug/kg ug/kg
4-Unitoropher	nylphenylether	< 330	ug/kg
4-Methylpher		< 330	
4-Nitroanili		< 1,600	ug/kg ug/kg
4-Nitropheno		< 1,600	
Acenaphthene		< 330	ug/kg
Acenaphthyle Anthracene	ne .	< 330	ug/kg
		< 330	ug/kg
Benzo(a)anth		< 330	ug/kg
Benzo(a)pyre		< 330	ug/kg
Benzo(b)fluo		< 330	ug/kg
Benzo(g,h,i)	perylene	< 330	ug/kg
Benzo(k)fluor	anthene	< 330	ug/kg
Benzoic acid		< 1,600	ug/kg
Benzyl alcoho		< 330	ug/kg
Butylbenzylph	thalate	< 330	ug/kg
Chrysene		< 330	ug/kg
Di-n-butyl ph	thalate	< 330	ug/kg
Di-n-butylpht	halate	< 330	ug/kg
Di-n-octylpht	halate	< 330	ug/kg
Dibenzo(a,h)a	nthracene	< 330	ug/kg
Dibenzofuran		< 330	ug/kg
Diethylphthal	ate	< 330	ug/kg
Dimethylphtha	late	< 330	ug/kg
Fluoranthene		< 330	ug/kg
Fluorene		< 330	ug/kg
Hexachlorobena		< 330	ug/kg
Hexachlorobuta		< 330	ug/kg
Hexachlorocycl	opentadiene	< 330	ug/kg

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### METHOD BLANK DATA

TEST		
CODE DETERMINATION	Beau.	
	RESULT UNIT	
Hexachloroethane		
Indeno(1,2,3-cd)pyrene	< 330 ug/k	g
Isophorone	< 330 ug/k	-
N-Nitrosodi-n-propylamine	< 330 ug/k	
N-Nitrosodiphenylamine	< 330 ug/k	
Naphthalene	< 330 ug/k	
Nitrobenzene	< 330 ug/k	
Pentachlorophenol	< 330 ug/kg	
Phenanthrene	< 1,600 ug/kg	
Phenol	< 330 ug/kg	1
Pyrene	< 330 ug/kg	
bis(2-Chloroethoxy)methane	< 330 ug/kg	
bis(2-Chloroethyl)ether	< 330 ug/kg	
bis(2-Chloroisopropyl)ether	< 330 ug/kg	
bis(2-Ethylhexyl)phthalate	< 330 ug/kg	
	< 330 ug/kg	
BATCH NO: 72257		
	SAMPLE NO	H383487
OVTCS2 8260A TCL Volatiles in Soil		
1,2-Dichloroethane		
Benzene	< 5 ug/kg	
Chlorobenzene	< 5 ug/kg	
Ethylbenzene	< 5 ug/kg	
Methylene chloride	< 5 ug/kg	
Toluene	< 5 ug/kg	
Xylenes (total)	< 5 ug/kg	
	< 5 ug/kg	
ATCH NO: 72360		
1685S Petroleum Hydrocarbone	SAMPLE NO:	H383624
1685S Petroleum Hydrocarbons	- 98	
TCH NO: 72449	< 20 mg/kg	
	SAMPLE NO:	H383780
OSVTCS TCL - Semi-volatile Extractables in Soil		
',2" Ipnenythydrazine		
2,4-Dimethylphenol	< 330 ug/kg	
2,4-Dinitrotoluene	< 330 ug/kg	
2,6-Dinitrotoluene	< 330 ug/kg	
2-Chloronaphthalene	< 330 ug/kg	
2-Methylnaphthalene	< 330 ug/kg	
4,6-Dinitro-o-cresol	< 330 ug/kg	
4-Nitrophenol	< 1,600 ug/kg	
Acenaphthene	< 1,600 ug/kg	
Acenaphthylene	< 330 ug/kg	

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#### METHOD BLANK DATA

TEST	•			
CODE	DETERMINATION	RESULT	UNIT	
	Anthracene			
	Benzo(a)anthracene	< 330	ug/kg	
	Benzo(a)pyrene	< 330	ug/kg	
	Chrysene	< 330	ug/kg	
	Di-n-butyl phthalate	< 330	ug/kg	
	Dibenzofuran	< 330	ug/kg	
	Fluoranthene	< 330	ug/kg	
	Fluorene	< 330	ug/kg	
		< 330	ug/kg	
	N-Nitrosodiphenylamine	< 330	ug/kg	
	Naphthalene Nitrobenzene	< 330	ug/kg	
	Pentachlorophenol	< 330	ug/kg	
	Phenanthrene	< 1,600	ug/kg	
	Phenol	< 330	ug/kg	
	Pyrene	< 330	ug/kg	
	· · · · · · · · · · · · · · · · · · ·	< 330	ug/kg	
	bis(2-Chloroethoxy)methane bis(2-Ethylhexyl)phthalate	< 330	ug/kg	
	Dist2-Ethythexyt)phthatate	< 330	ug/kg	
H NO: 7	2450	,	SAMPLE NO:	H383782
OSVTCS	TCL - Semi-volatile Extractables in Soil			
	1,2-Diphenylhydrazine	. 770		
	2,4-Dimethylphenol	< 330	ug/kg	
	2,4-Dinitrotoluene	< 330	ug/kg	
	2,6-Dinitrotoluene	< 330	ug/kg	
	2-Chloronaphthalene	< 330	ug/kg	
	2-Methylnaphthalene	< 330	ug/kg	
	4,6-Dinitro-o-cresol	< 330	ug/kg	
	4-Nitrophenol	< 1,600	ug/kg	
	Acenaphthene	< 1,600	ug/kg	
	Acenaphthylene	< 330	ug/kg	. 5
	Anthracene	< 330	ug/kg	
	Benzo(a)anthracene	< 330	ug/kg	
	Benzo(a)pyrene	< 330	ug/kg	
	Chrysene	< 330	ug/kg	
	Di-n-butyl phthalate	< 330	ug/kg	
	Dibenzofuran	< 330	ug/kg	
	Fluoranthene	< 330	ug/kg	
	Fluorene	< 330	ug/kg	
	N-Nitrosodiphenylamine	< 330	ug/kg	
	Naphthalene	< 330	ug/kg	
	Vitrobenzene	< 330	ug/kg	
	Pentachlorophenol	< 330	ug/kg	
	Phenanthrene	< 1,600	ug/kg	
	remaining at the	< 330	ug/kg	

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ug/kg

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### METHOD BLANK DATA

ST				
DE DETERMI	NATION	RESULT	UNIT	
Phone				
riienot				
Pyrene		< 330	ug/kg	
bis(2-Chloroethoxy)methane		< 330	ug/kg	
bis(2-Ethylhexyl)phthalata		< 330	ug/kg	
,		< 330	ug/kg	
	Phenol	Phenol Pyrene bis(2-Chloroethoxy)methane	Phenol Pyrene bis(2-Chloroethoxy)methane bis(2-Ethylhexyl)phthalate  PERMINATION RESULT  330 330 330	Phenol Pyrene Sis(2-Chloroethoxy)methane bis(2-Ethylhexyl)phthalate  PERMINATION RESULT UNIT  VAID UNIT  4 330 ug/kg  5 330 ug/kg

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### MATRIX SPIKE AND MATRIX SPIKE DUPLICATE DATA

CODE		MS RESULT	MSD RESULT	UNITS	RPD	MS PCT RCVRY	MSD PC
						KCVK1	RCVRY
BATCH NO:	72083						
					SA	MPLE NO: H44	6089
OVTCS	102 101411103 111 3011						
	1,1-Dichloroethene	42.9	43.9	ug/kg	2.37	107	440
	Benzene	43.4	43.0	ug/kg	1.02	107	110
	Chiorobenzene	41.1	41.0	ug/kg	0.12	103	107
	Toluene	44.3	43.5	ug/kg	1.73	111	102
	Trichloroethene	38.7	38.3	ug/kg	1.06	97	109 96
BATCH NO:	72203				CAM	PLE NO: H446	
OCUTO	2.70				SAM	PLE NO: H446	221
037163	TCL - Semi-volatile Extractables						
	1,2,4-Trichlorobenzene	59.7	54.1	ug/kg	9.84	60	54
	1,4-Dichlorobenzene	53.5	47.3	ug/kg	12.3	54	47
	2,4-Dinitrotoluene	66.1	58.9	ug/kg	11.5	66	59
	2-Chlorophenol	102	92.1	ug/kg	9.71	51	46
	4-Nitrophenol	117	106	ug/kg	10.5	59	53
	Acenaphthene	64.6	58.0	ug/kg	10.8	65	58
	N-Nitrosodi-n-propylamine	56.6	51.8	ug/kg	8.86	57	
	Pentachlorophenol	111	93.6	ug/kg	17.1	56	52
	Phenol	100	97.1	ug/kg	2.94		47
	Pyrene	70.6	64.9	ug/kg	8.40	50	48
	p-Chloro-m-cresol	126	120	ug/kg	4.80	71 63	65 60
BATCH NO:	72257				04440		
01/7000	00/0/				SAMP	LE NO: H4462	26
OVTCS2	The votatites in soil						
	1,1-Dichloroethene	35.7	37.5	ug/kg	5.00	89	94
	Benzene	38.4	39.2	ug/kg	2.09	96	-
	Chlorobenzene	36.6	37.6	ug/kg	2.48	92	98
	Toluene	38.6	39.0	ug/kg	1.06	96	94
	Trichloroethene	37.0	39.4	ug/kg	6.18	92	97 98
ATCH NO: 7	2257				CAMDI	.E NO: H44623	
OVTCS2	8260A TCL Volatiles in Soil				JAMPI	.E NU: H4402	
311032	1,1-Dichloroethene						
	Benzene	39.5	38.2	ug/kg	3.32	99	96
	Chlorobenzene	40.0	39.6	ug/kg	1.03	100	99
		38.3	39.1	ug/kg	2.17	96	98
	Toluene	38.5	40.8	ug/kg	5.77	96	
	Trichloroethene	38.8	34.7	ug/kg	11.2	97	102 87

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### MATRIX SPIKE AND MATRIX SPIKE DUPLICATE DATA

TEST		MS	MSD			MS PCT	
CODE	DETERMINATION	RESULT	RESULT	UNITS	RPD	RCVRY	MSD PCT RCVRY
BATCH NO:	72360						
	. = 55				5	SAMPLE NO: H44	6223
1685s	Petroleum Hydrocarbons	370	350	mg/kg	4.1	98.9	93.5
BATCH NO:	72360						
			*		S	AMPLE NO: H44	6294
16858	Petroleum Hydrocarbons	23,000	24,000				
	* The concentration of the analyte	prevented accu	rate determin	mg/kg	5.5	*	*
	matrix spike.	,	. acc decermin	action of the			
BATCH NO:	72449						
					S	AMPLE NO: H446	5230
OSVTCS	TCL - Semi-volatile Extractables i	n Soil					
	1,2,4-Trichlorobenzene	56	54	ug/kg	3.6	56	-,
	1,4-Dichlorobenzene	59	60	ug/kg	1.7	59	54
	2,4-Dinitrotoluene	53	56	ug/kg	5.6	53	54
	2-Chlorophenol	100	110	ug/kg	9.5	50	54
	4-Nitrophenol	82	68	ug/kg	19	41	54
	Acenaphthene	56	53	ug/kg	5.6	56	54
	N-Nitrosodi-n-propylamine	55	59	ug/kg	7.0	55	54
	Pentachlorophenol	100	130	ug/kg	26	50	54
	Phenol	110	110	ug/kg	0	55	54
	Pyrene	56	59	ug/kg	5.2	56	55
	p-Chloro-m-cresol	120	110	ug/kg	9.1	60	54 54
BATCH NO: 7	2450					•	, ,4
					SA	MPLE NO: H4464	424
OSVTCS	TCL - Semi-volatile Extractables in	Soil					
	1,2,4-Trichlorobenzene	2,600	2,300	ug/kg	12.0		
	1,4-Dichlorobenzene	2,600	2,600		12.2	79	70
	2,4-Dinitrotoluene	2,300	2,300	ug/kg ug/kg	0	79	79
	2-Chlorophenol	4,000	4,300		0	70	70
	4-Nitrophenol	990	990	ug/kg	7.22	61	65
	Acenaphthene	4,300	3,600	ug/kg ug/kg	0	15	15
	N-Nitrosodi-n-propylamine	1,600	1,600		17.7	130	109
	Pentachlorophenol	2,000	1,600	ug/kg	0	48	48
	Phenol	4,600	4,000	ug/kg	22.2*	30	24
	Pyrene	4,000	3,600	ug/kg	14.0	70	61
	p-Chloro-m-cresol	5.000	4,600	ug/kg ug/kg	10.5	121	109
*	RPD outside of QC acceptance limits	•	.,000	ug/ kg	8.33	76	70

	PRO IECT MANA				
Ier Zext	OSEC I VAINE	SILELOCAT			
Att of the Barre			CHAIN OF CUSTODY RECORD	DY RECORD	
770000				)	C.O.C. #
SAMPLERS NAME & SIGNATIBE	00	PROJECT #		\$7 \$3)	SHIP TO
		CONTACT & PHONE	MALL HOUSE	11/1/2/	
SAMPLE#			11/1/100	143	
	DATE TIME COMP.	SAMPLE # OF CONTAINERS		LSNO STANO	LAB. CONTACT & PHONE
HAWPIN-MUI4-SOIT	X21/6-14:78	7711100		YES NO YES NO	*REMARKS:
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8	3/3/7 11:10	11000	Sigo		
	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	t -	allo		
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HWPW SKN29JUM-211	04:70	5 <b>0</b> 05	N N N	1	then date is also
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			Jel Caurier Survios	but day	is required

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	72	0/8/							T		
C.O.C. #		-Sommers 488-	*REMARKS:						1		
DY RECORD	SINILE	14-	YES NO YES NO						1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,	*REMARKS:	7 EB 7
CHAIN OF CUSTODY RECORD			ree	358	930	600	273	337		E RECEIVED BY	METHOD OF SHIPMENT CLIPS COUNTER SENVICE
	SISATA	S <sub>8</sub>								DATE & TIME DATE & TIME	HIPMENT POLY G
SITELOCATIN 4910 LIBERTY RO HOUSTOW, TX	PROJECT #1402&9 CONTACT & PHONE	SAMPLE CONTAINERS	2 2 7	10	<ul><li>N</li><li>→</li><li>N</li></ul>		<del></del>	2	3	HELEASED BY RELEASED BY	METHOD OF SH
NAME LVING	2	BARD 8	ADC3		\$805	××	→ <b>→</b>	X SB06		RECEIVED BY	CEIVED AT 148. BY
PROJECT NAME HOUSTON WOOD PEESERVING	13	DATE TIME COMP	3/4/97 08:25	82:58	10:30	05:01	82:11	H:33		DATE & TIME REDAINE RE	JAGE AME PRECEIVED AT 148. BY
Terranext	303/	A COUNTRY OF	HWPW-NOC3W-500 HWPW-NOC3E-500	HWPW- ACC 5 1 - 500	HWPW - SB05 - 514.5	474/PW · SB05 · S34,5 MWPW · SB05 · S39	HWPWI-SBOS - 554	HWPW-SBOG-SH		Jally S	The Color of the C

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having store No.

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April 11, 1997 Report No.: 00060410 Section A Page 1

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB05-S54

SAMPLE NO: H446419

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 04-MAR-97 1125

DATE RECEIVED: 06-MAR-97

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
			,		
1	OVTCS2	8260A TCL Volatiles in Soil			
	011002	1,2-Dichloroethane			
		Benzene	. 1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
		Xylenes (total)	1	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	1	< 5	ug/kg
	337733	1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	2	< 660	ug/kg
		2,4-Dinitrotoluene	2	< 660	ug/kg
		2,6-Dinitrotoluene	2	< 660	ug/kg
		2-Chloronaphthalene	2	< 660	ug/kg
		2-Methylnaphthalene	2	< 660	ug/kg
		4,6-Dinitro-o-cresol	2	< 660	ug/kg
		4-Nitrophenol	2	< 3,300	ug/kg
		Acenaphthene	2		ug/kg
		Acenaphthylene	2	< 660	ug/kg
		Anthracene	2	< 660	ug/kg
		Benzo(a)anthracene	2	< 660	ug/kg
			2	< 660	ug/kg
		Benzo(a)pyrene Chrysene	2	< 660	ug/kg
			2	< 660	ug/kg
		Di-n-butyl phthalate Dibenzofuran	2	< 660	ug/kg
		Fluoranthene	2	< 660	ug/kg
		Fluorene	2	< 660	ug/kg
			2	< 660	ug/kg
		N-Nitrosodiphenylamine	2	< 660	ug/kg
		Naphthalene	2	< 660	ug/kg
		Nitrobenzene	2		ug/kg
		Pentachlorophenol Phenanthrene	2 .		ug/kg
		Phenol	2	· ·	ug/kg
			2		ug/kg
		Pyrene his/2-Chlorosthaman	2		ıg/kg
		bis(2-Chloroethoxy)methane	2		ıg/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB05-S54
SAMPLE NO: H446419

TEST DILUTION
LN CODE DETERMINATION FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate

2 < 660 ug/kg

COMMENTS: The reporting limits for semi-volatiles are elevated due to the dilution

required because of matrix interferences.

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB06-S19

SAMPLE NO: H446420

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 04-MAR-97 1452

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
•	011032	1,2-Dichloroethane		a fi	
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	44	ug/kg
		Toluene	1	5	ug/kg
		Xylenes (total)	1	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	1	74	ug/kg
,	034163	1,2-Diphenylhydrazine			
			20	< 6,600	ug/kg
		2,4-Dimethylphenol	20	< 6,600	ug/kg
		2,4-Dinitrotoluene	20	< 6,600	ug/kg
		2,6-Dinitrotoluene	20	< 6,600	ug/kg
		2-Chloronaphthalene	20	< 6,600	ug/kg
		2-Methylnaphthalene	20	28,000	ug/kg
		4,6-Dinitro-o-cresol	20 <	33,000	ug/kg
		4-Nitrophenol	20 <	33,000	ug/kg
		Acenaphthene	20	18,000	ug/kg
		Acenaphthylene	20	< 6,600	ug/kg
. ;		Anthracene	20	15,000	ug/kg
		Benzo(a)anthracene	20	< 6,600	ug/kg
		Benzo(a)pyrene	20	< 6,600	ug/kg
		Chrysene	20	< 6,600	ug/kg
		Di-n-butyl phthalate	20	< 6,600	ug/kg
		Dibenzofuran	20	18,000	ug/kg
		Fluoranthene	20	-	ug/kg
		Fluorene	20		ug/kg
		N-Nitrosodiphenylamine	20	-	ug/kg
		Naphthalene	20	11 12 5 20 20 20 20	ug/kg
		Nitrobenzene	20		ug/kg
		Pentachlorophenol		-	ug/kg
		Phenanthrene	20	•	ug/kg
		Phenol	20		ug/kg
		Pyrene	20	100	ug/kg
	1	bis(2-Chloroethoxy)methane	20		ug/kg
				-,	

## REPORT OF LABORATORY ANALYSIS

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April 11, 1997
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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB06-S19
SAMPLE NO: H446420

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
		bis(2-Ethylhexyl)phthalate			
8	S401	SW1312 - SPLP Leaching Procedure - Metals and SVOA	20	< 6,600	ug/kg
9	\$402	SW1312 - SPLP Leaching Procedure - ZHE		Done	
14	16858	Petroleum Hydrocarbons		Done	
17	OVTCW2	to the state of th	1	370	mg/kg
		1,2-Dichloroethane		_	
		Benzene	1	< 5	ug/L
		Chlorobenzene	1	16	ug/L
		Ethylbenzene	1	< 5	- <b>0.</b> -
		Methylene chloride		< 5	ug/L
		Toluene	1 1	< 5	ug/L
		Xylenes (total)	1	< 5	ug/L
19	OSVTCW	TCL - Semi-volatile Extractables in Water	1	< 5	ug/L
		1,2-Diphenylhydrazine	1	. 10	
		2,4-Dimethylphenol	1	< 10	ug/L
		2,4-Dinitrotoluene	1	< 10	-0, -
		2,6-Dinitrotoluene	1	< 10	-0, -
		2-Chloronaphthalene	1	< 10 < 10	ug/L
		2-Methylnaphthalene	1	100	ug/L
		4,6-Dinitro-o-cresol	1	< 50	ug/L
		4-Nitrophenol	1		ug/L ug/L
		Acenaphthene	1		
		Acenaphthylene	1		ug/L ug/L
		Anthracene	1		ug/L
		Benzo(a)anthracene	· 1	< 10	
		Benzo(a)pyrene	1		ug/L
		Chrysene	1		ug/L
		Di-n-butylphthalate	i	< 10	.= 0
		Dibenzofuran	. 1		ug/L
		Fluoranthene	1		ug/L
		Fluorene	i		ug/L
		N-Nitrosodiphenylamine	1		ug/L
		Naphthalene	5	-	ug/L
		Nitrobenzene	1		ug/L
		Pentachlorophenol	1		ug/L
		Phenanthrene	1		ug/L
		Phenol	1		ug/L
		Pyrené	1		ug/L
		bis(2-Chloroethoxy)methane	1		ug/L
		bis(2-Ethylhexyl)phthalate	1		ug/L

COMMENTS: Continued on next page.

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB06-S19

SAMPLE NO: H446420

TEST

CODE

LN

DETERMINATION

DILUTION

**FACTOR** 

RESULT UNITS

COMMENTS: Results for the SPLP leachate are reported in ug/L.

The reporting limits for soil semi-volatiles are elevated due to the dilution required because of high analyte concentration.

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB06-S24

SAMPLE NO: H446421

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 04-MAR-97 1501

DATE RECEIVED: 06-MAR-97

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
•	01.002	1,2-Dichloroethane			
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	. 1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
		Xylenes (total)	1	< 5	ug/kg
3	OSVTCS		1	< 5	ug/kg
-	001100	TCL - Semi-volatile Extractables in Soil 1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	ug/kg
		2,6-Dinitrotoluene	1	< 330	ug/kg
			1	< 330	ug/kg
		2-Chloronaphthalene	1	< 330	ug/kg
		2-Methylnaphthalene	1	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg
		4-Nitrophenol	1	< 1,600	ug/kg
		Acenaphthene	1	< 330	ug/kg
		Acenaphthylene Anthracene	1	< 330	ug/kg
			1	< 330	ug/kg
		Benzo(a)anthracene	. 1	< 330	ug/kg
		Benzo(a)pyrene	1	< 330	ug/kg
		Chrysene	1	< 330	ug/kg
		Di-n-butyl phthalate Dibenzofuran	1	< 330	ug/kg
			1	< 330	ug/kg
		Fluoranthene	1		ug/kg
		Fluorene	1		ug/kg
		N-Nitrosodiphenylamine	1		ug/kg
		Naphthalene	1		ug/kg
		Nitrobenzene	1		ug/kg
		Pentach Loropheno L	1 <		ug/kg
		Phenanthrene	1		ug/kg
		Phenol	1		ug/kg
		Pyrene	1		ug/kg
	1	bis(2-Chloroethoxy)methane	1		ug/kg

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Section A Page 7

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB06-S24
SAMPLE NO: H446421

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
14	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	1 1		ug/kg mg/kg

April 11, 1997
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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB06-S49

SAMPLE NO: H446422

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 04-MAR-97 1450

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION			
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS	
••••						
		••••				
1	OVTCS2	in the votablitab in bott				
		1,2-Dichloroethane	1	< 5	ug/kg	
		Benzene	1	< 5	ug/kg	
		Chlorobenzene	1	< 5	ug/kg	
		Ethylbenzene	1	< 5	ug/kg	
		Methylene chloride	1	< 5	ug/kg	
		Toluene	1	< 5	ug/kg	
		Xylenes (total)	1	< 5	ug/kg	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil				
		1,2-Diphenylhydrazine	1	< 330	ug/kg	
		2,4-Dimethylphenol	1	< 330	ug/kg	
		2,4-Dinitrotoluene	1	< 330	ug/kg	
		2,6-Dinitrotoluene	1	< 330	ug/kg	
		2-Chloronaphthalene	1	< 330	ug/kg	
		2-Methylnaphthalene	1	< 330	ug/kg	
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg	
		4-Nitrophenol	1	< 1,600	ug/kg	
		Acenaphthene	1	< 330		
		Acenaphthylene	1	< 330	ug/kg	
		Anthracene	1	< 330	ug/kg	
		Benzo(a)anthracene	1	< 330	ug/kg	
		Benzo(a)pyrene	1	< 330	ug/kg	
		Chrysene	1	< 330	ug/kg	
		Di-n-butyl phthalate	1		ug/kg	
		Dibenzofuran	1	< 330 < 330	ug/kg	
		Fluoranthene	1		ug/kg	
		Fluorene	1		ug/kg	
		N-Nitrosodiphenylamine			ug/kg	
		Naphthalene	1		ug/kg	
		Nitrobenzene	1		ug/kg	
		Pentachlorophenol	1		ug/kg	
		Phenanthrene			ug/kg	
		Phenol	1		ug/kg	
		Pyrene	1		ug/kg	
		bis(2-Chloroethoxy)methane	1 *		ug/kg	
		2.3(E ditto) detiloxy/liletilatie	1	< 330	ug/kg	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-SB06-S49

SAMPLE NO: H446422

TEST

LN

DETERMINATION

DILUTION

RESULT UNITS

bis(2-Ethylhexyl)phthalate

1 < 330 ug/kg

April 11, 1997
Report No.: 00060410
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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB03-S5

SAMPLE NO: H446423

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 05-MAR-97 0815

DATE RECEIVED: 06-MAR-97

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	_		
		Benzene	5	< 25	
		Chlorobenzene	5	< 25	ug/kg
	•	Ethylbenzene	5	< 25	ug/kg
		Methylene chloride	5	31	ug/kg
		Toluene	5	< 25	ug/kg
		Xylenes (total)	5	< 25	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	5	89	ug/kg
		1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	10	< 3,300	ug/kg
		2,4-Dinitrotoluene	10	< 3,300	ug/kg
		2,6-Dinitrotoluene	10	< 3,300	ug/kg
		2-Chloronaphthalene	10	< 3,300	ug/kg
		2-Methylnaphthalene	. 10	< 3,300	ug/kg
		4,6-Dinitro-o-cresol	50	78,000	ug/kg
		4-Nitrophenol	10	< 16,000	ug/kg
		Acenaphthene	10	< 16,000	ug/kg
		Acenaphthylene	10	50,000	ug/kg
		Anthracene	10	< 3,300	ug/kg
		Benzo(a)anthracene	10	24,000	ug/kg
		Benzo(a)pyrene	10	7,900	ug/kg
		Chrysene	10	< 3,300	ug/kg
			10	8,600	ug/kg
		Di-n-butyl phthalate Dibenzofuran	10	< 3,300	ug/kg
		Fluoranthene	10	40,000	ug/kg
		Fluorene	50	84,000	ug/kg
			10	46,000	ug/kg
		N-Nitrosodiphenylamine	10	< 3,300	
		Naphthalene Nitropenzene	50		ug/kg
			10		ug/kg
		Pentachlorophenol	10		ug/kg
		Phenanthrene Phenol	50		ug/kg
			10		ug/kg
		Pyrene bio(2) Obligation and an artistic and a second and a second and a second and a second and a second and a second	10	•	ug/kg
		bis(2-Chloroethoxy)methane	10	< 3,300	

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB03-S5
SAMPLE NO: H446423

	TEAT				
	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
		bis(2-Ethylhexyl)phthalate	10	< 3,300	um/lem
8	S401	SW1312 - SPLP Leaching Procedure - Metals and SVOA	10	\ 3,300 Done	ug/kg
9	S402	SW1312 - SPLP Leaching Procedure - ZHE		Done	
14	1685s	Petroleum Hydrocarbons	1	670	mm /lea
15	OVTCW2	•	•	670	mg/kg
		1,2-Dichloroethane	. 1	< 5	
		Benzene	i	< 5	ug/L ug/L
		Chlorobenzene	i	< 5	ug/L
		Ethylbenzene	i 1	< 5	
		Methylene chloride	1	< 5	ug/L
		Toluene	1	< 5	ug/L
		Xylenes (total)	1	< 5	ug/L
17	OSVTCW	TCL - Semi-volatile Extractables in Water	•	` `	ug/ L
		1,2-Diphenylhydrazine	1	< 10 *	ug/L
		2,4-Dimethylphenol	· 1	< 10	ug/L
		2,4-Dinitrotoluene	1	< 10	ug/L
		2,6-Dinitrotoluene	1	< 10	ug/L
		2-Chloronaphthalene	1	< 10	ug/L
		2-Methylnaphthalene	1	< 10	ug/L
		4,6-Dinitro-o-cresol	1	< 50	ug/L
		4-Nitrophenol	1	< 50	ug/L
		Acenaphthene	1	< 10	ug/L
		Acenaphthylene	1	< 10	
		Anthracene	1		ug/L
		Benzo(a)anthracene	1 1		ug/L
		Benzo(a)pyrene	1		ug/L
		Chrysene	1		ug/L
		Di-n-butylphthalate	1		ug/L
		Dibenzofuran	1	< 10	ug/L
		Fluoranthene	1	< 10	ug/L
		Fluorene	1	< 10	ug/L
		N-Nitrosodiphenylamine	1	< 10	ug/L
		Naphthalene	1	< 10	ug/L
		Nitrobenzene	1	< 10	ug/L
		Pentachlorophenol	1	< 50	ug/L
		Phenanthrene	1	< 10	ug/L
		Phenol	1	< 10	ug/L
		Pyrene	, 1	< 10	ug/L
		bis(2-Chloroethoxy)methane	1	< 10	ug/L
		bis(2-Ethylhexyl)phthalate	1	< 10	ug/L

COMMENTS: Continued on next page.

> Tel: 713-488-1810 Fax: 713-488-4661

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB03-S5
SAMPLE NO: H446423

TEST

CODE

LN

DETERMINATION

DILUTION

**FACTOR** 

RESULT UNITS

COMMENTS: Results for the SPLP leachate are reported in ug/L.

The reporting limits on the volatile and semi-volatile analyses of the soil are elevated due to matrix interferences and high analyte concentration.

\* The surrogates were not recovered in the SPLP leachate for semi-volatile analysis. The sample will be re-leached, re-analyzed, and reported on a separate report.

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB03-S19

SAMPLE NO: H446424

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 05-MAR-97 0830

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	um /lem
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	38	J
		Methylene chloride	1	6	ug/kg
		Toluene	1	< 5	ug/kg
		Xylenes (total)	1	99	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	'	77	ug/kg
		1,2-Diphenylhydrazine	5	< 1,600*	ug/kg
		2,4-Dimethylphenol	5	< 1,600	ug/kg ug/kg
		2,4-Dinitrotoluene	5	< 1,600	ug/kg ug/kg
		2,6-Dinitrotoluene	5	< 1,600	ug/kg ug/kg
		2-Chloronaphthalene	5	< 1,600	ug/kg ug/kg
		2-Methylnaphthalene	5	11,000	
		4,6-Dinitro-o-cresol	5	< 8,200	
		4-Nitrophenol	5	< 8,200	ug/kg
		Acenaphthene	5	6,100	-
		Acenaphthylene	5	< 1,600	ug/kg
		Anthracene	5	-	
		Benzo(a)anthracene	5	-	• •
		Benzo(a)pyrene	5		
		Chrysene	5		
		Di-n-butyl phthalate	5	< 1,600	
		Dibenzofuran	5		ug/kg
		Fluoranthene	5	7,900	
		Fluorene	5		ug/kg
		N-Nitrosodiphenylamine	5	-	ug/kg
		Naphtha lene	5		ug/kg
		Nitrobenzene	5	•	ug/kg
		Pentachlorophenol	5	-	ug/kg
		Phenanthrene	5	16,000	
		Phenol	5		ug/kg
		Pyrene	5		ug/kg
		bis(2-Chloroethoxy)methane	5		ug/kg
	æ.*		-	.,555	~3/ \B

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB03-S19
SAMPLE NO: H446424

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS	
		bis(2-Ethylhexyl)phthalate			•	
8	S401		5	< 1,600	ug/kg	
9	\$402	SW1312 - SPLP Leaching Procedure - Metals and SVOA SW1312 - SPLP Leaching Procedure - ZHE		Done		
14	1685S	Petroleum Hydrocarbons		Done		
15	OVTCW2		1	70	mg/kg	
	OVIOWE	1.2-Dichloroethane				
		Benzene	1	< 5	ug/L	
		Chlorobenzene	1	< 5	- O	
		Ethylbenzene	1		ug/L	
		Methylene chloride	1		ug/L	
		Toluene	1	< 5		
		Xylenes (total)	1	< 5	0.	
17	OSVTCW	TCL - Semi-volatile Extractables in Water	1	< 5	ug/L	
		1,2-Diphenylhydrazine				
		2,4-Dimethylphenol	1	< 10		
		2,4-Dinitrotoluene	1	< 10	•	
		2,6-Dinitrotoluene	1	< 10	0, -	
		2-Chloronaphthalene	1	< 10		
		2-Methylnaphthalene	. 1	< 10	ug/L	
		4,6-Dinitro-o-cresol	1	41	ug/L	
		4-Nitrophenol	1	< 50	-0, -	
		Acenaphthene	1	< 50	ug/L	
		Acenaphthylene	1	40	ug/L	
		Anthracene	1		ug/L	
		Benzo(a)anthracene	1	< 10	ug/L	
		Benzo(a)pyrene	1		ug/L	
		Chrysene	1		ug/L	
		Di-n-butylphthalate	1		ug/L	
		Dibenzofuran	1	< 10 35		
		Fluoranthene	1		ug/L ug/L	
		Fluorene	1		ug/L ug/L	
		N-Nitrosodiphenylamine	1		ug/L	
		Naphthalene	1		ug/L	
		Nitrobenzene	1		ug/L	
		Pentachlorophenol	1		ug/L	
		Phenanthrene	1		ug/L	
		Phenol	1		ug/L	
		Pyrene	1		ug/L	
		bis(2-Chloroethoxy)methane	1		ug/L	
		bis(2-Ethylhexyl)phthalate	1		ug/L	

COMMENTS: Continued on next page.

> Tel: 713-488-1810 Fax: 713-488-4661

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HWPW-SB03-S19 SAMPLE NO: H446424

**TEST** 

CODE

LN

DETERMINATION

DILUTION

**FACTOR** 

RESULT UNITS

COMMENTS: Results for the SPLP leachate are reported in ug/L.

\* The internal standard recoveries were outside of QC acceptance limits due to matrix interference which was confirmed by re-analysis.

The reporting limits for soil semi-volatiles are elevated due to the dilution required because of high analyte concentration.

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< 330 ug/kg

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB03-S24

SAMPLE NO: H446425

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142
PACE CLIENT: 620437

P.O. NO: 03219

P.O. NO: 03219

DATE SAMPLED: 05-MAR-97 0835

DATE RECEIVED: 06-MAR-97
PROJECT MANAGER: Elessa Sommers

OVTCS2   8260A TCL Volatiles in Soil   1,2-Dichloroethane   1		TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS	
1,2-Dichloroethane   1	1 0	TOO?	02/01 77				
Benzene	1 00	V1632					
Chlorobenzene Chlorobenzene Chlorobenzene Chlorobenzene Chlorobenzene Chlorobenzene Chlorobenzene Chlorobenzene Chlorobenzene Methylene chloride Toluene Xylenes (total) Sylenes (total)  Sylenes (total)  Sylenes (total)  Sylenes (total)  Sylenes (total)  1				1	< 5	uatka	
Ethylbenzene  Rethylene chloride Toluene Xylenes (total)  SVICTS TCL - Semi-volatile Extractables in Soil 1,2-Diphenylhydrazine 2,4-Dimitrylphenol 2,4-Dimitrylphenol 3,6-Dimitrylphenol				1		-37 113	
Methylene chloride         1         45         ug/kg           Toluene         1         <5				1			
Toluene				1			
Xylenes (total)   29				1		-37	
1				1		-0,	
1,2-Diphenylhydrazine 2,4-Dimethylphenol 2,4-Dimethylphenol 1 < 330 ug/kg 2,4-Dinitrotoluene 1 < 330 ug/kg 2,4-Dinitrotoluene 1 < 330 ug/kg 2,6-Dinitrotoluene 1 < 330 ug/kg 2-Chloronaphthalene 1 < 330 ug/kg 2-Methylnaphthalene 1 < 330 ug/kg 4,6-Dinitro-o-cresol 1 1,100 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg Acenaphthylene 1 1,100 ug/kg Anthracene 1 1,100 ug/kg Anthracene 1 2,330 ug/kg Benzo(a)anthracene 1 860 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Dibenzofuran 1 1,200 ug/kg N-Nitrobenzene 1 1,200 ug/kg N-Nitrobenzene 1 1,300 ug/kg Naphthalene 1 1,300 ug/kg Naphthalene 1 1,300 ug/kg Pentachlorophenol 1 3,600 ug/kg Phenol Pyrene bis(2-Chloroethoxy)methane	O.C.	VTCC		1			
2,4-Dimethylphenol 2,4-Dimitrotoluene 1	US	1163	1 2-Diebardhad :			ug/ kg	
2,4-Dinitrotoluene 2,6-Dinitrotoluene 1				1	< 330	ua/ka	
2,6-Dinitrotoluene 2-Chloronaphthalene 1 < 330 ug/kg 2-Methylnaphthalene 1 < 330 ug/kg 2-Methylnaphthalene 1			2.4-Diminuo	1		-3/ 113	
2-Chloronaphthalene 1 < 330 ug/kg 2-Methylnaphthalene 1 < 330 ug/kg 4,6-Dinitro-o-cresol 1 1,100 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg Acenaphthene 1 1,100 ug/kg Acenaphthylene 1 1,100 ug/kg Anthracene 1 < 330 ug/kg Benzo(a)anthracene 1 < 330 ug/kg Benzo(a)pyrene 1 < 330 ug/kg Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 1,200 ug/kg N-Nitrosodiphenylamine 1 1,300 ug/kg Naphthalene 1 1,300 ug/kg Naphthalene 1 1,300 ug/kg Naphthalene 1 1,300 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenol 1 3,600 ug/kg Pyrene bis(2-Chloroethoxy)methane				1		-9, 1.9	
2-Methylnaphthalene 1 < 330 ug/kg 4,6-Dinitro-o-cresol 1 1,100 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg 4-Nitrophenol 1 < 1,000 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nitrophenol 1 < 330 ug/kg 4-Nit				1		-0,	
4,6-Dinitro-o-cresol 1 1,100 ug/kg 4-Nitrophenol 1 < 1,600 ug/kg Acenaphthene 1 < 1,600 ug/kg Acenaphthylene 1 1,100 ug/kg Anthracene 1 1,100 ug/kg Anthracene 1 0,000 ug/kg Benzo(a)anthracene 1 860 ug/kg Benzo(a)pyrene 1 0,330 ug/kg Chrysene 1 0,330 ug/kg Di-n-butyl phthalate 1 0,330 ug/kg Dibenzofuran 1 0,330 ug/kg Fluorene 1 1,200 ug/kg N-Nitrosodiphenylamine 1 1,300 ug/kg Naphthalene 1 1,300 ug/kg Nitrobenzene 1 4,600 ug/kg Pentachlorophenol 1 0,330 ug/kg Phenot 1 0,330 ug/kg Pyrene 1 3,600 ug/kg Pyrene 1 3,600 ug/kg				1		0	
4-Nitrophenol 1 < 1,600 ug/kg Acenaphthene 1 < 1,600 ug/kg Acenaphthylene 1 1,100 ug/kg Anthracene 1 1,100 ug/kg Anthracene 1 1,100 ug/kg Benzo(a)anthracene 1 860 ug/kg Benzo(a)pyrene 1 330 ug/kg Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluorene 1 1,200 ug/kg N-Nitrosodiphenylamine 1 1,300 ug/kg Naphthalene 1 1,300 ug/kg Nitrobenzene 1 4,600 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 3,600 ug/kg Pyrene 1 3,600 ug/kg Pyrene bis(2-Chloroethoxy)methane				1		-	
Acenaphthene Acenaphthylene Acenaphthylene Anthracene Anthracene Benzo(a)anthracene Benzo(a)pyrene Chrysene Di-n-butyl phthalate Dibenzofuran Fluoranthene Fluorene N-Nitrosodiphenylamine Naphthalene Nitrobenzene Pentachlorophenol Phenanthrene Phenol Pyrene bis(2-Chloroethoxy)methane  1 (1,000 ug/kg 1,100 ug/kg				1			
Acenaphthylene Acenaphthylene Anthracene Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(a)pyrene Chrysene Di-n-butyl phthalate Dibenzofuran Fluoranthene Fluorene N-Nitrosodiphenylamine Naphthalene Nitrobenzene Pentachlorophenol Phenanthrene Phenol Pyrene bis(2-Chloroethoxy)methane  1,100 ug/kg 1,200 ug/kg 1,100 ug/kg 1,100 ug/kg 1,100 ug/kg 1,100 ug/kg 1,100 ug/kg 1,100 ug/kg 1,100 ug/kg 1,100 ug/kg 1,100 ug/kg 1,100 ug/kg 1,200 ug/kg 1,200 ug/kg 1,200 ug/kg 1,200 ug/kg				1	-		
Anthracene Benzo(a)anthracene Benzo(a)pyrene Chrysene Di-n-butyl phthalate Dibenzofuran Fluoranthene Fluorene N-Nitrosodiphenylamine Naphthalene Nitrobenzene Nitrobenzene Nitrobenzene Pentachlorophenol Phenalthrene Phenol Pyrene bis(2-Chloroethoxy)methane  1			• 10 1900/19	1	-		
Benzo(a)anthracene Benzo(a)pyrene 1			• • • • • • • • • • • • • • • • • • • •	, i		0, 110	
Benzo(a)pyrene 1 < 330 ug/kg Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 1,200 ug/kg Fluorene 1 1,800 ug/kg N-Nitrosodiphenylamine 1 1,300 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 4,600 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 1,600 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 3,600 ug/kg Pyrene 1 < 330 ug/kg Disc2-Chloroethoxy)methane				1			
Chrysene 1 < 330 ug/kg Di-n-butyl phthalate 1 < 330 ug/kg Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 1,200 ug/kg Fluorene 1 1,800 ug/kg N-Nitrosodiphenylamine 1 1,300 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 4,600 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 1,600 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg Dibenzene 1 < 330 ug/kg				1		_	
Di-n-butyl phthalate Di-benzofuran Di-benzof				<u>.</u>			
Dibenzofuran 1 < 330 ug/kg Fluoranthene 1 1,200 ug/kg Fluorene 1 1,800 ug/kg N-Nitrosodiphenylamine 1 1,300 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 4,600 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 1,600 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Dyrene 1 < 330 ug/kg				·		_	
Fluoranthene						1.000	
Fluorene 1 1,800 ug/kg N-Nitrosodiphenylamine 1 1,300 ug/kg Naphthalene 1 < 330 ug/kg Nitrobenzene 1 4,600 ug/kg Pentachlorophenol 1 < 330 ug/kg Phenanthrene 1 < 1,600 ug/kg Phenol 1 < 330 ug/kg Pyrene 1 < 330 ug/kg Dyrene 1 < 330 ug/kg	,			500 ·			
N-Nitrosodiphenylamine Naphthalene Nitrobenzene Nitrobenzene Nitrobenzene Nitrophenol Pentachlorophenol Phenanthrene Phenol Phenol Pyrene bis(2-Chloroethoxy)methane							
Naphthalene       1       < 330 ug/kg				•			
Naphthalene Nitrobenzene Nitrob							
Pentachlorophenol       1       < 330				1		-	
Pentachtorophenol Phenanthrene 1 < 1,600 ug/kg Phenol Pyrene 1 < 330 ug/kg Pyrene 1 < 330 ug/kg 1 1,200 ug/kg				1			
Phenol       1       3,600 ug/kg         Pyrene       1       < 330 ug/kg				,		-	
Pyrene 1 < 330 ug/kg bis(2-Chloroethoxy)methane 1 1,200 ug/kg				1			
bis(2-Chloroethoxy)methane 1 1,200 ug/kg		P	Phenol	1			
THE STITUTE STITUTE			• Control of the cont	1			
		b	pis(2-Chloroethoxy)methane	1			

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB03-S24
SAMPLE NO: H446425

	TEST			DILUTION		
LN	CODE	DETERMINATION		FACTOR	RESULT	INTTO
					KESULI	UNITS
		bis(2-Ethylhexyl)phthalate		1	< 330	ug/kg
8	S401	SW1312 - SPLP Leaching Procedure - Metals and SVOA			Done	-5/ 1.5
9	\$402	SW1312 - SPLP Leaching Procedure - ZHE			Done	1
14	1685s	Petroleum Hydrocarbons		1	< 20	mg/kg
15	OVTCW2	8260A TCL Volatiles in Water				97 119
		1,2-Dichloroethane		1	< 5	ug/L
		Benzene		1	24	ug/L
		Chlorobenzene		1	< 5	ug/L
		Ethylbenzene		1	< 5	ug/L
		Methylene chloride		1	30 *	ug/L
		Toluene		10	260	ug/L
		Xylenes (total)		1	11	ug/L
17	OSVTCW	TCL - Semi-volatile Extractables in Water				
		1,2-Diphenylhydrazine		1	< 10	ug/L
		2,4-Dimethylphenol		1	< 10	ug/L
		2,4-Dinitrotoluene		1	< 10	ug/L
		2,6-Dinitrotoluene		1	< 10	ug/L
		2-Chloronaphthalene		1	< 10	ug/L
		2-Methylnaphthalene		1	44	ug/L
		4,6-Dinitro-o-cresol		1	< 50	
		4-Nitrophenol		1	< 50	ug/L
		Acenaphthene		1	85	ug/L
		Acenaphthylene		1	< 10	ug/L
		Anthracene		1	31	ug/L
		Benzo(a)anthracene		1	< 10	ug/L
		Benzo(a)pyrene		1		ug/L
		Chrysene		1	< 10	ug/L
		Di-n-butylphthalate		1	< 10	ug/L
		Dibenzofuran		1	60	ug/L
		Fluoranthene		1	32	ug/L
		Fluorene		1	88	ug/L
		N-Nitrosodiphenylamine		1	< 10	ug/L
		Naphthalene		1	< 10	ug/L
		Nitrobenzene		1	< 10	ug/L
		Pentachlorophenol		1	< 50	ug/L
		Phenanthrene		. 1	170	ug/L
		Phenol	*	1		ug/L
		Pyrene		1	15	ug/L
		bis(2-Chloroethoxy)methane	-	1	< 10	ug/L
		bis(2-Ethylhexyl)phthalate		1	< 10	ug/L

COMMENTS: Continued on next page.

> Tel: 713-488-1810 Fax: 713-488-4661

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB03-S24

SAMPLE NO: H446425

TEST

LN CODE

DETERMINATION

DILUTION

FACTOR

RESULT UNITS

COMMENTS: Results for the SPLP leachate are reported in ug/L.

\* Methylene chloride is a common laboratory solvent. Methylene chloride was not detected in the analysis of the soil. The SPLP leachate may have been contaminated during the leaching process. This should be considered in evaluating the data.

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB03-S34

SAMPLE NO: H446426

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142
PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 05-MAR-97 0910

DATE RECEIVED: 06-MAR-97

		*				
LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESUL	UNITS	
1	OVTCS2	The state of the s				
		1,2-Dichloroethane	625	< 3,100	ug/kg	
		Benzene	625	< 3,100		
		Chlorobenzene	625	< 3,100		
		Ethylbenzene	625	46,000		
		Methylene chloride	625	< 3,100		
		Toluene	625	32,000	_	
_		Xylenes (total)	625	170,000		
3	OSVTCS	TCL - Semi-volatile Extractables in Soil		170,000	ug/kg	
		1,2-Diphenylhydrazine	75	< 25,000	ug/kg	
		2,4-Dimethylphenol	75	< 25,000		
		2,4-Dinitrotoluene	75	< 25,000		
		2,6-Dinitrotoluene	75	< 25,000	-	
		2-Chloronaphthalene	75	< 25,000		
		2-Methylnaphthalene	1500	2,200,000	ug/kg	
		4,6-Dinitro-o-cresol	75	< 120,000	ug/kg	
		4-Nitrophenol	75	< 120,000		
		Acenaphthene	75 75			
		Acenaphthylene	75	270,000	ug/kg	
		Anthracene	75 75	< 25,000	ug/kg	
		Benzo(a)anthracene	75	160,000	ug/kg	
		Benzo(a)pyrene	75 75	42,000	ug/kg	
		Chrysene	75 75	< 25,000	ug/kg	
		Di-n-butyl phthalate	75 75	42,000	ug/kg	
		Dibenzofuran	75 75	< 25,000	ug/kg	
		Fluoranthene	75 75	240,000	ug/kg .	
		Fluorene	75 75	210,000	ug/kg	
		N-Nitrosodiphenylamine	75 75		ug/kg	
		Naphthalene	1500		ug/kg	
		Nitrobenzene			ug/kg	
		Pentach l oropheno l	<i>7</i> 5 75		ug/kg	
		Phenanthrene			ug/kg	
		Phenol	1500 75		ug/kg	
	1	Pyrene	75		ug/kg	
	1	bis(2-Chloroethoxy)methane	75 75		ug/kg	
		,	75	< 25,000	ug/kg	

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB03-S34

SAMPLE NO: H446426

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
14	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	75 50	< 25,000 7,400	ug/kg mg/kg
COM	MENTO.	The memoration links			

COMMENTS: The reporting limits are elevated due to the dilution required because of the high concentration of target analytes.

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB03-S52

SAMPLE NO: H446427

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 05-MAR-97 0935

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS	
						-
1	OVTCS2	8260A TCL Volatiles in Soil				
		1,2-Dichloroethane	. 1	< 5	ug/kg	
		Benzene	1	< 5		
		Chlorobenzene	1	< 5	-0,	
		Ethylbenzene	1	25	J. J	
		Methylene chloride	. 1	< 5	-0,	
		Toluene	1	20	ug/kg	
3	001/700	Xylenes (total)	- 1	75	ug/kg	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil				
		1,2-Diphenylhydrazine	1	< 330	ug/kg	
		2,4-Dimethylphenol	1	< 330	ug/kg	
		2,4-Dinitrotoluene	1	< 330	ug/kg	
		2,6-Dinitrotoluene	1	< 330	ug/kg	
		2-Chloronaphthalene	1	< 330	ug/kg	
		2-Methylnaphthalene	4	11,000	ug/kg	
		4,6-Dinitro-o-cresol	1	< 1,600	ug/kg	
		4-Nitrophenol	1	< 1,600	ug/kg	
		Acenaphthene	1	2,900	ug/kg	
		Acenaphthylene	<b>1</b>	< 330	ug/kg	
		Anthracene	1	1,800	ug/kg	
		Benzo(a)anthracene	1	560	ug/kg	
		Benzo(a)pyrene	1	< 330	ug/kg	
		Chrysene	1	560	ug/kg	
		Di-n-butyl phthalate Dibenzofuran	1	< 330	ug/kg	
		Fluoranthene	1	2,600	ug/kg	
		Fluorene	. 1	2,900	ug/kg	
			1		ug/kg	
		N-Nitrosodiphenylamine	1		ug/kg	
		Naphthalene Nitrobenzene	4		ug/kg	
			1		ug/kg	
		Pentachlorophenol Phenanthrene	1		ug/kg	
		Phenol	4		ug/kg	
			, 1		ug/kg	
		Pyrene bis(2-Chloroethoxy)methane	. 1		ug/kg	
		prote-pricer perioxy Juletuane	1	< 330	ug/kg	

# REPORT OF LABORATORY ANALYSIS

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## Pace Analytical

Pace Analytical Services, Inc. 900 Gemini Avenue Houston, TX 77058

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April 11, 1997
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Section A Page 22

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB03-S52
SAMPLE NO: H446427

		****				
	TEST					
LN	CODE		DILUTION			
	CODE	DETERMINATION	FACTOR	DE0111 -		
			FACTOR	RESULT	UNITS	
			,			
		bis(2-Ethylhexyl)phthalate				
14		Petroleum Hydrocarbons	1	< 330	ug/kg	
•		recipied in hydrogarbons	1		-0,	
				< 20	mg/kg	

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB03-S54

SAMPLE NO: H446428

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142
PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 05-MAR-97 0940

DATE RECEIVED: 06-MAR-97

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			
,	001632	1,2-Dichloroethane			
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
		Xylenes (total)	1	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	1	< 5	ug/kg
-	001100	1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	1	< 330	ug/kg
		2,4-Dinitrotoluene	1	< 330	
		2,6-Dinitrotoluene	1	< 330	
		2-Chloronaphthalene	. 1	< 330	
		2-Methylnaphthalene	" <b>1</b>	< 330	ug/kg
		4,6-Dinitro-o-cresol	1	< 330	0.
		4-Nitrophenol	1		
		Acenaphthene	1		-
		Acenaphthylene	1	< 330	-3, 113
		Anthracene	1		ug/kg
		Benzo(a)anthracene	1		ug/kg
		Benzo(a)pyrene	1		ug/kg
		Chrysene	1	< 330	
		Di-n-butyl phthalate			ug/kg
		Dibenzofuran	1		ug/kg
		Fluoranthene	1		ug/kg
		Fluorene	1		ug/kg
		N-Nitrosodiphenylamine	. 1	< 330	
		Naphthalene	1	< 330	
		Nitrobenzene	1		ug/kg
		Pentachlorophenol	1		ug/kg
		Phenanthrene	1	-	ug/kg
		Phenol	. <u>1</u>		ug/kg
	1	Pyrene	1		ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
		•	1	< 330	ug/kg

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April 11, 1997
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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB03-S54

SAMPLE NO: H446428

TEST
DILUTION
LN CODE
DETERMINATION
FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate

1 < 330 ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB04-S2.5

SAMPLE NO: H446429

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 05-MAR-97 1235

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	DECILIT	UNITS
			PACTOR	KESULI	UNITS
1	OVTCS2	The state of the solid			
		1,2-Dichloroethane	5	< 25	ug/kg
		Benzene	5	< 25	-0,
		Chlorobenzene	5	< 25	
		Ethylbenzene	5	< 25	-0,0
		Methylene chloride	5	< 25	ug/kg
		Toluene	5	< 25	ug/kg
		Xylenes (total)	5	70	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil		, •	49/ Ng
		1,2-Diphenylhydrazine	75	< 25,000	ug/kg
		2,4-Dimethylphenol	75	< 25,000	ug/kg
		2,4-Dinitrotoluene	75	< 25,000	ug/kg
		2,6-Dinitrotoluene	75	< 25,000	ug/kg
		2-Chloronaphthalene	75	< 25,000	ug/kg
		2-Methylnaphthalene	<i>7</i> 50	320,000	
		4,6-Dinitro-o-cresol	<i>7</i> 5	< 120,000	ug/kg
		4-Nitrophenol	75	< 120,000	ug/kg
		Acenaphthene Acenaphthyl ene	75	370,000	ug/kg
		Anthracene	75	< 25,000	ug/kg
		Benzo(a)anthracene	75	250,000	ug/kg
		Benzo(a)pyrene	75	130,000	
		Chrysene	75	44,000	ug/kg
		Di-n-butyl phthalate	<i>7</i> 5	130,000	ug/kg
		Dibenzofuran	<i>7</i> 5	< 25,000	ug/kg
		Fluoranthene	75	300,000	ug/kg
		Fluorene	75	< 25,000	ug/kg
		N-Nitrosodiphenylamine	75	370,000	ug/kg
		Naphthalene	75	< 25,000	ug/kg
		Nitrobenzene	750	540,000	ug/kg
		Pentachlorophenol	75	< 25,000	ug/kg
		Phenanthrene	75		ug/kg
		Phenol	750		ug/kg
		Pyrene	75		ug/kg
	1	bis(2-Chloroethoxy)methane	75		ug/kg
			75	< 25,000	ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB04-S2.5

SAMPLE NO: H446429

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
14	16 <b>8</b> 5\$	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	75 50		ug/kg mg/kg
COM	MENTS:	The reporting limits are elevated due to the dilution required because of matrix interferences and high target analyte concentration.			

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB04-S29

SAMPLE NO: H446430

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 05-MAR-97 1320

DATE RECEIVED: 06-MAR-97

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCS2	The second of th			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	13	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	31	ug/kg
		Methylene chloride	1	11	ug/kg
		Toluene	1	21	ug/kg
7	001/200	Xylenes (total)	1	88	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	5	< 1,600	ug/kg
		2,4-Dimethylphenol	5	5,300	ug/kg
		2,4-Dinitrotoluene	5	< 1,600	ug/kg
		2,6-Dinitrotoluene	5	< 1,600	ug/kg
		2-Chloronaphthalene	5	< 1,600	ug/kg
		2-Methylnaphthalene	25	17,000	ug/kg
		4,6-Dinitro-o-cresol	5	< 8,200	ug/kg
		4-Nitrophenol	5	< 8,200	ug/kg
		Acenaphthene	5	13,000	ug/kg
		Acenaphthylene	5	< 1,600	ug/kg
		Anthracene	5	14,000	ug/kg
		Benzo(a)anthracene	5	1,800	ug/kg
		Benzo(a)pyrene	5	< 1,600	ug/kg
		Chrysene	5	1,700	
		Di-n-butyl phthalate	5		ug/kg
		Dibenzofuran	5	12,000	ug/kg
		Fluoranthene	5		ug/kg
		Fluorene	5		ug/kg
		N-Nitrosodiphenylamine	5		ug/kg
		Naphthalene	25		ug/kg
		Nitrobenzene	5		ug/kg
		Pentachlorophenol	5		ug/kg
		Phenanthrene	25	-	ug/kg
		Phenol	5		ug/kg
		Pyrene	5		ug/kg
		bis(2-Chloroethoxy)methane	5	•	ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB04-S29
SAMPLE NO: H446430

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS	· <b></b> -
14	I685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	5 1	< 1,600 70	ug/kg mg/kg	
COM	MENTS:	The reporting limits for semi-volatiles are elevated due to the dilution required because of high analyte concentration.				

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB04-S27

SAMPLE NO: H446431

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

. TOT MOT OBETY

DATE SAMPLED: 05-MAR-97 1330

DATE RECEIVED: 06-MAR-97

				•	
	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	COTTO	8260A TCL Volatiles in Soil			
'	071632	1,2-Dichloroethane			
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	13	ug/kg
		Ethylbenzene	1	< 5	-0,
		Methylene chloride	1	64	ug/kg
		Toluene	1	7	
		Xylenes (total)	1	28	ug/kg
3	OCVITCO		1	180	ug/kg
3	USVICS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	5	< 1,600	ug/kg
		2,4-Dimethylphenol	5	2,300	ug/kg
		2,4-Dinitrotoluene	5	< 1,600	ug/kg
		2,6-Dinitrotoluene	5	< 1,600	ug/kg
		2-Chloronaphthalene	5	< 1,600	ug/kg
		2-Methylmaphthalene	25	53,000	ug/kg
		4,6-Dinitro-o-cresol	5	< 8,200	ug/kg
		4-Nitrophenol	5	< 8,200	ug/kg
		Acenaphthene	. 5	16,000	ug/kg
		Acenaphthylene	5	< 1,600	ug/kg
		Anthracene	5	9,700	ug/kg
		Benzo(a)anthracene	5	2,100	ug/kg
		Benzo(a)pyrene	5	< 1,600	ug/kg
		Chrysene	5	2,100	ug/kg
		Di-n-butyl phthalate Dibenzofuran	5	< 1,600	ug/kg
			5	14,000	ug/kg
		Fluoranthene	5	13,000	ug/kg
		Fluorene	5	16,000	ug/kg
		N-Nitrosodiphenylamine	5	< 1,600	ug/kg
		Naphthal ene	25	56,000	ug/kg
		Nitrobenzene	5	< 1,600	ug/kg
		Pentachlorophenol	5	< 8,200	ug/kg
		Phenanthrene	25	47,000	ug/kg
		Phenol	5	< 1,600	ug/kg
		Pyrene	5		ug/kg
		bis(2-Chloroethoxy)methane	5	< 1,600	ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB04-S27
SAMPLE NO: H446431

LN	CODE	DETERMINATION	DILUTION	RESULT	UNITS	•••••
14	1685\$	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	5 1	< 1,600 130	ug/kg mg/kg	
COM	IMENTS:	The reporting limits are elevated for semi-volatiles due to the dilution required because of high analyte concentration.				

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB04-S31

SAMPLE NO: H446432

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 05-MAR-97 1335

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
	0.550				
1	OVTCS2	The state of the s			
		1,2-Dichloroethane	125	< 620	ug/kg
		Benzene	125	< 620	ug/kg
		Chlorobenzene	125	< 620	ug/kg
		Ethylbenzene	125	1,700	ug/kg
		Methylene chloride	125	< 620	ug/kg
		Toluene	125	1,400	ug/kg
3	OCUTOO	Xylenes (total)	125	6,100	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	5	< 1,600	ug/kg
		2,4-Dimethylphenol	5	< 1,600	ug/kg
		2,4-Dinitrotoluene	5	< 1,600	ug/kg
		2,6-Dinitrotoluene	5	< 1,600	ug/kg
		2-Chloronaphthalene	5	< 1,600	ug/kg
		2-Methylnaphthalene 4,6-Dinitro-o-cresol	10	29,000	ug/kg
		4-Nitrophenol	5	< 8,200	ug/kg
		Acenaphthene	5	< 8,200	ug/kg
		Acenaphthylene	10	23,000	ug/kg
		Anthracene	5	< 1,600	ug/kg
		Benzo(a)anthracene	5	18,000	ug/kg
		Benzo(a)pyrene	5	4,400	ug/kg
		Chrysene	5	< 1,600	ug/kg
		Di-n-butyl phthalate	5	4,400	ug/kg
		Dibenzofuran	5	< 1,600	ug/kg
		Fluoranthene	10	25,000	ug/kg
		Fluorene	5	20,000	ug/kg
		N-Nitrosodiphenylamine	10	20,000	ug/kg
		Naphthalene	5	< 1,600	ug/kg
		Nitrobenzene	50	200,000	ug/kg
		Pentachlorophenol	5	< 1,600	ug/kg
		Phenanthrene	5		ug/kg
		Phenol	10		ug/kg
		Pyrene	5		ug/kg
		bis(2-Chloroethoxy)methane	5		ug/kg
			5	< 1,600	ug/kg

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB04-S31
SAMPLE NO: H446432

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
14	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	5 1	< 1,600 120	ug/kg mg/kg
COM	MENTS:	The reporting limits are elevated due to the dilution required because of the high concentration of target analytes.			

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB04-S39

SAMPLE NO: H446433

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 05-MAR-97 1350

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
5	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	10	< 3,300	0. 0
		2,4-Dinitrotoluene	10	< 3,300	• •
		2,6-Dinitrotoluene	10	< 3,300	- U. 113
		2-Chloronaphthalene	10	< 3,300	
		2-Methylnaphthalene	10	< 3,300	
		4,6-Dinitro-o-cresol	2000	1,100,000	
		4-Nitrophenol	10	< 16,000	ug/kg
		Acenaphthene	10	< 16,000	ug/kg
		Acenaphthylene	2000	750,000	ug/kg
		Anthracene	10	6,800	ug/kg
		Benzo(a)anthracene	100	470,000	ug/kg
		Benzo(a)pyrene	10	38,000	ug/kg
		Chrysene	10	11,000	ug/kg
		Di-n-butyl phthalate	10	38,000	ug/kg
•		Dibenzofuran	10	< 3,300	ug/kg
		Fluoranthene	2000	750,000	ug/kg
		Fluorene	2000	590,000J	ug/kg
		N-Nitrosodiphenylamine	100	620,000	ug/kg
		Naphthal ene	10	< 3,300	ug/kg
		Nitrobenzene	2000	4,900,000	ug/kg
		Pentachlorophenol	10	< 3,300	ug/kg
		Phenanthrene	10	< 16,000	ug/kg
		Phenol	10	1,800,000	ug/kg
		Pyrene	10	< 3,300	ug/kg
		bis(2-Chloroethoxy)methane	100	430,000	ug/kg
		bis(2-Ethylhexyl)phthalate	10	< 3,300	ug/kg
	,	- ota am/thekyt/philiatate	10	< 3,300	ug/kg

COMMENTS: J- The reported value is below the reporting limit.

The reporting limits are elevated due to the dilution required because of the high concentration of target analytes.

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB04-S51

SAMPLE NO: H446434

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007 PACE PROJECT: H44142

PACE PROJECT: H44142
PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 05-MAR-97 1415

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

						Olline: S	
	TEST		 				
LN	CODE	DETERMINATION		DILUTION			
		DETERMINATION		FACTOR	RESUL	T UNITS	
1	OVTCS2	8260A TCL Volatiles in Soil					
		1,2-Dichloroethane					
		Benzene		5	< 25	ug/kg	
		Chlorobenzene		5	< 25	ug/kg	
		Ethylbenzene		5	< 25	ug/kg	
		Methylene chloride		5	620	ug/kg	
		Toluene		5	< 25	ug/kg	
		Xylenes (total)		5	200	ug/kg	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil		5	1,900		
		1,2-Diphenylhydrazine					
		2,4-Dimethylphenol		25	< 8,200	ug/kg	
		2,4-Dinitrotoluene		25	< 8,200		
		2,6-Dinitrotoluene		25	< 8,200		
		2-Chloronaphthalene		25	< 8,200	ug/kg	
		2-Methylnaphthalene		25	< 8,200	ug/kg	
		4,6-Dinitro-o-cresol		25	51,000		
		4-Nitrophenol		25	< 41,000	ug/kg	
		Acenaphthene		25	< 41,000		
		Acenaphthylene		25	12,000		
		Anthracene		25	< 8,200		
		Benzo(a)anthracene		25	< 8,200		
		Benzo(a)pyrene		25	< 8,200		
		Chrysene		25	< 8,200		
		Di-n-butyl phthalate		25	< 8,200		
		Dibenzofuran		25	< 8,200		
		Fluoranthene		25	12,000	ug/kg	
		Fluorene		25	< 8,200	ug/kg	
		N-Nitrosodiphenylamine		25	9,000	ug/kg	
		Naphthalene		25	< 8,200	ug/kg	
		Nitrobenzene		25	73,000	ug/kg	
		Pentachlorophenol		25	< 8,200	ug/kg	
	1	Phenanthrene		25		ug/kg	
		Phenol		25		ug/kg	
		Pyrene		25		ug/kg	
	Ł	ois(2-Chloroethoxy)methane		25	8,200	ug/kg	1, 1, 1
		• • • • • • • • • • • • • • • • • • • •		25	< 8,200	ug/kg	
							1.

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB04-S51
SAMPLE NO: H446434

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	LINITE
					ON113
		bis(2-Ethylhexyl)phthalate	25	< 8,200	ug/kg
8	S401	SW1312 - SPLP Leaching Procedure - Metals and SVOA		Done	
9	\$402	SW1312 - SPLP Leaching Procedure - ZHE		Done	
14	1685s	Petroleum Hydrocarbons	1	40	mg/kg
15	OVTCW2	The state of the s			
		1,2-Dichloroethane	1	< 5	ug/L
		Benzene	. 1	< 5	ug/L
		Chlorobenzene	1	< 5	ug/L
		Ethylbenzene	1	36	ug/L
		Methylene chloride	1	86 *	ug/L
		Toluene	10	120	ug/L
		Xylenes (total)	1	100	ug/L
17	OSVTCW	TCL - Semi-volatile Extractables in Water			-3, -
		1,2-Diphenylhydrazine	25	< 250	ug/L
		2,4-Dimethylphenol	25	< 250	
		2,4-Dinitrotoluene	25	< 250	ug/L
		2,6-Dinitrotoluene	25		ug/L
		2-Chloronaphthalene	25		ug/L
		2-Methylnaphthalene	25		ug/L
		4,6-Dinitro-o-cresol	25		ug/L
		4-Nitrophenol	25		ug/L
		Acenaphthene	25	•	ug/L
		Acenaphthylene	25	< 250	
		Anthracene	25		ug/L
		Benzo(a)anthracene	25		ug/L
		Benzo(a)pyrene	25		ug/L
		Chrysene	25		ug/L
		Di-n-butylphthalate	25		ug/L
		Dibenzofuran	25		ug/L
		Fluoranthene	25		ug/L
		Fluorene	25		ug/L
		N-Nitrosodiphenylamine	25		ug/L
		Naphthalene	25	_	ug/L
		Nitrobenzene	25		ug/L
		Pentachlorophenol	25		ug/L
		Phenanthrene	25		ug/L
		Phenol	25		ug/L
		Pyrene	25	-	ug/L
		bis(2-Chloroethoxy)methane	25		ug/L
		bis(2-Ethylhexyl)phthalate	25		1g/L
					-3/ -

COMMENTS: Continued on next page.

> Tel: 713-488-1810 Fax: 713-488-4661

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB04-S51
SAMPLE NO: H446434

TEST

LN CODE

DETERMINATION

DILUTION

**FACTOR** 

RESULT UNITS

COMMENTS: Results for the SPLP leachate are reported in ug/L.

The soil reporting limits are elevated due to the dilution required because

of the high concentration of target analytes.

\* Methylene chloride is a common laboratory solvent. Methylene chloride was not detected in the analysis of the soil. The SPLP leachate may have been contaminated during the leaching process. This should be considered in evaluating the data.

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB04-S59

SAMPLE NO: H446435

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 05-MAR-97 1425

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEAT			
LN	TEST	<u></u> /	DILUTION	
		DETERMINATION	FACTOR	RESULT UNITS
1	OVTCS2	8260A TCL Volatiles in Soil		
		1,2-Dichloroethane		
		Benzene	1	< 5 ug/kg
		Chlorobenzene	1	< 5 ug/kg
		Ethylbenzene	1	< 5 ug/kg
		Methylene chloride	1	< 5 ug/kg
		Toluene	1	< 5 ug/kg
		Xylenes (total)	1	< 5 ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	1	< 5 ug/kg
		1,2-Diphenylhydrazine		
		2,4-Dimethylphenol	1	< 330 ug/kg
		2,4-Dinitrotoluene	1	< 330 ug/kg
		2,6-Dinitrotoluene	1	< 330 ug/kg
		2-Chloronaphthalene	1	< 330 ug/kg
		2-Methylnaphthalene	1	< 330 ug/kg
		4,6-Dinitro-o-cresol	1	< 330 ug/kg
		4-Nitrophenol	1	< 1,600 ug/kg
		Acenaphthene	1	< 1,600 ug/kg
		Acenaphthylene	1	< 330 ug/kg
		Anthracene	1	< 330 ug/kg
		Benzo(a)anthracene	1	< 330 ug/kg
		Benzo(a)pyrene	1	< 330 ug/kg
		Chrysene	1	< 330 ug/kg
		Di-n-butyl phthalate	1	< 330 ug/kg
		Dibenzofuran	1	< 330 ug/kg
		Fluoranthene	1	< 330 ug/kg
		Fluorene	1	< 330 ug/kg
		N-Nitrosodiphenylamine	1	< 330 ug/kg
		Naphthalene	1	< 330 ug/kg
		Nitrobenzene	1	< 330 ug/kg
		Pentach l oropheno l	1	< 330 ug/kg
		Phenanthrene	1	< 1,600 ug/kg
		Phenol	1	< 330 ug/kg
	1	Pyrene	1	< 330 ug/kg
		bis(2-Chloroethoxy)methane	1	< 330 ug/kg
	· ·		, 1	< 330 ug/kg

> Tel: 713-488-1810 Fax: 713-488-4661

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HWPW-SB04-S59 SAMPLE NO: H446435

**TEST** DILUTION LN CODE DETERMINATION

bis(2-Ethylhexyl)phthalate

1 < 330 ug/kg

RESULT UNITS

**FACTOR** 

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB07-S2.5

SAMPLE NO: H446436

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 06-MAR-97 0820

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

TEST LN CODE	DETERMINATION	DILUTION FACTOR	DE0/# =	INITE
		FACIUK	KESULT	UNITS
1 OVTCS2	8260A TCL Volatiles in Soil			
	1,2-Dichloroethane	5	4 25	
	Benzene	5	< 25 33	ug/kg
	Chlorobenzene	5	> > < 25	ug/kg
	Ethylbenzene	125	6,300	ug/kg
	Methylene chloride	5	< 25	ug/kg
	Toluene	5	360	ug/kg
	Xylenes (total)	125	22,000	ug/kg
3 OSVTCS	TCL - Semi-volatile Extractables in Soil	123	22,000	ug/kg
	1,2-Diphenylhydrazine	75	< 25,000	um/km
	2,4-Dimethylphenol	75	< 25,000	ug/kg ug/kg
	2,4-Dinitrotoluene	75	< 25,000	
	2,6-Dinitrotoluene	75 75	< 25,000	ug/kg ug/kg
	2-Chloronaphthalene	75	< 25,000	ug/kg ug/kg
	2-Methylnaphthalene	1500	1,300,000	ug/kg ug/kg
	4,6-Dinitro-o-cresol	75	< 124,000	ug/kg
	4-Nitrophenol	75	< 124,000	ug/kg ug/kg
	Acenaphthene	1500	1,700,000	ug/kg ug/kg
	Acenaphthylene	75	< 25,000	ug/kg
	Anthracene	75	400,000	ug/kg ug/kg
	Benzo(a)anthracene	75	130,000	ug/kg
	Benzo(a)pyrene	75	27,000	ug/kg
	Chrysene	75	130,000	ug/kg
	Di-n-butyl phthalate	75	< 25,000	ug/kg
	Dibenzofuran	1500	1,100,000	ug/kg
	Fluoranthene	1500	2,500,000	ug/kg
	Fluorene	1500	1,600,000	ug/kg
	N-Nitrosodiphenylamine	75	< 25,000	ug/kg
	Naphthalene	1500	3,900,000	ug/kg
	Nitrobenzene	75	< 25,000	ug/kg
	Pentachlorophenol	75	< 124,000	ug/kg
	Phenanthrene	1500	-	ug/kg
	Phenol	75		ug/kg
	Pyrene	1500		ug/kg
	bis(2-Chloroethoxy)methane	75	Secretary of the secretary	ug/kg

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB07-S2.5

SAMPLE NO: H446436

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS	
14	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	75 25		ug/kg mg/kg	
COM	MENTS:	The reporting limits are elevated due to dilution required because of the high concentration of target analytes				

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040
ATTENTION: BILL GOLDSBY

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

SAMPLE ID: HWPW-SB07-S19

SAMPLE NO: H446437

SAMPLE MATRIX: SOIL

DATE SAMPLED: 06-MAR-97 0840

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

**TEST** DILUTION LN CODE DETERMINATION **FACTOR** RESULT UNITS OVTCS2 8260A TCL Volatiles in Soil 1,2-Dichloroethane 5 < 25 ug/kg Benzene 5 ug/kg Chlorobenzene 5 < 25 ug/kg Ethylbenzene 125 12,000 ug/kg Methylene chloride 5 < 25 ug/kg Toluene 125 12,000 ug/kg Xylenes (total) 125 40,000 ug/kg 3 OSVTCS TCL - Semi-volatile Extractables in Soil 1,2-Diphenylhydrazine 100 < 33,000 ug/kg 2,4-Dimethylphenol 100 < 33,000 ug/kg 2,4-Dinitrotoluene 100 < 33,000 ug/kg 2,6-Dinitrotoluene 100 < 33,000 ug/kg 2-Chloronaphthalene < 33,000 100 ug/kg 2-Methylnaphthalene 1000 1,700,000 ug/kg 4,6-Dinitro-o-cresol 100 < 160,000 ug/kg 4-Nitrophenol < 160,000 100 ug/kg Acenaphthene 100 460,000 ug/kg Acenaphthylene 100 < 33,000 ug/kg **Anthracene** 280,000 100 ug/kg Benzo(a)anthracene 100 59,000 ug/kg Benzo(a)pyrene 100 < 33,000 ug/kg Chrysene 100 56,000 ug/kg Di-n-butyl phthalate 100 < 33,000 ug/kg Dibenzofuran 100 360,000 ug/kg Fluoranthene 100 330,000 ug/kg Fluorene 100 430,000 ug/kg N-Nitrosodiphenylamine 100 < 33,000 ug/kg Naphthalene 5000 7,600,000 ug/kg Nitrobenzene 100 < 33,000 ug/kg Pentachlorophenol 100 < 160,000 ug/kg Phenanthrene 1000 2,600,000 ug/kg Phenol 100 < 33,000 ug/kg 100 280,000 ug/kg bis(2-Chloroethoxy)methane 100 < 33,000 ug/kg

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB07-S19
SAMPLE NO: H446437

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
14	16858	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	100 5	< 33,000 1,900	ug/kg mg/kg
COM	MENTS:	The reporting limits are elevated due to the dilution required because of the high concentration of target analytes.			

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB07-S21

SAMPLE NO: H446438

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 06-MAR-97 0845

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil			2
		1,2-Dichloroethane	. 5	< 25	ug/kg
		Benzene	5	670	ug/kg ug/kg
		Chlorobenzene	5	< 25	ug/kg
		Ethylbenzene	125	12,000	ug/kg ug/kg
		Methylene chloride	5	< 25	ug/kg
		Toluene	125	13,000	ug/kg ug/kg
		Xylenes (total)	125	38,000	ug/kg ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil		50,000	ug/ kg
		1,2-Diphenylhydrazine	. 10	< 3,300	ug/kg
		2,4-Dimethylphenol	10	< 3,300	ug/kg
		2,4-Dinitrotoluene	10	< 3,300	ug/kg
		2,6-Dinitrotoluene	10	< 3,300	ug/kg
		2-Chloronaphthalene	10	< 3,300	ug/kg
		2-Methylnaphthalene	500	260,000	ug/kg
		4,6-Dinitro-o-cresol	10	< 16,000	ug/kg
		4-Nitrophenol	10	< 16,000	ug/kg
		Acenaphthene	200	400,000	ug/kg ug/kg
		Acenaphthylene	10	< 3,300	ug/kg
		Anthracene	10	220,000	ug/kg
		Benzo(a)anthracene	10	17,000	ug/kg
		Benzo(a)pyrene	10	5,000	ug/kg
		Chrysene	10	17,000	ug/kg
		Di-n-butyl phthalate	10	< 3,300	ug/kg
		Dibenzofuran	200	300,000	ug/kg
		Fluoranthene	10	240,000	ug/kg
		Fluorene	200	360,000	ug/kg
		N-Nitrosodiphenylamine	10		ug/kg
		Naphthalene	500	and the second second	ug/kg
		Nitrobenzene	10		ug/kg
		Pentachlorophenol	10		ug/kg
		Phenanthrene	200		ug/kg
		Phenol	10		ug/kg
		Pyrene	10		ug/kg
		bis(2-Chloroethoxy)methane	10		ug/kg
			10	. 5,500	ag/ kg

> Tel: 713-488-1810 Fax: 713-488-4661

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB07-S21
SAMPLE NO: H446438

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
14	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	10 1	< 3,300 1,200	ug/kg mg/kg
COM	MENTS:	The reporting limits are elevated due to the dilution required because of thigh concentration of target analytes.	he		

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB07-S22

SAMPLE NO: H446439

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 06-MAR-97 0850

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST	DETERMINATION	DILUTION FACTOR RESULT	UNITS
1	OVTCS2	8260A TCL Volatiles in Soil		
		1,2-Dichloroethane	435	
		Benzene	125 < 620	-0,
		Chlorobenzene	125 < 620 125 < 620	
		Ethylbenzene		-37 113
		Methylene chloride	125 9,100 125 < 620	•
		Toluene		-0,
		Xylenes (total)	, ,	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	125 28,000	ug/kg
		1,2-Diphenylhydrazine	1000 < 330.000	
		2,4-Dimethylphenol	1000 < 330,000 1000 < 330,000	
		2,4-Dinitrotoluene	1000 < 330,000	
		2,6-Dinitrotoluene	1000 < 330,000	
		2-Chloronaphthalene	1000 < 330,000	
		2-Methylnaphthalene	1000 790,000	
		4,6-Dinitro-o-cresol	1000 < 1,600,000	
		4-Nitrophenol	1000 < 1,600,000	
		Acenaphthene	1000 630,000	
		Acenaphthylene	1000 < 330,000	
		Anthracene	1000 < 330,000	
		Benzo(a)anthracene	1000 < 330,000	
		Benzo(a)pyrene	1000 < 330,000	
		Chrysene	1000 < 330,000	ug/kg ug/kg
		Di-n-butyl phthalate	1000 < 330,000	ug/kg ug/kg
		Dibenzofuran	1000 470,000	ug/kg ug/kg
		Fluoranthene	1000 380,000	ug/kg ug/kg
		Fluorene	1000 560,000	ug/kg
		N-Nitrosodiphenylamine	1000 < 330,000	ug/kg
		Naphthalene	1000 5,300,000	ug/kg
		Nitrobenzene	1000 < 330,000	ug/kg
		Pentachlorophenol	1000 < 1,600,000	ug/kg
		Phenanthrene	1000 1,200,000	ug/kg ug/kg
		Phenol	1000 < 330,000	ug/kg
		Pyrene	1000 < 330,000	ug/kg
		bis(2-Chloroethoxy)methane	1000 < 330,000	ug/kg
			. 555,000	-3/ NB

> Tel: 713-488-1810 Fax: 713-488-4661

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB07~S22

SAMPLE NO: H446439

TEST
LN CODE DETERMINATION DILUTION
FACTOR RESULT UNITS
bis(2-Ethylhexyl)phthalate

14 I685S Petroleum Hydrocarbons

1000 < 330,000 ug/kg 1 1,100 mg/kg

COMMENTS: The reporting limits are elevated due to the dilution required because of the high concentration of target analytes.

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB07-S24

SAMPLE NO: H446440

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 06-MAR-97 0900

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION			
LN	CODE	DETERMINATION	FACTOR	PESIII 1	UNITS	
					ONIIS	
1	OVECCO	22/04 TOL Walanti				
1	OVTCS2	The votation in soil				
		1,2-Dichloroethane Benzene	1250	< 6,200	ug/kg	
		Chlorobenzene	1250	< 6,200	ug/kg	
		Ethylbenzene	1250	< 6,200	ug/kg	
			1250	31,000	ug/kg	
		Methylene chloride	1250	< 6,200		
		Toluene	1250	31,000		
3	OSVTCS	Xylenes (total)	1250	90,000		
3	024162	The same restaured Excitational and a same same same same same same same sa		-		
		1,2-Diphenylhydrazine	7500	< 2,500	mg/kg	
		2,4-Dimethylphenol	7500	< 2,500		
		2,4-Dinitrotoluene	7500	< 2,500		
		2,6-Dinitrotoluene	7500	< 2,500		
		2-Chloronaphthalene	7500	< 2,500		
		2-Methylnaphthalene	7500	3,700		
		4,6-Dinitro-o-cresol	7500	< 12,000		
		4-Nitrophenol	7500	< 12,000		
		Acenaphthene	7500	3,200	0. 0	
		Acenaphthylene	7500	< 2,500		
		Anthracene	7500	< 2,500		
		Benzo(a)anthracene	7500	< 2,500		
		Benzo(a)pyrene	7500	< 2,500	mg/kg	
		Chrysene	7500	< 2,500	mg/kg	
		Di-n-butyl phthalate	7500	< 2,500	mg/kg	
		Dibenzofuran	7500	2,500	mg/kg	
		Fluoranthene	7500	2,500	mg/kg	
		Fluorene	7500	2,700	mg/kg	
		N-Nitrosodiphenylamine	7500	< 2,500	mg/kg	
		Naphthalene	7500	42,000	mg/kg	
		Nitrobenzene	7500	-	mg/kg	
		Pentachlorophenol	7500	500.00	mg/kg	
		Phenanthrene	7500		mg/kg	
		Phenol	7500		mg/kg	
		Pyrene	7500	-	mg/kg	
		bis(2-Chloroethoxy)methane	7500		mg/kg	
			1300	` 2,300	III9/Kg	

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB07-S24
SAMPLE NO: H446440

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
14	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	7500 50	< 2,500 9,200	mg/kg mg/kg

COMMENTS: The reporting limits are elevated due to the dilution required because of the high concentration of target analytes.

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB08-S4 SAMPLE NO: H446441

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 06-MAR-97 0925

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST	• *	DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCS2	The state of the s			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	24	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
-		Xylenes (total)	1	46	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	100	< 33,000	ug/kg
		2,4-Dimethylphenol	100	< 33,000	ug/kg
		2,4-Dinitrotoluene	100	< 33,000	ug/kg
		2,6-Dinitrotoluene	100	< 33,000	ug/kg
		2-Chloronaphthalene	100	< 33,000	ug/kg
		2-Methylnaphthalene	100	420,000	ug/kg
		4,6-Dinitro-o-cresol	100	< 160,000	ug/kg
		4-Nitrophenol	100	< 160,000	ug/kg
		Acenaphthene	1000	450,000	ug/kg
		Acenaphthylene	100	< 33,000	ug/kg
		Anthracene	100	480,000	ug/kg
		Benzo(a)anthracene	100	160,000	ug/kg
		Benzo(a)pyrene	100	62,000	ug/kg
		Chrysene	100	180,000	ug/kg
		Di-n-butyl phthalate	100	< 33,000	ug/kg
		Dibenzofuran	100		ug/kg
		Fluoranthene	1000		ug/kg
		Fluorene	1000	N 2000	ug/kg
		N-Nitrosodiphenylamine	100		ug/kg
		Naphthalene	100		ug/kg
		Nitrobenzene	100	•	ug/kg
		Pentachlorophenol	100	-	ug/kg
		Phenanthrene	1000		ug/kg
		Phenol	100		ug/kg
		Pyrene	100	-	ug/kg
		bis(2-Chloroethoxy)methane	100		ug/kg
				,	J,3

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB08-S4
SAMPLE NO: H446441

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS	
14	16858	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	100 25	< 33,000 2,600	ug/kg mg/kg	
COM	MENTS:	The reporting limits for semi-volatiles are elevated due to the dilution required because of the high concentration of target analytes.				

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB08-S14

SAMPLE NO: H446442

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 06-MAR-97 0940

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	PESIII T	UNITS
					ON113
1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	71	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	125	3,400	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	125	2,600	ug/kg
		Xylenes (total)	125	11,000	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			-0,
		1,2-Diphenylhydrazine	1000	< 330,000	ug/kg
		2,4-Dimethylphenol	1000	< 330,000	ug/kg
		2,4-Dinitrotoluene	1000	< 330,000	ug/kg
		2,6-Dinitrotoluene	1000	< 330,000	ug/kg
		2-Chloronaphthalene	1000	< 330,000	ug/kg
		2-Methylnaphthalene	1000	360,000	ug/kg
		4,6-Dinitro-o-cresol	1000	< 1,600,000	ug/kg
		4-Nitrophenol	1000	< 1,600,000	ug/kg
		Acenaphthene	1000	< 330,000	ug/kg
		Acenaphthylene	1000	< 330,000	ug/kg
		Anthracene	1000	< 330,000	ug/kg
		Benzo(a)anthracene	1000	< 330,000	ug/kg
		Benzo(a)pyrene	1000	< 330,000	ug/kg
		Chrysene	1000	< 330,000	ug/kg
		Di-n-butyl phthalate	1000	< 330,000	ug/kg
		Dibenzofuran	1000	< 330,000	ug/kg
		Fluoranthene	1000	< 330,000	ug/kg
		Fluorene	1000	330,000	ug/kg
		N-Nitrosodiphenylamine	1000	< 330,000	ug/kg
		Naph tha lene	1000	4,600,000	ug/kg
		Nitrobenzene	1000	< 330,000	ug/kg
		Pentachlorophenol		< 1,600,000	ug/kg
		Phenanthrene	1000		ug/kg
		Phenol	1000		ug/kg
		Pyrene	1000		ug/kg
		bis(2-Chloroethoxy)methane	1000	00 CO 00 00 00 00 00 00 00 00 00 00 00 00 00	
			1000	× 230,000	ug/kg

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB08-S14

SAMPLE NO: H446442

TEST
LN CODE DETERMINATION DILUTION
FACTOR RESULT UNITS

bis(2-Ethylhexyl)phthalate
14 I685S Petroleum Hydrocarbons
1 000 < 330,000 ug/kg
1 850 mg/kg

COMMENTS: The reporting limits for semi-volatiles are elevated by

COMMENTS: The reporting limits for semi-volatiles are elevated due to the dilution required because of the high concentration of target analytes.

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

bis(2-Chloroethoxy)methane

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB08-S18

SAMPLE NO: H446443

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

> P.O. NO: 03219

DATE SAMPLED:

75

160,000

< 25,000

ug/kg

ug/kg

06-MAR-97 0945

DATE RECEIVED: 06-MAR-97 PROJECT MANAGER: Elessa Sommers

**TEST** DILUTION CODE LN DETERMINATION FACTOR RESULT UNITS 1 OVTCS2 8260A TCL Volatiles in Soil 1,2-Dichloroethane 125 < 620 ug/kg Benzene 125 1,100 ug/kg Chlorobenzene 125 < 620 ug/kg Ethylbenzene 125 19,000 ug/kg Methylene chloride 125 < 620 ug/kg Toluene 125 13,000 ug/kg Xylenes (total) 125 55,000 ug/kg 3 OSVTCS TCL - Semi-volatile Extractables in Soil 1,2-Diphenylhydrazine 75 < 25,000 ug/kg 2,4-Dimethylphenol 75 25,000 ug/kg 2,4-Dinitrotoluene 75 < 25,000 ug/kg 2,6-Dinitrotoluene 75 < 25,000 ug/kg 2-Chloronaphthalene 75 < 25,000 ug/kg 2-Methylnaphthalene 75 400,000 ug/kg 4,6-Dinitro-o-cresol 75 < 124,000 ug/kg 4-Nitrophenol 75 < 124,000 ug/kg Acenaphthene 75 320,000 ug/kg Acenaphthylene 75 < 25,000 ug/kg Anthracene 200,000 75 ug/kg Benzo(a)anthracene 75 37,000 ug/kg Benzo(a)pyrene < 25,000 75 ug/kg Chrysene 75 37,000 ug/kg Di-n-butyl phthalate 75 < 25,000 ug/kg Dibenzofuran 75 270,000 ug/kg Fluoranthene 75 250,000 ug/kg Fluorene 75 300,000 ug/kg N-Nitrosodiphenylamine 75 < 25,000 ug/kg Naphthal ene 3000 17,000,000 ug/kg Nitrobenzene 75 < 25,000 ug/kg Pentach lorophenol 75 < 124,000 ug/kg Phenanthrene 300 1,400,000 ug/kg Phenol 75 < 25,000 ug/kg Pyrene

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB08-S22

SAMPLE NO: H446444

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142 PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 06-MAR-97 0950

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

			FROSE	CI MANAGE	EK: Elessa S	Sommers	
LN	TEST CODE	DETERMINATION	•••••	DILUTION	-		•••••
				FACTOR	RESUL	T UNITS	
4	01/2000	00/04					
1	OVTCS2	Total teles in soit					
		1,2-Dichloroethane Benzene		1	<	5 ug/kg	
		Chlorobenzene		1			
		Ethyl benzene		1		0. 10	
		Methylene chloride		125		-3,	
		Toluene		1	< 5	0. 0	
		Xylenes (total)		125	7,500	-3,5	
3	OSVTCS			125	43,000	00	
	034163	TCL - Semi-volatile Extractables in Soil			15,000	ug/kg	
		1,2-Diphenylhydrazine 2,4-Dimethylphenol		750	< 250,000	ug/kg	
		2,4-Dinitrotoluene		750	< 250,000	0,	
		2,6-Dinitrotoluene		750	< 250,000	0	
		2-Chloronaphthalene		750	< 250,000		
		2-Methylnaphthalene		750	< 250,000		
		4,6-Dinitro-o-cresol		750	420,000		
		4-Nitrophenol		750	< 1,200,000	-0,	
		Acenaphthene		750	< 1,200,000		
		Acenaphthylene		750	400,000		
		Anthracene		750	< 250,000		
		Benzo(a)anthracene		750	< 250,000		
		Benzo(a)pyrene		750	< 250,000		
		Chrysene		750	< 250,000		
		Di-n-butyl phthalate		750	< 250,000		
		Dibenzofuran		750	< 250,000		
		Fluoranthene		750	300,000	ug/kg	
		Fluorene		750	300,000	ug/kg	
		N-Nitrosodiphenylamine		750	350,000	ug/kg	
		Naphthalene		750	< 250,000		
		Nitrobenzene		4000	22,000,000		
		Pentachlorophenol		750	< 250,000	ug/kg	
		Phenanthrene		750	< 1,200,000	ug/kg	
		Phenol		750	840,000	ug/kg	
		Pyrene		750	< 250,000	ug/kg	
		pis(2-Chloroethoxy)methane		750	< 250,000	ug/kg	
				750	< 250,000	ug/kg	( :

## Pace Analytical

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB08-S22
SAMPLE NO: H446444

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
14	1685s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	750 25	< 250,000 12,000	ug/kg mg/kg
COM	MENTS:	The reporting limits for semi-volatiles are elevated due to the dilution required because of the high concentration of target analytes.			

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-SB08-S21

SAMPLE NO: H446445

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44142

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 06-MAR-97 0955

DATE RECEIVED: 06-MAR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST	DETERMINATION	DILUTION FACTOR		UNITS	
					01113	
1	OVTCS2	8260A TCL Volatiles in Soil				
		1,2-Dichloroethane				
		Benzene	1	< 5	ug/kg	
		Chlorobenzene	1	< 5	ug/kg	
		Ethylbenzene	1	< 5	ug/kg	
		Methylene chloride	1_	-74	ug/kg	
		Toluene	1.	< 5	ug/kg	
		Xylenes (total)	1	36	ug/kg	
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	1	230	ug/kg	
		1,2-Diphenylhydrazine				
		2,4-Dimethylphenol	500	< 160,000	-0,	
		2,4-Dinitrotoluene	500	< 160,000		
		2,6-Dinitrotoluene	500	< 160,000	ug/kg	
		2-Chloronaphthalene	500	< 160,000	ug/kg	
		2-Methylnaphthalene	500	< 160,000	ug/kg	
		4,6-Dinitro-o-cresol	500	350,000	ug/kg	
		4-Nitrophenol	500	< 820,000	ug/kg	
		Acenaphthene	500	< 820,000	ug/kg	
		Acenaphthylene	500	200,000	ug/kg	
		Anthracene	500	< 160,000	ug/kg	
		Benzo(a)anthracene	500	580,000	ug/kg	
		Benzo(a)pyrene	500	< 160,000	ug/kg	
		Chrysene	500	< 160,000	ug/kg	
		Di-n-butyl phthalate	500	< 160,000	ug/kg	
		Dibenzofuran	500	< 160,000	ug/kg	
		Fluoranthene	500	230,000	ug/kg	
		Fluorene	500	< 160,000	ug/kg	
		N-Nitrosodiphenylamine	500		ug/kg	
		Naphthalene	500	< 160,000	ug/kg	
		Nitrobenzene	5000	20,000,000	ug/kg	
	-	Pentachlorophenol	500		ug/kg	
		Phenanthrene	500		ug/kg	
	1	Phenol	500		ug/kg	
	F	Pyrene	500	< 160,000	ug/kg	
		pis(2-Chloroethoxy)methane	500		ug/kg	
			500	< 160,000	ug/kg	

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-SB08-S21

SAMPLE NO: H446445

•							
	LN COL	-	DETERMINATION	DILUTION FACTOR	RESULT	UNITS	
	14 1685	s	bis(2-Ethylhexyl)phthalate Petroleum Hydrocarbons	500 5	< 160,000 4,500		
	COMMENTS	:	The reporting limits for semi-volatiles are elevated due to the dilution required by the high concentration of target analytes.				

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## SUPPLEMENTAL INFORMATION

	TEST	LCSR BLNK	DUP/M: MS/MSI	)	SAMPLE PREF	PARATION		SAMPLE ANA	ALYSIS	
LN	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYS	T INSTRUMEN
SAM	PLE ID:	HUPU-SRO	5-954							
			3 034					SAMPLE	NO: H446	3419
	1 OVTCS2		72257				19-8260A	11-MAR-97 142	4 .10	CCHCA
	3 OSVTCS	72450	72450	19-3550A	18-MAR-97 130	O RDQ	19-8270B	06-APR-97 135		GCMSY GCMSA
SAM	PLE ID:	HWPW-SBO	5-S19					SAMPI E	NO: H446	/3n
	1 OVTCS2	7210/	70055					57411 22	NO. 11440	420
	3 S401		72257				19-8260A	11-MAR-97 145	7 JC	GCMSY
	9 \$402	72327	72327				19-1312	13-MAR-97 140		001EPE
	OVTCW2	72214 72735	72214				19-1312	12-MAR-97 163		005EPE
	OSVICWE		71777				19-8260A	13-MAR-97 195		GCMSB
	OSVICE	72496	72/2/	19-3510B	19-MAR-97 1500	) A M	19-8270B	06-APR-97 225		GCMSA
	1685s	72450	72450	19-3550A	18-MAR-97 1300	RDQ	19-8270B	24-MAR-97 143		GCMSA
,,	10038	72382	72382	19-3550A			02-418.1	17-MAR-97 1300		302WAT
SAME	LE ID: H	IWPW-SB06	-S24					SAMDI E	NO: H4464	24
	OVTCS2	7005 (						SAMPLE	NU: 14404	121
	OSVICS	72256 72450	72257				19-8260A	11-MAR-97 2247	, 1C	GCMSY
	16858	72382		19-3550A	18-MAR-97 1300	RDQ	19-8270B			GCMSA
	10033	12302	12302	19-3550A			02-418.1	17-MAR-97 1300	JLJ	302WAT
SAMP	LE ID: H	WPW-SB06	-\$49					SAMPLE	NO: H4464	22
1	OVTCS2	72256	72257	MA						les les
	OSVTCS	72450			40		19-8260A	11-MAR-97 2321	JC	GCMSY
_	557755	12430	12430	19-225UA	18-MAR-97 1300	RDQ	19-8270B	04-APR-97 1932		GCMSA
SAMP	LE ID: H	WPW-SB03-	·\$5					CAMDI E	10- 11/1/4	PA 400
4	01/7000	777700						SAMPLE	NO: H4464	23
	OVTCS2	72308	72257				19-8260A	13-MAR-97 0255	MU	COMOV
	S401	72327	72327				19-1312	13-MAR-97 1400		GCMSY
9		72214	72214				19-1312	12-MAR-97 1630		001EPE
15	OVTCW2	72735	71777				19-8260A	13-MAR-97 2026		005EPE
17	OSVTCW	72496		19-3510B	19-MAR-97 1500	A M	19-8270B	05-APR-97 2044		GCMSB
	OSVTCS	72450	/2450	19-3550A	18-MAR-97 1300	RDQ	19-8270В	24-MAR-97 0452	EAY	GCMSA
14	16858	72382	72382	19-3550A			02-418.1	17-MAR-97 1300		GCMSA 302WAT
AMPL	E ID: HW	IPW-SB03-	S19							
1	OVTCC2	72257	7005					SAMPLE N	O: H44642	4
	OVTCS2	72256	72257				19-8260A	12-MAR-97 0028	JC.	CCMCV
_	S401	72327	72327				19-1312	13-MAR-97 1400		GCMSY
9 15	S402 OVTCW2	72214	72214				19-1312	12-MAR-97 1630		001EPE
		72735	71777				19-8260A	13-MAR-97 2058		OO5EPE GCMSB
17	OSVTCW	72496	12127	19-3510B	19-MAR-97 1500	A M	19-8270B	05-APR-97 2134		GCMSA

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#### SUPPLEMENTAL INFORMATION

	TEST	LCSR BLNK	DUP/MS MS/MSD		SAMPLE PREPA	RATION		SAMPLE ANAL	YSIS	
LN	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYST	INSTRUMEN
SAMPL	LE ID:	HWPW-SB03	3-519					SAMPLE	NO: H4464	-24
3	OSVTCS	72450	72450	19-3550A	18-MAR-97 1300	RDQ	19-8270B	24-MAR-97 1942	EAV	GCMSA
14	16858	72382	72382	19-3550A			02-418.1			302WAT
SAMPL	E ID: I	HWPW-SB03	S-S24					SAMPLE	NO: H4464	25
1	OVTCS2	72256	72257	NA			19-8260A	12-MAR-97 0104	JC	GCMSY
8	S401	72327	72327	NA			19-1312	13-MAR-97 1400	JLJ	001EPE
9	s402	72326	72326	NA			19-1312	13-MAR-97 1400		001EPE
15	OVTCW2	72602	72482	NA			19-8260A			GCMSY
17	OSVTCW	72496	72727	19-3510B	19-MAR-97 1500	A M	19-8270B	05-APR-97 2223	EAY	GCMSA
. 3	OSVTCS	72492	72449	19-3550A	19-MAR-97 1200	RDQ	19-8270B	04-APR-97 2021	EAY	GCMSA
14	1685s	72382	72382	19-3550A			02-418.1	17-MAR-97 1300	JLJ	302WAT
SAMPL	E ID: I	HWPW-SB03	-834					SAMPLE !	NO: H4464	26
1	OVTCS2	72470	72470	NA			19-8260A	17-MAR-97 2023	JC	GCMSB
3	OSVTCS	72492	72449	19-3550A	19-MAR-97 1200	RDQ	19-8270B			GCMSA
14	1685s	72382	72382	19-3550A			02-418.1	17-MAR-97 1300	JLJ	302WAT
SAMPL	E ID: H	IWPW-SB03	-\$52					SAMPLE N	IO: H44642	27
	OVTCS2	72308	72257	NA			19-8260A	13-MAR-97 0330	мн	GCMSY
3	OSVTCS	72492			19-MAR-97 1200	RDQ	19-8270B	31-MAR-97 1049	EAY	GCMSZ
14	16858	72382	72382	19-3550A			02-418.1	17-MAR-97 1300		302WAT
AMPL	E ID: H	IWPW-SB03	-\$54					SAMPLE N	O: H44642	28
	OVTCS2	72308	72257				19-8260A	13-MAR-97 0406	мн	GCMSY
3	OSVTCS	72492	72449	19-3550A	19-MAR-97 1200	RDQ	19-8270B	06-APR-97 0130	EAY	GCMSA
AMPLI	E ID: H	WPW-SB04	-\$2.5					SAMPLE N	O: H44642	9
	OVTCS2	72256	72257				19-8260A	12-MAR-97 0326	JC	GCMSY
	OSVTCS	72492		19-3550A	19-MAR-97 1200	RDQ	19-8270B	01-APR-97 0344		GCMSZ
14	16858	72382	72382	19-3550A			02-418.1	17-MAR-97 1300	JLJ	302WAT
AMPLE	E ID: H	WPW-SB04-	-\$29				2	SAMPLE NO	D: H44643	0
	OVTCS2	72256	72257				19-8260A	11-MAR-97 0401	JC	GCMSY
	OSVTCS	72492		19-3550A	19-MAR-97 1200	RDQ	19-8270B	31-MAR-97 1245		GCMSZ
14	1685s	72382	72382	19-3550A			02-418.1	17-MAR-97 1300		302WAT

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	TEST	LCSR BLNK	DUP/MS MS/MSI		SAMPLE PREPA	RATION		SAMPLE ANALYSI	s
LN 	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	, ,	NALYST INSTRUMEN
SAMP	LE ID:	HWPW-SB0	4-s27						
4	01/2000	-						SAMPLE NO:	H446431
	OVTCS2 OSVTCS						19-8260A	11-MAR-97 0437 J	C GCMSY
	16858		72382	19-3550A 19-3550A	19-MAR-97 1200	RDQ	19-8270B	31-MAR-97 1334 E	
			, 2502	17-3330A			02-418.1		
SAMP	LE ID:	HWPW-SBO	4-S31					CAMPIE	
1	OVTCS2	72/74	70/70					SAMPLE NO:	H446432
	OSVTCS		72470				19-8260A	18-MAR-97 2215 JC	GCMSB
	16855	72382		19-3550A	19-MAR-97 1200	RDQ	19-8270B	31-MAR-97 1422 EA	Y GCMSZ
		. 2562	1202	19-333UA			02-418.1	17-MAR-97 1300 JL	J 302WAT
AMPL	E ID:	IWPW-SB04	-\$39					SAMPLE NO:	
5	OSVTCS	72492	72//0	10-75504	19-MAR-97 1200			SAMPLE NU:	H446433
		12472	12447	19-333UA	19-MAR-97 1200	RDQ	19-8270B	31-MAR-97 1830 EA	Y GCMSZ
AMPL	E ID: H	WPW-SB04	-S51					CAMBI E NO	N. A.
1	OVTCS2	79/74	70/70					SAMPLE NO:	H446434
	S401	72471 72327	72470 72327				19-8260A	18-MAR-97 1915 JC	CCHCD
	\$402	72326	72326				19-1312		
	OVTCW2	72602	72482				19-1312		
	OSVTCW						19-8260A		GCMSY
	OSVTCS				19-MAR-97 1500		19-8270B	02-APR-97 0311 EAY	-
	16858			19-3550A	19-MAR-97 1200	RDQ	19-8270B	02-APR-97 0311 EAY	
17	10033	12400	72468	19-3550A				18-MAR-97 0800 JLJ	GCMSZ 302WAT
MPLE	ID: HV	IPW-SB04-	·S59						
1	OVTCS2	72470	72/70					SAMPLE NO:	H446435
	OSVTCS	72492	72470 72450		19-MAR-97 1200 F		19-8260A	17-MAR-97 1421 JC	GCMSB
			72430	19-3330A	19-MAR-97 1200 F	RDQ	19-8270B	06-APR-97 1801 EAY	GCMSA
MPLE	ID: HW	PW-SB07-	S2.5					CAMPI E NO.	
1	OVTCS2	72523	72470	MA				SAMPLE NO: I	1446456
3	OSVTCS	72591		na 19-3550a	20 HAD 07 0000		19-8260A	19-MAR-97 1232 JC	GCMSB
	16858	72468		19-3550A	20-MAR-97 0900 R	DQ	19-8270B	01-APR-97 0521 EAY	GCMSZ
		12400	72400	19-333UA			02-418.1	18-MAR-97 0800 JLJ	302WAT
1PLE	ID: HW	PW-SB07-9	S19					CAMPLE NO	
1 (	OVTCS2	72523	72/70	MA				SAMPLE NO: H	446437
	SVTCS		72470				19-8260A	19-MAR-97 2328 JC	CCMCD
	6858			19-3550A	20-MAR-97 0900 RE	Q		31-MAR-97 2338 EAY	GCMSB
		12400	12400	19-3550A				18-MAR-97 0800 JLJ	GCMSZ 302WAT

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	TEST	LCSR BLNK	DUP/MS MS/MSD		SAMPLE PREPA	ARATION		SAMPLE	ANAL	YSIS	
LN	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TI	ME	ANALYST	INSTRUMEN
SAMP	LE ID:	HWPW-SB07	'-S21					SA	MPLE	NO: H4464	438
1	OVTCS2	72523	72470	NA			19-8260A	19-MAR-97	17//	10	221122
3	OSVTCS	72591	72450	19-3550A	20-MAR-97 0900	RDQ	19-8270B	31-MAR-97			GCMSB
14	16858	72468	72468	19-3550A				18-MAR-97			GCMSZ 302WAT
SAMPI	E ID: H	HWPW-SB07	-s22					CAL	anie i	IO: H4464	70
								SAF	TPLE P	IU: 14464	139
	OVTCS2	72523	72470				19-8260A	19-MAR-97	1110	ic :	GCMSB
	OSVTCS	72591		19-3550A	20-MAR-97 0900	RDQ	19-8270B	02-APR-97			GCMSZ
14	16858	72468	72468	19-3550A			02-418.1	18-MAR-97			302WAT
SAMPL	E ID: H	IWPW-SB07	-S24					SAM	DIF N	O: H4464	
								9741		O. 114404	40
	OVTCS2	72471	72470				19-8260A	18-MAR-97	2104	1C	GCMSB
	OSVTCS	72591			20-MAR-97 0900	RDQ	19-8270в	02-APR-97			GCMSZ
14	1685s	72468	72468	19-3550A			02-418.1				302WAT
SAMPL	E ID: H	WPW-SB08-	·S4					SAM	PLE N	D: H44644	41
1	OVTCS2	72471	72470	MA							
	OSVTCS	72591		19-3550A	20 27		19-8260A	18-MAR-97			GCMSB
	16858	72468		19-3550A	20-MAR-97 0900	RDQ	19-8270B	06-APR-97	1850	EAY	GCMSA
17	10053	12400	12400	19-333UA			02-418.1	18-MAR-97	0800	JLJ	302WAT
AMPL	E ID: H	WPW-SB08-	S14					SAME	PLE NO	): H44644	2
1	OVTCS2	72471	72470	NA			10.00(0)	40			
	OSVTCS	72591			20-MAR-97 0900	PDO	19-8260A	18-MAR-97 1			GCMSB
14	1685s	72468		19-3550A	20 PMR 77 0900	KDW	19-8270B 02-418.1	09-APR-97 (			GCMSA
AMD!							02-410.1	18-MAR-97 (	0080	JLJ	302WAT.
AMPLE	: ID: HW	IPW-SB08-	S18					SAMP	LE NO	: H44644	3
1	OVTCS2	72471	72470	NA			19-8260A	18-MAR-07 4	054		
3	OSVTCS	72591	72450	19-3550A	20-MAR-97 0900	RDQ	19-8270B	18-MAR-97 1	וכע	JU	GCMSB
14	16858	72468	72468	19-3550A				18-MAR-97 0			GCMSA 302WAT
AMPLE	ID: HW	PW-SB08-	S22							: H446444	
4	01/7000	70507	<b>700 / 770</b>					SAMP	LL NU	• п440444	•
	OVTCS2	72523	72470				19-8260A	19-MAR-97 1	534	ıc r	GCMSB
5	OSVTCS 1685S			19-3550A 19-3550A	20-MAR-97 0900	RDQ	19-8270в	06-APR-97 2			GCMSA
		72468									

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### SUPPLEMENTAL INFORMATION

	TEST	LCSR	DUP/MS		SAMPLE PREPAI	RATION		SAMPLE ANAL	YSIS	
LN	CODE	BLNK BATCH	MS/MSD BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYST	INSTRUMEN
SAMPL	E ID: H	WPW-SB08	-S21					SAMPLE	NO: H4464	445
1 3 14	OVTCS2 OSVTCS 1685S	72470 72591 72468	72470 72591 72468		20-MAR-97 0900	RDQ	19-8260A 19-8270B 02-418.1	17-MAR-97 1457 11-APR-97 0744 18-MAR-97 0800	EAY	GCMSB GCMSA 302WAT
_										

LR Method Literature Reference

- 02 EPA-Methods for Chemical Analysis of Water & Wastes, 1984.
- 19 EPA-Test Methods for Evaluating Solid Waste, 3rd ed, Nov. 1986 and updates

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#### SURROGATE STANDARD RECOVERY

LN	CODE	CURROCATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF L
AMP	LE ID:	HWPW-SB05-S54			
				SAMPLE NO:	H446419
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			
		4-Bromofluorobenzene	105		1
		Dibromofluoromethane	97	-	
		Toluene-d8	102	-	
4	\$BNAS	GC/MS BNA Surrogates			3
		2,4,6-Tribromophenol	70	-	
		2-Fluorobi phenyl	86	-	
		2-Fluorophenol	62	-	
		Nitrobenzene-d5	62	-	
		Phenol-d5	67	-	
		p-Terphenyl-d14	76	-	
MDI	E ID: I	WPW-SB06-S19			
	L 1D. 1	WFW-3500-3   9	:	SAMPLE NO:	H446420
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			
2 0000		4-Bromofluorobenzene			1
		Dibromofluoromethane	111	-	
		Toluene-d8	110	-	
4	\$BNAS	GC/MS BNA Surrogates	97	-	
		2,4,6-Tribromophenol	*		3
		2-Fluorobiphenyl	*	-	
		2-Fluorophenol	*	-	
		Nitrobenzene-d5	*	-	
		Phenol-d5	*	-	
		p-Terphenyl-d14	*	-	
		*The surrogates were not recovered due to the dilution required by high analyt	e	_	
	<b>6</b> 140.4.01.1	concentration.			
8	\$VOA2W	GC/MS Volatiles Surrogates (8260)			17
		1,2-Dichloroethane-d4	96	-	
		4-Bromofluorobenzene	105	-	
0	SBNAW	Toluene-d8	105	-	
•	<b>JONAN</b>	GC/MS BNA Surrogates 2,4,6-Tribromophenol			19
		2-Fluorobiphenyl	37	-	
		2-Fluorophenol	25*	-	
		Nitrobenzene-d5	7*	-	
		Phenol-d5	19*	-	
		p-Terphenyl-d14	6*	- "	
			23*	•	
		*The surrogate recovery was outside of QC acceptance limits due to matrix interference.			

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## SURROGATE STANDARD RECOVERY

LN	CODE	SURRUGATE COMPONIND	PERCENT	ACCEPTAN		
			RECOVERY	LIMITS	R	EF L
SAMPLE	ID:	HWPW-SB06-S24				
				SAMPLE NO	: H446421	
2 \$	VOA2S	GC/MS Volatiles Surrogates (8260)				
		4-Bromofluorobenzene				1
		Dibromofluoromethane	104	-		
		Toluene-d8	102	•		
4 \$	BNAS	GC/MS BNA Surrogates	97	-		
		2,4,6-Tribromophenol				3
		2-Fluorobiphenyl	60	-		
		2-Fluorophenol	84	-		
		Nitrobenzene-d5	50	-		
		Phenol-d5	70			
		p-Terphenyl-d14	70	-		
			66			
AMPLE I	D: HI	IPW-SB06-S49				
			;	SAMPLE NO:	H446422	
2 \$V	/0A2S	GC/MS Volatiles Surrogates (8260)				
		4-Bromofluorobenzene			1	
		Dibromofluoromethane	100	-		
		Toluene-d8	104	-		
4 \$B	NAS	GC/MS BNA Surrogates	99	-		
		2,4,6-Tribromophenol			3	
		2-Fluorobiphenyl	70	-		
		2-Fluorophenol	100	-		
		Nitrobenzene-d5	70	-		
		Phenol-d5	73	-		
	1	p-Terphenyl-d14	80	-		
			84	•		
IPLE ID	: HWI	PW-SB03-S5				
			S	AMPLE NO:	H446423	
2 \$V0	Mas (	GC/MS Volatiles Surrogates (8260)				
	4	-Bromofluorobenzene			1	
		ibromofluoromethane	106	-		
	T	oluene-d8	102	•		
4 SBN	AS G	C/MS BNA Surrogates	96	-		
	2	,4,6-Tribromophenol			3	
	2	-Fluorobiphenyl	*	-		
	2	-Fluorophenol	*	•		
		itrobenzene-d5	*	•		
		henol-d5	*	-		
	p	-Terphenyl-d14	*	-		
	#*	The surrogates were not recovered due to the dilution required by high analyte	*	•		
		concentration.				

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#### SURROGATE STANDARD RECOVERY

LN 	CODE	SURROGATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF LI
\MPL	E ID:	H₩P₩-SB03-S5		SAMPLE NO:	H446423
16	\$VOA2W	GC/MS Volatiles Surrogates (8260)			45
		1,2-Dichloroethane-d4	89	_	15
		4-Bromofluorobenzene	89		
		Toluene-d8	100		
18	SBNAW	GC/MS BNA Surrogates	100	-	47
		2,4,6-Tribromophenol	*	_	17
		2-Fluorobiphenyl		-	
		2-Fluorophenol	*	-	
		Nitrobenzene-d5	*	-	
		Phenol-d5	*	-	
		p-Terphenyl-d14	*	-	
		*The surrogates were not recovered during analysis. The sample will be		-	
		re-leached, re-analyzed, and reported on a separate report.			
MPLI	E ID: H	WPW-SB03-S19		SAMPLE NO:	НААААЭА
2	\$VOA2S	GC/MS Volatiles Surrogates (8260)			1
		4-Bromofluorobenzene	404		
			106	-	
		Dibromofluoromethane	106 105		
		Dibromofluoromethane Toluene-d8			
4	\$BNAS	Dibromofluoromethane	105		. 3
4	\$BNAS	Dibromofluoromethane Toluene-d8	105	-	3
4	\$BNAS	Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates	105 98	:	3
4	\$BNAS	Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol	105 98 35	:	3
4	\$BNAS	Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl	105 98 35 65		3
4	\$BNAS	Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol	105 98 35 65 30		3
4	\$BNAS	Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5	105 98 35 65 30 50		3
	\$BNAS \$VOA2W	Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5 p-Terphenyl-d14	105 98 35 65 30 50 40		
		Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5 p-Terphenyl-d14	105 98 35 65 30 50 40		3
		Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5 p-Terphenyl-d14 GC/MS Volatiles Surrogates (8260)	105 98 35 65 30 50 40 70		
		Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5 p-Terphenyl-d14 GC/MS Volatiles Surrogates (8260) 1,2-Dichloroethane-d4	105 98 35 65 30 50 40 70		
16		Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5 p-Terphenyl-d14 GC/MS Volatiles Surrogates (8260) 1,2-Dichloroethane-d4 4-Bromofluorobenzene Toluene-d8 GC/MS BNA Surrogates	105 98 35 65 30 50 40 70 88 102		15
16	\$VOAZW	Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5 p-Terphenyl-d14 GC/MS Volatiles Surrogates (8260) 1,2-Dichloroethane-d4 4-Bromofluorobenzene Toluene-d8	105 98 35 65 30 50 40 70 88 102		
16	\$VOAZW	Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5 p-Terphenyl-d14 GC/MS Volatiles Surrogates (8260) 1,2-Dichloroethane-d4 4-Bromofluorobenzene Toluene-d8 GC/MS BNA Surrogates	105 98 35 65 30 50 40 70 88 102 98		15
16	\$VOAZW	Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5 p-Terphenyl-d14 GC/MS Volatiles Surrogates (8260) 1,2-Dichloroethane-d4 4-Bromofluorobenzene Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol	105 98 35 65 30 50 40 70 88 102 98		15
16	\$VOAZW	Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5 p-Terphenyl-d14 GC/MS Volatiles Surrogates (8260) 1,2-Dichloroethane-d4 4-Bromofluorobenzene Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl	105 98 35 65 30 50 40 70 88 102 98		15
16	\$VOAZW	Dibromofluoromethane Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5 p-Terphenyl-d14 GC/MS Volatiles Surrogates (8260) 1,2-Dichloroethane-d4 4-Bromofluorobenzene Toluene-d8 GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol	105 98 35 65 30 50 40 70 88 102 98 6* 13* 1*		15

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# SURROGATE STANDARD RECOVERY

LN 	COD	SURROGATE COMPOUND	PERCENT RECOVERY	ACCEPTANC LIMITS	E REF LI
SAMP	LE ID:	HWPW-SB03-S24			
				SAMPLE NO:	H446425
2	\$VOA2	The state of the s			
		4-Bromofluorobenzene			1
		Dibromofluoromethane	101	-	•
		Toluene-d8	98	-	
4	\$BNAS	-57110 BIA Surrogates	100	_	
		2,4,6-Tribromophenol			3
		2-Fluorobiphenyl	5*	-	3
		2-Fluorophenol	90	-	
		Nitrobenzene-d5	60	_	
		Phenol-d5	71		
		p-Terphenyl-d14	60		
		* The surrogate recovery use subside to	68		
		* The surrogate recovery was outside of QC acceptance limits due to matrix interference.	-		
16	\$VOA2W	GC/MS Volatiles Surrogates (8260)			
		4-Bromofluorobenzene			Ter.
		Dibromofluoromethane	113		15
		Toluene-d8	93	-	
18	\$BNAW	GC/MS BNA Surrogates	100	-	
		2,4,6-Tribromophenol	100	-	
		2-Fluorobiphenol	60		17
		2-Fluorophenol		•	
		Nitrobenzene-d5	46	-	
		Phenol-d5	16*	-	
			37	•	
		p-Terphenyl-d14	11	-	
		* The surrogate recovery was outside of QC acceptance limits due to matrix interference.	65	-	
		interrerence.			
PLE	ID: H	IPW-SB03-S34			
7 en	V0420		SAM	MPLE NO: H4	46426
- 3	VOA2S	GC/MS Volatiles Surrogates (8260)			***************************************
		4-Bromofluorobenzene			1
		Dibromofluoromethane	109	-	•
-		Toluene-d8	97	-	
\$E	BNAS	GC/MS BNA Surrogates	107	-	
		2,4,6-Tribromophenol			3
		2-Fluorobiphenyl	*	-	3
		2-Fluorophenol	*	-	
	l	litrobenzene-d5	*	-	
		Phenol-d5	*	-	
	,	o-Terphenyl-d14	*	-	
		The surrogates were not recovered due to the dilution required as a result of			

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# SURROGATE STANDARD RECOVERY

LN CODI	SURROGATE COMPOUND	PERCENT RECOVERY	ACCEPTANC LIMITS	E REF LN
	the high concentration of target analytes.			
AMPLE ID:	HWPW-SB03-S52		SAMPLE NO:	H446427
2 \$VOA2	S GC/MS Volatiles Surrogates (8260)			
	4-Bromofluorobenzene			1
	Dibromofluoromethane	101	-	
	Toluene-d8	103	-	
4 \$BNAS	GC/MS BNA Surrogates	99	-	
	2,4,6-Tribromophenol			3
	2-Fluorobiphenyl	28	-	
	2-Fluorophenol	90	-	
	Nitrobenzene-d5	70	-	
	Phenol-d5	88	-	
	p-Terphenyl-d14	70	-	
	E confinently and	98	-	
MPLE ID:	HWPW-SB03-S54			
		;	SAMPLE NO:	H446428
2 \$VOA2S	GC/MS Volatiles Surrogates (8260)			
	4-Bromofluorobenzene			1
	Dibromofluoromethane	100	-	
	Toluene-d8	102	-	
4 \$BNAS	GC/MS BNA Surrogates	99	-	
	2,4,6-Tribromophenol			3
	2-Fluorobiphenot	48	-	J
	2-Fluorophenol	83	-	
	Nitrobenzene-d5	50	-	
	Phenol-d5	65	_	
		50	_	
	p-Terphenyl-d14	67	_	
PLE ID: H	HIDLI ODG/ og F	•		
PLE ID: P	WPW-SB04-S2.5	SI	AMPLE NO: H	1446429
2 <b>\$</b> VOA2\$	00 010 M 1 - 11	o,	unrec NO: n	1440429
T DAOMES	GC/MS Volatiles Surrogates (8260)			
	4-Bromofluorobenzene	115		1
	Dibromofluoromethane	107		
/ ADUA 0	Toluene-d8	96	-	
4 \$BNAS	GC/MS BNA Surrogates	70	-	_
	2,4,6-Tribromophenol	*		3
	2-Fluorobiphenyl	*	-	
	2-Fluorophenol		-	
	***			
	Nitrobenzene-d5	*	- 4	
	Nitrobenzene-d5 Phenol-d5 p-Terphenyl-d14	*	-	

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# SURROGATE STANDARD RECOVERY

LN C	EST DDE	SURROGATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF L
	*The s	surrogates were not recovered due to the dilution	required by high analyte		
AMPLE ID	: HWPW-SBO	14-S29			
2 \$VO	A2S GC/MS V	W-Texts -		SAMPLE NO: H4	46430
2 340	A25 GL/MS 1	Volatiles Surrogates (8260)			
		ofluorobenzene	115		1
	Toluene	ofluoromethane	104	-	
4 \$BN/			99	_	
4 40N/	2 / 4-1	BNA Surrogates	"	-	_
	2-510-1	Tribromophenol robiphenyl	*	-	3
	2-Fluor	rophenol	*		
		enzene-d5	*	-	
	Phenol-		*	_	
		nenyl-d14	*	-	
	*The su	ICCOURTES HOPE not assessed to	*	-	
	CODCED	rrogates were not recovered due to the dilution restration.	equired by high analyte		
MPLE ID:	HWPW-SB04-	-\$27	s	AMDIE NO. U.//	417A
	2s GC/MS Vo	olatiles Surrogates (8260)	S	AMPLE NO: H444	6431
	2S GC/MS Vo	olatiles Surrogates (8260) fluorobenzene		AMPLE NO: H444	6431
	2S GC/MS Vo 4-Bromof Dibromof	olatiles Surrogates (8260) fluorobenzene fluoromethane	131*	AMPLE NO: H444	
	2S GC/MS Vo 4-Bromof Dibromof Toluene-	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8	131* 108	AMPLE NO: H440	
	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix intentance	131* 108	AMPLE NO: H440 - - -	
2 \$VOA	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur confirmed	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interfere d by re-analysis.	131* 108	AMPLE NO: H440 - - -	
	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interfere d by re-analysis. HA Surrogates	131* 108	AMPLE NO: H444 - - -	1
2 \$VOA	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN 2,4,6-Tr	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interferen d by re-analysis. A Surrogates ribromophenol	131* 108	AMPLE NO: H444	
2 \$VOA	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN 2,4,6-Tr 2-Fluoroi	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interferen d by re-analysis. A Surrogates ribromophenol	131* 108 96 nce, which was	AMPLE NO: H440 - - - -	1
2 \$VOA	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN 2,4,6-Tr 2-Fluorol 2-Fluorol	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interfered by re-analysis. A Surrogates ribromophenol biphenyl	131* 108 96 nce, which was	AMPLE NO: H440 - - - -	1
2 \$VOA	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN 2,4,6-Tr 2-Fluoroi	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interfered d by re-analysis. MA Surrogates ribromophenol obiphenyl phenol zene-d5	131* 108 96 nce, which was	AMPLE NO: H440 - - - - -	1
2 \$VOA	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN 2,4,6-Tr 2-Fluorol 2-Fluorol Nitrobens Phenol-d	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interfered d by re-analysis. MA Surrogates ribromophenol bbiphenyl phenol zene-d5	131* 108 96 nce, which was	AMPLE NO: H440	1
2 \$VOA	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN 2,4,6-Tr 2-Fluorol 2-Fluorol Nitrobenz Phenol-ds p-Terpher	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interfered d by re-analysis. HA Surrogates ribromophenol ubiphenyl uphenol uzene-d5 5 nyl-d14	131* 108 96 nce, which was * *	AMPLE NO: H440	1
2 \$VOA	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN 2,4,6-Tr 2-Fluorol 2-Fluorol Nitrobenz Phenol-ds p-Terpher	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interfered d by re-analysis. MA Surrogates ribromophenol bbiphenyl phenol zene-d5 5 nyl-d14 rogates were not recovered due to the dilution	131* 108 96 nce, which was * *		1
2 \$VOA;	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN 2,4,6-Tr 2-Fluorof 2-Fluorof Nitrobenz Phenol-ds p-Terpher *The surr	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interfered d by re-analysis. HA Surrogates ribromophenol bbiphenyl phenol zene-d5 5 nyl-d14 rogates were not recovered due to the dilution requirion.	131* 108 96 nce, which was  * * * * uired by high analyte		3
2 \$VOA;	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN 2,4,6-Tr 2-Fluorol 2-Fluorol Nitrobenz Phenol-di p-Terpher *The surr concentrat	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interfered d by re-analysis. MA Surrogates ribromophenol obiphenyl phenol zene-d5 5 nyl-d14 rogates were not recovered due to the dilution requirion.	131* 108 96 nce, which was  * * * * uired by high analyte	AMPLE NO: H444	3
2 \$VOA;	2S GC/MS Vo 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN 2,4,6-Tr 2-Fluorol 2-Fluorol Nitrobenz Phenol-di p-Terpher *The surr concentrat HWPW-SB04-S	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interferent d by re-analysis.  A Surrogates bibromophenol biphenyl phenol zene-d5 5 nyl-d14 rogates were not recovered due to the dilution required.  831	131* 108 96 nce, which was  * * * * uired by high analyte		3
2 \$VOA;	2S GC/MS Vo. 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN. 2,4,6-Tr 2-Fluorol 2-Fluorol Nitroben: Phenol-di p-Terpher *The surr concentrat HWPW-SB04-S GC/MS Vol 4-Bromofle	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interferent d by re-analysis.  A Surrogates -ibromophenol dbiphenyl phenol zene-d5 5 nyl-d14 rogates were not recovered due to the dilution required tion.  631  atiles Surrogates (8260)	131* 108 96 nce, which was  * * * * * * uired by high analyte		3
2 \$VOA;	2S GC/MS Vo. 4-Bromof Dibromof Toluene- *The sur confirmed GC/MS BN. 2,4,6-Tr 2-Fluorol 2-Fluorol Nitroben: Phenol-di p-Terpher *The surr concentrat HWPW-SB04-S GC/MS Vol 4-Bromofle	olatiles Surrogates (8260) fluorobenzene fluoromethane -d8 rrogate was out of range due to matrix interfered by re-analysis. A Surrogates -ibromophenol biphenyl phenol zene-d5 5 nyl-d14 rogates were not recovered due to the dilution req tion.  631 atiles Surrogates (8260) uorobenzene uoromethane	131* 108 96 nce, which was  * * * * uired by high analyte		3

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### SURROGATE STANDARD RECOVERY

TES			PERCENT	ACCEPTANCE	
LN COD		SURROGATE COMPOUND	RECOVERY		REF LN
SAMPLE ID:	HWPW-SB04-S31			SAMPLE NO:	U//4/79
4 \$BNA	CC/MC DNA Command			SAMPLE NO:	H446432
T PDNA	, July Gail Oguces				3
	2,4,6-Tribromophenol 2-Fluorobiphenyl		*	-	-
	2-Fluorophenol	*	*	-	
	Nitrobenzene-d5		*	-	
	Phenol-d5	÷	*		
	p-Terphenyl-d14		*	-	
			*	-	
	concentration.	not recovered due to the dilution required by high analy	te		
AMPLE ID:	HWPW-SB04-S39				
			;	SAMPLE NO:	H446433
6 \$BNAS	GC/MS BNA Surrogates				
	2,4,6-Tribromophenol				5
	2-Fluorobiphenyl		*	•	
	2-Fluorophenol			-	
	Nitrobenzene-d5	• 9	-	-	
	Phenol-d5			-	
	p-Terphenyl-d14		*	-	
	*The surrogates were concentration.	not recovered due to the dilution required by high analyt	е "	•	
AMPLE ID:	HWPW-SB04-S51			<u>-</u>	
	# 0004 051		S	AMPLE NO: 1	1446434
2 \$VOA25		gates (8260)			
	4-Bromofluorobenzene		111		1
	Dibromofluoromethane		111 97		
	Toluene-d8			-	
4 \$BNAS	GC/MS BNA Surrogates		103	-	
	2,4,6-Tribromophenol	l v	*		3
	2-Fluorobiphenyl		*	-	
	2-Fluorophenol		.° *	-	
	Nitrobenzene-d5		-	-	
	Phenol-d5		*	-	
	p-Terphenyl-d14			•	
	*The surrogates were n concentration.	ot recovered due to the dilution required by high analyte		•	
6 \$VOAZW		ates (8260)			
	4-Bromofluorobenzene	(454)			15
	Dibromofluoromethane		108	-	
	Toluene-d8		91	-	1
			99		

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# SURROGATE STANDARD RECOVERY

LN CODE	SURROGATE COMPOUND	PERCENT	ACCEPTAN	
		RECOVERY	LIMITS	RE
SAMPLE ID:	HWPW-SB04-S51			
18 \$BNAW	CC (MC DVI)		SAMPLE NO	: H446434
· DINAM	GC/MS BNA Surrogates			
	2,4,6-Tribromophenol	.4.		•
	2-Fluorobiphenyl 2-Fluorophenol	*	-	
	Nitrobenzene-d5	*	-	
	Phenol-d5		-	
		*	-	
	p-Terphenyl-d14	*	-	
	*The surrogates were not recovered due to the dilution required by high concentration of target analytes.	*	-	
MPLE ID:	HWPW-SB04-S59		ness of their ser	
2 \$VOA2S	GC/MS Volatiles Surrogates (8260)	,	SAMPLE NO:	H446435
	4-Bromofluorobenzene			
	Dibromofluoromethane	10/		1
	Toluene-d8	104	•	
4 \$BNAS	GC/MS BNA Surrogates	97	-	
	2,4,6-Tribromophenol	97	-	
	2-Fluorobiphenyl			3
	2-Fluorophenol	41	-	
	Nitrobenzene-d5	64		
	Phenol-d5	55	-	
	10.00	62	-	
	p-Terphenyl-d14	44	•	
PLE ID: HW	PW-SB07-S2.5	60	-	
2 \$VOA2S	00.446	SA	MPLE NO:	H446436
	GC/MS Volatiles Surrogates (8260)			
	4-Bromofluorobenzene			. 1
	Dibromofluoromethane	110	-	
	Toluene-d8	96	-	
	GC/MS BNA Surrogates	105	-	
	2,4,6-Tribromophenol			. 3
-	2-Fluorobiphenyl	*	-	
	-Fluorophenol	*	-	
N	itrobenzene-d5	*	-	
	henol-d5	*	-	
p	-Terphenyl-d14	*	-	
*	The surrogates were not recovered due to the dilution required by high analyte concentration.	*		

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## SURROGATE STANDARD RECOVERY

LN	TEST		ERCENT	ACCEPTANCE	
		R	ECOVERY	LIMITS	REF LA
AMPLE	ID.	HUDI ODOZ 040			
PAMPLE	10:	HWPW-SB07-S19		SAMPLE NO:	H446437
2 \$	VOA2s	GC/MS Volatiles Surrogates (8260)			
		4-Bromofluorobenzene			1
		Dibromofluoromethane	114		
		Toluene-d8	105	-	
4 \$	BNAS	GC/MS BNA Surrogates	99	-	
		2,4,6-Tribromophenol			3
		2-Fluorobi phenyl	*	-	
		2-Fluorophenol	*	-	
		Nitrobenzene-d5	*	-	
		Phenol-d5	*	-	
		p-Terphenyl-d14	*		
		*The surrogates were not recovered due to the dilution required by high analyte	*	-	
		concentration.	•		
MPLE I	D: H	WPW-SB07-S21		CAMPLE NO.	
2 \$V	2540	GC/MS Volatiles Surrogates (8260)		SAMPLE NO:	H446438
	0/120	4-Bromofluorobenzene (8260)			1
		Dibromofluoromethane	108	-	1
		Toluene-d8	92	-	
4 \$B	NAS	GC/MS BNA Surrogates	105	-	
, 45	MAG				3
		2,4,6-Tribromophenol	*		3
		2-Fluorobiphenyl	*	_	
		2-Fluorophenol	*	_	
		Nitrobenzene-d5	*		
		Phenol-d5	*	_	
		p-Terphenyl-d14	*	-	
	c	*The surrogates were not recovered due to the dilution required by high analyte oncentration.		-	
PLE ID	: HW	PW-SB07-S22			
•			S	AMPLE NO: HA	446439
2 <b>\$</b> VO		GC/MS Volatiles Surrogates (8260)			
	,	-Bromofluorobenzene			1
	1	Dibromofluoromethane	111	-	
		oluene-d8	96	-	
	AS (	C/MS BNA Surrogates	102	-	
\$BN/		4,4,6-Tribromophenol			3
4 \$BN/	2	7.70 11 151 diliphicitot			
4 \$BN/	ž	-Fluorobiphenyl	*	-	
4 \$BN/	2	-Fluorobiphenyl -Fluorophenol	*	-	
4 \$BN/	2	-Fluorobiphenyl	* *		

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# REPORT OF LABORATORY ANALYSIS

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# SURROGATE STANDARD RECOVERY

LN COL	E SURROGATE COMPOUND	PERCENT	ACCEPTANC	F
	SURROGATE COMPOUND	RECOVERY	LIMITS	RE
SAMPLE ID:	HWPW-SB07-S22			
70.11 LL 1D.	UMLM_2PO1255		SAMPLE NO:	H444430
	p-Terphenyl-d14			1140437
	*The surrogates were not recovered due to the dilution	*	-	
	concentration.	by nigh analyte		
AMPLE ID:	HWPW-SB07-S24			
			SAMPLE NO:	H446440
2 \$VOA2	The same of the sa			
	4-Bromofluorobenzene			1
	Dibromofluoromethane	107	-	
	Toluene-d8	94	•	
4 \$BNAS	of the burn out togates	103		
	2,4,6-Tribromophenol			3
	2-Fluorobiphenyl	*	-	
	2-Fluorophenol	*	-	
	Nitrobenzene-d5	*	-	
	Phenol-d5	*	-	
	p-Terphenyl-d14	*	-	
	*The surrogates were not recovered due to the dilution required b	*		
	concentration.	y high analyte		
MPLE ID:	HWPW-SB08-S4			
		SA	MPLE NO: H	H446441
2 \$VOA25	GC/MS Volatiles Surrogates (8260)			
	4-Bromofluorobenzene			1
	Dibromofluoromethane	109	-	
	Toluene-d8	98	-	
4 \$BNAS	GC/MS BNA Surrogates	99	-	
	2,4,6-Tribromophenol			. 3
	2-Fluorobi phenyl	*	-	
	2-Fluorophenol	*		
	Nitrobenzene-d5	*	-	
	Phenol-d5	*	-	
	p-Terphenyl-d14	*	-	
	*The surrogates were not recovered due to the dilution required by concentration.	high analyte	-	
		an anatyte		
LE ID: H	WPW-SB08-S14	SAM	DIE NO. III	////5
\$VOA2S	GC/MS Volatiles Surrogates (8260)	SAM	PLE NO: H4	40442
	4-Bromofluorobenzene			
	Dibromofluoromethane	114	_	1
	Toluene-d8	112		

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### SURROGATE STANDARD RECOVERY

SAMPLE ID: HWPW-SB08-S14  4 SBNAS GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorophenol Nitrobenzene-d5 Phenol-d5 P-Terphenyl-d14 *The surrogates were not recovered due to the dilution required by high analyte concentration.  AMPLE ID: HWPW-SB08-S18  2 \$VOAZS GC/MS Volatiles Surrogates (8260) 4-Bromofluoromethane Dibromofluoromethane Toluene-d8 * Surrogate recovery was outside QC acceptance limits due to matrix effects which confirmed by re-analysis.  4 \$BNAS GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorophenol Nitrobenzene-d5 Phenol-d5 Phenol-d5 Phenol-d5 Phenol-d5 Phenol-d5 Phenol-d5 Phenol-d5 Phenol-d5 P-Terphenyl-d14 *The surrogates were not recovered due to the dilution required by high analyte concentration.	LN CODE		PERCENT	ACCEPTANC	E
SAMPLE NO: N446442   SAMPLE NO: N446442   SAMPLE NO: N446442   SAMPLE NO: N446442   SAMPLE NO: N446442   SAMPLE NO: N446442   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446444   SAMPLE		SURROGATE COMPOUND	RECOVERY		REF
SAMPLE NO: N446442   SAMPLE NO: N446442   SAMPLE NO: N446442   SAMPLE NO: N446442   SAMPLE NO: N446442   SAMPLE NO: N446442   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446443   SAMPLE NO: N446444   SAMPLE	SAMPLE ID:	HUPU-SR08-S14			
2,4,6-Tribromophenol				SAMPLE NO:	H446442
2-Filurophiphenyl   2-Filurophiphenyl   2-Filurophiphenyl   2-Filurophiphenyl   2-Filurophiphenyl   2-Filurophiphenyl   3-Fi	4 \$BNAS				7
			*	_	3
Nitrobenzene-d5			*	_	
Phenol-d5			*	_	
P-Terphenyl-d14			*	-	
#The surrogates were not recovered due to the dilution required by high analyte concentration.  #### AMPLE ID: HMPM-SB08-S18    SAMPLE No: H446443			*	-	
AMPLE ID: HMPH-SB08-S18 SAMPLE NO: H446443  2 \$V0A2S GC/MS Volatiles Surrogates (8260)			*	_	
SAMPLE NO: H446443		*The surrogates were not recovered due to the dilution required by high analy concentration.	te		
2   \$VOA2S   \$C/MS Volatiles Surrogates (8260)	AMPLE ID:	HWPW-SB08-S18			
4-Bromofluorobenzene Dibromofluoromethane Dibromofluoromethane Dibromofluoromethane Dibromofluoromethane Toluene-dB Tolue				SAMPLE NO:	H446443
124*	2 \$VOA29	GC/MS Volatiles Surrogates (8260)			1
Dibromofluoromethane   76   107   - 1   104   107   - 1   104   107   - 1   104   107   - 1   104   107   - 1   104   107   - 1   104   107   - 1   104   107   - 1   107   - 1   107   - 1   107   - 1   107   - 1   107   - 1   107   - 1   107   - 1   107   - 1   107   - 1   107   - 1   107   - 1   107   - 1   107			124*		ı
Toluene-d8		Dibromofluoromethane		_	
**Surrogate recovery was outside QC acceptance limits due to matrix effects which confirmed by re-analysis.  4 \$BNAS GC/MS BNA Surrogates 2,4,6-Tribromophenol				_	
2,4,6-Tribromophenol		which confirmed by re-analysis.	107		
2-Fluorophenol	4 \$BNAS				7
2-Fluorophenol Nitrobenzene-d5 Phenol-d5 P-Terphenyl-d14 *The surrogates were not recovered due to the dilution required by high analyte concentration.  MPLE ID: HWPW-SB08-S22  \$AMPLE NO: H446444  2 \$VOA2S GC/MS Volatiles Surrogates (8260) 4-Bromofluorobenzene Dibromofluoromethane Toluene-d8  GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5			*	_	3
Nitrobenzene-d5 Phenol-d5 Phenol-d5 P-Terphenyl-d14 *The surrogates were not recovered due to the dilution required by high analyte concentration.  MPLE ID: HWPW-SB08-S22  SAMPLE NO: H446444  2 \$VOA2S GC/MS Volatiles Surrogates (8260) 4-Bromofluorobenzene Dibromofluoromethane Dibromofluoromethane 118 - 106 - 1016 -			*	-	
Phenol-d5 p-Terphenyl-d14 *The surrogates were not recovered due to the dilution required by high analyte concentration.  MPLE ID: HWPW-SB08-S22  SAMPLE NO: H446444  2 \$VOA2S GC/MS Volatiles Surrogates (8260) 4-Bromofluorobenzene Dibromofluoromethane Toluene-d8 4 \$BNAS GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5			*	-	
p-Terphenyl-d14 *The surrogates were not recovered due to the dilution required by high analyte concentration.  MPLE ID: HWPW-SB08-S22  SAMPLE NO: H446444  2 \$VOA2S GC/MS Volatiles Surrogates (8260)  4-Bromofluorobenzene Dibromofluoromethane Toluene-d8 4 \$BNAS GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5			*		
*The surrogates were not recovered due to the dilution required by high analyte concentration.  MPLE ID: HWPW-SB08-S22  SAMPLE NO: H446444  2 \$VOA2S GC/MS Volatiles Surrogates (8260) 4-Bromofluorobenzene Dibromofluoromethane Toluene-d8 4 \$BNAS GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5		Phenol-d5	*		
### SENAS   GC/MS Volatiles Surrogates (8260)  4-Bromofluoromethane   118   -			*	_	
2 \$VOA2S GC/MS Volatiles Surrogates (8260) 4-Bromofluorobenzene Dibromofluoromethane Toluene-d8 4 \$BNAS GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5		*The surrogates were not recovered due to the dilution required by high analyticoncentration.	е		
4-Bromofluorobenzene Dibromofluoromethane Toluene-d8  4 \$BNAS GC/MS BNA Surrogates  2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5	MPLE ID: 1	WPW-SB08-S22	\$	SAMPLE NO:	H446444
4-Bromofluorobenzene Dibromofluoromethane Toluene-d8  4 \$BNAS GC/MS BNA Surrogates  2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d5	2 \$VOA2S	GC/MS Volatiles Surrogates (8260)			
Toluene-d8 106 - Toluene-d8 99 -  4 \$BNAS GC/MS BNA Surrogates 2,4,6-Tribromophenol		4-Bromofluorobenzene	110		1
SBNAS GC/MS BNA Surrogates  2,4,6-Tribromophenol  2-Fluorobiphenyl  2-Fluorophenol  Nitrobenzene-d5 Phenol-d5				-	
4 SBNAS GC/MS BNA Surrogates 2,4,6-Tribromophenol 2-Fluorobiphenyl 2-Fluorophenol * Nitrobenzene-d5 Phenol-d5				-	
2-Fluorobiphenot 2-Fluorophenot  2-Fluorophenot  Nitrobenzene-d5  Phenol-d5	4 \$BNAS		99	-	_
2-Fluorophenyl 2-Fluorophenol * Nitrobenzene-d5 Phenol-d5			_		3
Nitrobenzene-d5 Phenol-d5		2-Fluorobiphenyl	*	-	
Phenol-d5		2-Fluorophenol	-	-	
*		Nitrobenzene-d5	×	-	
p-Terphenyl-d14		Phenol-d5	*	•	
		p-Terphenyl-d14	# _	-	

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# SURROGATE STANDARD RECOVERY

	TEST	/			
LN 	CODE	SURRUGATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF LN
		*The surrogates were not recovered due to the dilution required by high analy	/te		
SAMP	LE ID:	HWPW-SB08-S21		SAMPLE NO:	H446445
2	\$VOA2S				
		4-Bromofluorobenzene			1
		Dibromofluoromethane	112	•	
		Toluene-d8	112	-	
4	\$BNAS	GC/MS BNA Surrogates	102	-	
		2,4,6-Tribromophenol			3
		2-Fluorobiphenyl	*	-	
	and a contract of the contract	2-Fluorophenol	*		
		Nitrobenzene-d5	*	-	
		Phenol-d5	*	-	
		p-Terphenyl-d14	*	-	
		*The surrogates were not recovered due to the dilution required by high analyt	* e	•	**************************************

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# LABORATORY CONTROL SAMPLE RECOVERY

TES			
COD	E DETERMINATION	LCS % RECOVERY	ACCEPTANCE LIMITS
ATCH NO:	72194		
			SAMPLE NO: H38339
OVIC	S2 8260A TCL Volatiles in Soil		
	1,1-Dichloroethene	0/	
	Benzene	94	-
	Chlorobenzene	98	-
	Toluene	96	-
	Trichloroethene	98	-
TOU NO	7007	84	•
TCH NO:	72256		
OVERS	2 . 00/0.		SAMPLE NO: H383484
OVICS	2 8260A TCL Volatiles in Soil		
	1,1-Dichloroethene	94	
	Benzene	94 99	-
	Chlorobenzene	99	-
	Toluene	100	-
	Trichloroethene	79	-
בסון אס	70700	79	-
TCH NO:	72308		
OVERDE	00/01		SAMPLE NO: H383562
OVICSZ	8260A TCL Volatiles in Soil		
	1,1-Dichloroethene	05	
	Benzene	95 107	-
	Chlorobenzene		-
	Toluene	110	<u>-</u>
	Trichloroethene	114	-
au		89	
CH NO:	72382		
			SAMPLE NO: H383667
16858	Petroleum Hydrocarbons	94.8	
יים או	75./ P.A	74.0	•
CH NO: 7	2450		
OCVICO	201		SAMPLE NO: H383781
034162	TCL - Semi-volatile Extractables in Soil		
	1,2,4-Trichlorobenzene	59	
	1,4-Dichlorobenzene	48	
	2,4-Dinitrotoluene		-
	2-Chlorophenol	80 55	•
	4-Nitrophenol		•
	Acenaphthene	80 67	
	Pentachlorophenol		•
	Phenoi	70	•
	Pyrene n-Nitrosodi-n-propylamine	47:	

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# LABORATORY CONTROL SAMPLE RECOVERY

		WINCE SAMPLE RECOVERY		
	AT			
TE.		LCS %	400000	
	DE DETERMINATION	RECOVERY	ACCEPTANCE LIMITS	
	p-Chloro-m-cresol			
BATCH NO:	72/40	55	•	
DATER NO.	72400		SAMPLE NO: H383812	
1685	S Petroleum Hydrocarbons		07411 EE NO. 11303012	
		88.1	-	
BATCH NO:	72470			
OVTC	S2 8260A TCL Volatiles in Soil		SAMPLE NO: H383816	
	1,1-Dichloroethene			
	Benzene	86		
	Chlorobenzene	90	•	
	Toluene	. 81		
	Trichloroethene	91	•	
BATCH NO:	72471		-	· · · · · · · · · · · · · · · · · · ·
			SAMPLE NO: H383818	
OVTCS	2 8260A TCL Volatiles in Soil			
	1,2-Dichloroethane	89		
	Benzene Chlorobenzene	92	•	
	Toluene	85		
	Trichloroethene	95		
		95	•	
BATCH NO:	72492			
OSVTCS	S TCL - Semi-volatile Extractables in Soil		SAMPLE NO: H383850	
	1,2,4-Trichlorobenzene			
	1,4-Dichlorobenzene	78		
	2,4-Dinitrotoluene	74	•	
	2-Chlorophenol	84 65 . L	•	
	4-Nitrophenol Acenaphthene	100	•	
	Pentachlorophenol	77	•	
	Phenol	85	•	
	Pyrene	60 .2	•	
	n-Nitrosodi-n-propylamine	95	× •	
	p-Chloro-m-cresol	82 65 .]	•	
BATCH NO: 7	72496	05.	•	
			SAMPLE NO: H383854	
OSVTCW	TCL - Semi-volatile Extractables in Water		1130304	
	1,2,4-Trichlorobenzene			
	1,4-Dichlorobenzene	76 72	•	(
		12	-	Since

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## LABORATORY CONTROL SAMPLE RECOVERY

TEST	BETTER	LCS %	ACCEPTANCE
	DETERMINATION	RECOVERY	LIMITS
	2,4-Dinitrotoluene		
	2-Chlorophenol	89	-
	4-Nitrophenol	70	-
	Acenaphthene	70	•
	Pentachlorophenol	79	-
	Phenol	80	-
	Pyrene	65 ~	
	n-Nitrosodi-n-propylamine	85	-
	p-Chloro-m-cresol	76	-
		75	•
ATCH NO:	72523		SAMPLE NO: H383899
OVTCS2	8260A TCL Volatiles in Soil		
	1,1-Dichloroethene	85	
	Benzene	90	•
	Chlorobenzene	87	, <u>-</u>
	Toluene	96	-
	Trichloroethene	96	
TCH NO: 7	72591		
			SAMPLE NO: H384011
OSVTCS	TCL - Semi-volatile Extractables in Soil		
	1,2,4-Trichlorobenzene	83	a
	1,4-Dichlorobenzene	81	_
	2,4-Dinitrotoluene	110	-
	2-Chlorophenol	75	-
	4-Nitrophenol	130	-
	Acenaphthene	86	
	N-Nitrosodi-n-propylamine	160	<u> </u>
	Pentachlorophenol	85	
	Phenol	60	-
	Pyrene	90	-
	p-Chloro-m-cresol	80	•
TCH NO: 72	2602		
	<u> </u>		SAMPLE NO: H384025
OVTCW2	8260A TCL Volatiles in Water		
	1,1-Dichloroethene	85	_
	Benzene	90	-
	Chlorobenzene	87	-
	Toluene	96	-
	Trichloroethene	96	-

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### LABORATORY CONTROL SAMPLE RECOVERY

TEST CODE	DETERMINATION	LCS % RECOVERY	ACCEPTANCE LIMITS
BATCH NO: 7	2735		SAMPLE NO: H384202
OVTCW2	8260A TCL Volatiles in Water 1,1-Dichloroethene Benzene Chlorobenzene Toluene Trichloroethene	102 94 92 99 95	- - - -

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### METHOD BLANK DATA

CODE	DETERMINATION			
	DETERMINATION	RESUL	T UNIT	
BATCH NO:	72194			
			SAMPLE NO:	H383391
OVTCS				
	1,2-Dichloroethane	< 5	ug/kg	
	Benzene	< 5	-3,3	
	Chlorobenzene	< 5	-3,3	
	Ethylbenzene	< 5	-3/ 13	
	Methylene chloride	< 5	-3, 113	
	Toluene	< 5	-3, r3	
	Xylenes (total)	< 5	-3, 113	
BATCH NO:	72256		SAMPLE NO:	H383485
OVTCS2	8260A TCL Volatiles in Soil			
	1,2-Dichloroethane	_		
	Benzene	< 5	-3,	
	Chlorobenzene	< 5	-3,	
	Ethylbenzene	< 5	-37 113	
	Methylene chloride	< 5	-37 113	
	Toluene	< 5	-3,	
	Xylenes (total)	< 5 < 5	ug/kg ug/kg	
ATCH NO: 7	72308			
			SAMPLE NO:	н383563
OVTCS2	8260A TCL Volatiles in Soil			
	1,2-Dichloroethane	< 5	ug/kg	
	Benzene	. < 5	ug/kg ug/kg	
	Chlorobenzene	< 5	ug/kg	
	Ethylbenzene	< 5		
	Methylene chloride	< 5	ug/kg ug/kg	
	Toluene	< 5		
	Xylenes (total)	< 5	ug/kg ug/kg	
ATCH NO: 7	2382	\$	SAMPLE NO:	H383668
16858	Petroleum Hydrocarbons	< 20	mg/kg	
TCH NO: 7	2450			
			SAMPLE NO: I	H383782
OSVTCS	TCL - Semi-volatile Extractables in Soil			
	1,2-Diphenylhydrazine	< 330	ug/kg	
	2,4-Dimethylphenol 2,4-Dinitrotoluene	< 330	ug/kg	
	2 A-Dinitrotoluene	< 330	ug/kg	
	2,6-Dinitrotoluene	< 330	ug/kg	

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### METHOD BLANK DATA

TEST	DETERMINATION OF THE PROPERTY				
	DETERMINATION	RESULT	UNIT	-	
	2-Chloronaphthalene				
		< 330	ug/kg		
	2-Methylnaphthalene 4,6-Dinitro-o-cresol	< 330			
		< 1,600			
	4-Nitrophenol Acenaphthene	< 1,600			
	·	< 330			
	Acenaphthylene Anthracene	< 330			
		< 330			
	Benzo(a)anthracene	< 330			
	Benzo(a)pyrene	< 330			
	Chrysene	< 330	-3,		
	Di-n-butyl phthalate	< 330	ug/kg		
	Dibenzofuran	< 330	ug/kg		
	Fluoranthene	< 330	ug/kg		
	Fluorene	< 330	ug/kg		
	N-Nitrosodiphenylamine	< 330	ug/kg ug/kg		
	Naphthalene	< 330	ug/kg		
	Nitrobenzene	< 330	ug/kg ug/kg		
	Pentachlorophenol	< 1,600			
	Phenanthrene	< 330	ug/kg		
	Phenol	< 330	ug/kg		
	Pyrene		ug/kg		
	bis(2-Chloroethoxy)methane	< 330	ug/kg		
	bis(2-Ethylhexyl)phthalate	< 330 < 330	ug/kg		
H NO: 72	2468		ug/kg	(	
			SAMPLE NO:	H383813	
16858	Petroleum Hydrocarbons	- 20			
		< 20	mg/kg		
H NO: 72	470		SAMPLE NO:	H383817	
	8260A TCL Volatiles in Soil				
	1,1,1-Trichloroethane	< 5	ug/kg		
10	1,1,2,2-Tetrachloroethane	< 5			
	1,1,2-Trichloroethane	< 5	ug/kg		
	1,1-Dichloroethane		ug/kg		
	1,1-Dichloroethene	< 5 < 5	ug/kg		
	1,2-Dichloroethane	< 5	ug/kg		
	1,2-Dichloropropane	< 5	ug/kg		
	2-Butanone		ug/kg		
	2-Chloroethoxyethene	< 10	ug/kg		
	2-Hexanone	< 10	ug/kg		
4	-Methyl-2-pentanone	< 10	ug/kg		
	Acetone	< 10	ug/kg		
,		< 10	ug/kg		

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### METHOD BLANK DATA

TEST			
	DETERMINATION	RESULT	UNIT
	Bromodichloromethane	< 5	ug/kg
	Bromoform	< 5	ug/kg
	Bromomethane	< 10	ug/kg
	Carbon disulfide	< 5	ug/kg
	Carbon tetrachloride	< 5	ug/kg
	Chlorobenzene	< 5	ug/kg
	Chloroethane	< 10	ug/kg
	Chloroform	< 5	ug/kg
	Chloromethane	< 10	ug/kg
	Dibromochloromethane	< 5	ug/kg
	Dichloromethane	< 5	ug/kg
	Ethylbenzene	< 5	ug/kg
	Methylene chloride	< 5	ug/kg ug/kg
	Styrene	< 5	ug/kg
	Tetrachloroethene	< 5	
	Toluene	< 5	ug/kg
	Trichloroethene	< 5	ug/kg
	Vinyl acetate	< 10	ug/kg
	Vinyl chloride	< 10	ug/kg
	Xylenes (total)	< 5	ug/kg
	cis-1,2-Dichloroethene	< 5	ug/kg
	cis-1,3-Dichloropropene	< 5	ug/kg
	trans-1,2-Dichloroethene		ug/kg
	trans-1,3-Dichloropropene	< 5	ug/kg
		< 5	ug/kg
TCH NO: 7	2471		
		S	AMPLE NO: H383819
OVTCS2	8260A TCL Volatiles in Soil		
	1,2-Dichloroethane	*	
	Benzene	< 5	ug/kg
	Chlorobenzene	< 5	ug/kg
	Ethylbenzene	< 5	ug/kg
	Methylene chloride	< 5	ug/kg
	Toluene	< 5	ug/kg
	Xylenes (total)	< 5	ug/kg
		< 5	ug/kg
TCH NO: 7	2492	SA	MPLE NO: H383851
OSVTCS	TCL - Semi-volatile Extractables in Soil		
	1,2-Diphenylhydrazine		
	2,4-Dimethylphenol	< 330	ug/kg
	2,4-Dinitrotoluene	< 330	ug/kg
	2,6-Dinitrotoluene	< 330	ug/kg
	2-Chloronaphthalene	< 330	ug/kg
	Straight eller elle	< 330	ug/kg

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### METHOD BLANK DATA

CODE	DETERMINATION	RESULT	UNIT		
	2-Methylnaphthalene	< 330	ua/ka		
	4,6-Dinitro-o-cresol	< 1,600	ug/kg		
	4-Nitrophenol	< 1,600	ug/kg ug/kg		
	Acenaphthene	< 330	ug/kg ug/kg		
	Acenaphthylene	< 330	ug/kg		
	Anthracene	< 330	ug/kg		
	Benzo(a)anthracene	< 330			
	Benzo(a)pyrene	< 330	ug/kg		
	Chrysene	< 330	ug/kg		
•	Di-n-butyl phthalate	< 330	ug/kg		
	Dibenzofuran	< 330	ug/kg		
	Fluoranthene	< 330	ug/kg		
	Fluorene	< 330	ug/kg		
	N-Nitrosodiphenylamine	< 330	ug/kg		
	Naphthalene	< 330	ug/kg		
	Nitrobenzene	< 330	ug/kg		
	Pentachlorophenol		ug/kg		** .
	Phenanthrene	< 1,600 < 330	ug/kg		
	Phenol	< 330	ug/kg		
	Pyrene	< 330	ug/kg		
	bis(2-Chloroethoxy)methane		ug/kg		
	bis(2-Ethylhexyl)phthalate	< 330 < 330	ug/kg ug/kg		
TCH NO: 7	72496				
		S	SAMPLE NO:	H383855	
OSVTCW	TCL - Semi-volatile Extractables in Water				
	1,2-Diphenylhydrazine	< 10			
	2,4-Dimethylphenol	< 10	ug/L		
	2,4-Dinitrotoluene	< 10	ug/L		
	2,6-Dinitrotoluene		ug/L		
			ug/L		
	2-Chloronaphthalene	< 10	_		
	2-Chloronaphthalene 2-Methylnaphthalene	< 10	ug/L		
	2-Methylnaphthalene 4,6-Dinitro-o-cresol	< 10 < 10	ug/L ug/L		
	2-Methylnaphthalene	< 10 < 10 < 50	ug/L ug/L ug/L		
	2-Methylnaphthalene 4,6-Dinitro-o-cresol	< 10 < 10 < 50 < 50	ug/L ug/L ug/L ug/L		
	2-Methylnaphthalene 4,6-Dinitro-o-cresol 4-Nitrophenol	< 10 < 10 < 50 < 50 < 10	ug/L ug/L ug/L ug/L ug/L		
	2-Methylnaphthalene 4,6-Dinitro-o-cresol 4-Nitrophenol Acenaphthene	< 10 < 10 < 50 < 50 < 10 < 10	ug/L ug/L ug/L ug/L ug/L ug/L		
	2-Methylnaphthalene 4,6-Dinitro-o-cresol 4-Nitrophenol Acenaphthene Acenaphthylene	< 10 < 10 < 50 < 50 < 10 < 10	ug/L ug/L ug/L ug/L ug/L ug/L		
	2-Methylnaphthalene 4,6-Dinitro-o-cresol 4-Nitrophenol Acenaphthene Acenaphthylene Anthracene	< 10 < 10 < 50 < 50 < 10 < 10 < 10 < 10	ug/L ug/L ug/L ug/L ug/L ug/L ug/L		
	2-Methylnaphthalene 4,6-Dinitro-o-cresol 4-Nitrophenol Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Chrysene	< 10 < 10 < 50 < 50 < 10 < 10 < 10 < 10 < 10 < 10	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		
	2-Methylnaphthalene 4,6-Dinitro-o-cresol 4-Nitrophenol Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene	< 10 < 10 < 50 < 50 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 1	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		
	2-Methylnaphthalene 4,6-Dinitro-o-cresol 4-Nitrophenol Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Chrysene	< 10 < 10 < 50 < 50 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 1	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		
	2-Methylnaphthalene 4,6-Dinitro-o-cresol 4-Nitrophenol Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Chrysene Di-n-butylphthalate	< 10 < 10 < 50 < 50 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 1	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		

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### METHOD BLANK DATA

• • • • • • • • • • • • • • • • • • • •			
TEST			
CODE	DETERMINATION	RESULT	UNIT
	N-Nitrosodiphenylamine	< 10	ug/L
	Naphthalene	< 10	ug/L
	Nitrobenzene	< 10	ug/L
	Pentachlorophenol	< 50	ug/L
	Phenanthrene	< 10	ug/L
	Phenol	< 10	ug/L
	Pyrene	< 10	ug/L
	bis(2-Chloroethoxy)methane	< 10	ug/L
	bis(2-Ethylhexyl)phthalate	< 10	ug/L
TCH NO:	72523		
OVTCS2	93404 TOL Malacilla	3)	MPLE NO: H383900
041632	The second of the cont	·	
	1,2-Dichloroethane	< 5	ug/kg
	Benzene	< 5	ug/kg
	Chlorobenzene	< 5	ug/kg
	Ethylbenzene	< 5	ug/kg
	Methylene chloride	< 5	ug/kg
	Toluene	< 5	ug/kg
	Xylenes (total)	< 5	ug/kg
TCH NO: 7	72591		
		SA	MPLE NO: H384012
OSVICS	TCL - Semi-volatile Extractables in Soil		
	1,2,4-Trichlorobenzene	< 330	ug/kg
	1,2-Dichlorobenzene	< 330	ug/kg
	1,2-Diphenylhydrazine	< 330	ug/kg
	1,3-Dichlorobenzene	< 330	ug/kg
	1,4-Dichlorobenzene	< 330	ug/kg
	2,4,5-Trichlorophenol	< 330	ug/kg
	2,4,6-Trichlorophenol	< 330	
	2,4-Dichlorophenol	< 330	ug/kg
	2,4-Dimethylphenol	< 330	ug/kg
	2,4-Dinitrophenol		ug/kg
	2,4-Dinitrotoluene	< 1,600	ug/kg
	2,6-Dinitrotoluene	< 330	ug/kg
	2-Chloronaphthalene	< 330	ug/kg
	2-Chlorophenol	< 330	ug/kg
	2-Methylnaphthalene	< 330	ug/kg
	2-Methylphenol	< 330	ug/kg
	2-Nitroaniline	< 330	ug/kg
	2-Nitrophenol	< 1,600	ug/kg
	3,3'-Dichlorobenzidine	< 330	ug/kg
	3-Nitroaniline	< 660	ug/kg
	s 1862 2 <b>2.11 1110</b>	< 1,600	ug/kg

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### METHOD BLANK DATA

TEST					
CODE	DETERMIN	NATION	RESULT	UNIT	
 				•••••	
	4,6-Dinitro-o-cresol		< 1,600	ug/kg	
	4-Bromophenylphenylether		< 330	ug/kg	
	4-Chloro-3-methylphenol		< 330	ug/kg	
	4-Chloroaniline		< 330	ug/kg	
	4-Chlorophenylphenylether		< 330	ug/kg	
	4-Methylphenol		< 330	ug/kg	
	4-Nitroaniline		< 1,600	ug/kg	
	4-Nitrophenol		< 1,600	ug/kg	
	Acenaphthene		< 330	ug/kg	
	Acenaphthylene		< 330	ug/kg	
	Anthracene		< 330	ug/kg	
	Benzo(a)anthracene		< 330	ug/kg	
	Benzo(a)pyrene		< 330	ug/kg	
	Benzo(b)fluoranthene		< 330	ug/kg	
	Benzo(g,h,i)perylene		< 330	ug/kg	
	Benzo(k)fluoranthene		< 330	ug/kg	
	Benzoic acid		< 1,600	ug/kg	* 1
	Benzyl alcohol		< 330	ug/kg	
	Butylbenzylphthalate		< 330	ug/kg	
	Chrysene		< 330	ug/kg	
	Di-n-butyl phthalate		< 330	ug/kg	
	Di-n-butylphthalate		< 330	ug/kg	
	Di-n-octylphthalate		< 330	ug/kg ug/kg	
	Dibenzo(a,h)anthracene		< 330	ug/kg ug/kg	
	Dibenzofuran		< 330	ug/kg	
	Diethylphthalate		< 330		
	Dimethylphthalate		< 330	ug/kg	
	Fluoranthene		< 330	ug/kg	
	Fluorene		< 330	ug/kg ug/kg	
	Hexachlorobenzene		< 330	ug/kg	
	Hexachlorobutadiene		< 330		
	Hexachlorocyclopentadiene		< 330	ug/kg	
	Hexachloroethane		< 330	ug/kg	
	Indeno(1,2,3-cd)pyrene		< 330	ug/kg	
	Isophorone		< 330	ug/kg	
	N-Nitrosodi-n-propylamine		< 330	ug/kg	
	N-Nitrosodiphenylamine		< 330	ug/kg	
9	Naphthalene		< 330	ug/kg	
	Nitrobenzene		< 330	ug/kg	
	Pentachlorophenol		< 1,600	ug/kg	
	Phenanthrene		< 330	ug/kg	
1	Phenol		< 330	ug/kg	
	Pyrene		< 330	ug/kg	
ı	ois(2-Chloroethoxy)methane		< 330	ug/kg	7 w
			· 330	ug/kg	( )

# 210

# REPORT OF LABORATORY ANALYSIS

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Report No.: 00060410
Section E Page 7

## METHOD BLANK DATA

TEST				
CODE	DETERMINATION	RESULT	UNIT	
		RESULT	UNII	
	roethyl)ether	< 330	ug/kg	
	roisopropyl)ether	< 330	ug/kg	
bis(2-Eth)	lhexyl)phthalate	< 330	ug/kg	
ATCH NO: 72602	*			
			SAMPLE NO:	H384026
OVTCW2 8260A TCL	Volatiles in Water	· *		
	roethylene	< 5	ug/L	
1,2-Dichlo	roethane	< 5	ug/L	
Benzene		< 5	ug/L	
Carbon Tet	rachloride	< 5	ug/L	
Chlorobenz		< 5	ug/L	
Chloroform		< 5	ug/L	
Ethylbenze		< 5	ug/L	
Methylene	chloride	< 5	ug/L	
Toluene		< 5	ug/L	
Xylenes (t	otal)	< 5	ug/L	
TCH NO: 72735				
		S	AMPLE NO:	H384203
	olatiles in Water			
1,2-Dichlor	oethane	< 5	ug/L	
Benzene		< 5	ug/L	
Chlorobenze	ne	< 5	ug/L	
Ethylbenzer		< 5	ug/L	
Methylene o	hloride	< 5	ug/L	
Toluene		< 5	ug/L	
Xylenes (to	tal)	< 5	ug/L	

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# MATRIX SPIKE AND MATRIX SPIKE DUPLICATE DATA

TEST CODE	DETERMINATION	MS RESULT	MSD RESULT	UNITS		MS PCT	MSD P
			KL30L1	UNIIS	RPD	RCVRY	RCVR
BATCH NO:	71777						
					SA	MPLE NO: H444	676
OVTCWD	Volatiles by 8260 - Subtitle D						
	1,1-Dichloroethene	36.1	,,,				
	Benzene	39.7	41.6	ug/L	14.3	90	104
	Chlorobenzene	39.5	44.1	ug/L	10.4	99	110
	Toluene	38.8	40.6	ug/L	2.95	99	102
	Trichloroethene		40.9	ug/L	5.27	97	102
	,	34.5	35.1	ug/L	1.72	86	88
ATCH NO:	71777						
OVTCWD	Volatiles by 8260 - Subtitle D				SAF	APLE NO: H444	681
CVIGND	1,1-Dichloroethene	/0.0					
	Benzene	40.8	37.1	ug/L	9.50	102	93
	Chlorobenzene	44.8	39.8	ug/L	11.8	112	100
	Toluene	44.8	40.7	ug/L	9.60	112	100
	Trichloroethene	43.7	40.9	ug/L	6.60	109	1.
	Trentor de thene	39.8	35.1	ug/L	12.5	100	88
ATCH NO: 7	2257						
					SAM	PLE NO: H4462	26
OVTCS2	8260A TCL Volatiles in Soil						
	1,1-Dichloroethene	35.7	37.5	ug/kg	F 00	.22	
	Benzene	38.4	39.2	_	5.00	89	94
	Chlorobenzene	36.6	37.6	ug/kg	2.09	96	98
	Toluene	38.6	39.0	ug/kg	2.48	92	94
	Trichloroethene	37.0	39.4	ug/kg	1.06	96	97
		57.0	39.4	ug/kg	6.18	92	98
TCH NO: 7	2257				SAMP	LE NO: H44623	22
OVTCS2	8260A TCL Volatiles in Soil					1144021	,,,
	1,1-Dichloroethene	70 F					
	Benzene	39.5	38.2	ug/kg	3.32	99	96
	Chlorobenzene	40.0	39.6	ug/kg	1.03	100	99
	Toluene	38.3	39.1	ug/kg	2.17	96	98
	Trichloroethene	38.5	40.8	ug/kg	5.77	96	102
	The first of detriene	38.8	34.7	ug/kg	11.2	97	87
TCH NO: 72	382						
1685s	Datastassa				SAMPI	E NO: H44642	0
	Petroleum Hydrocarbons The concentration of the analyte pratrix spike.	640	570	mg/kg	11.6	•	
•	ine concentration of the analyte or	coverted			11.0	-	*

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## MATRIX SPIKE AND MATRIX SPIKE DUPLICATE DATA

CODE	DETERMINATION	MS RESULT	MSD RESULT	UNITS	RPD	MS PCT RCVRY	MSD PCT RCVRY
							RCVKI
BATCH NO: 72449					SAM	IPLE NO: H446	5230
OSVTCS TCL	- Semi-volatile Extractables	in Soil					
	,4-Trichlorobenzene	56	54	um dem	7 /		
	-Dichlorobenzene	59	60	ug/kg ug/kg	3.6	56	54
	-Dinitrotoluene	53	56	ug/kg ug/kg	1.7 5.6	59	54
2-ci	nlorophenol	100	110	ug/kg ug/kg	9.5	53	54
4-N	itrophenol	82	68	ug/kg ug/kg	19	50	54
Acer	naphthene	56	53	ug/kg	5.6	41	54
N-Ni	itrosodi-n-propylamine	55	59	ug/kg	7.0	56	54
	achlorophenol	100	130	ug/kg ug/kg	7.0 26	55 50	54
Pher	nol	110	110	ug/kg ug/kg	0	50	54
Pyre	ene	56	59	ug/kg ug/kg	5.2	55	55
p-Ch	loro-m-cresol	120	110	ug/kg	9.1	56 60	54 54
DATOU NO. 70/50				-6, 4,6	7	50	54
BATCH NO: 72450					SAM	PLE NO: H4464	¥24
OSVICS ICI	- Semi-volatile Extractables	i 0-11					
	4-Trichlorobenzene						
	Dichlorobenzene	2,600	2,300	ug/kg	12.2	79	70
	Dinitrotoluene	2,600	2,600	ug/kg	0	79	79
	lorophenol	2,300	2,300	ug/kg	0	70	70
	trophenol	4,000	4,300	ug/kg	7.22	61	65
	aphthene	990	990	ug/kg	0	15	15
	trosodi-n-propylamine	4,300	3,600	ug/kg	17.7	130	109
	achlorophenol	1,600	1,600	ug/kg	0	48	48
Pheno	na raka katawana nga katamana na ma	2,000	1,600	ug/kg	22.2*	30	24
Pyrei		4,600	4,000	ug/kg	14.0	70	61
	loro-m-cresol	4,000	3,600	ug/kg	10.5	121	109
	outside of QC acceptance limi	5,000 ts.	4,600	ug/kg	8.33	76	70
BATCH NO: 72468					SAMP	LE NO: H4464	36
	oleum Hydrocarbons	5,000	6,000	mg/kg	18	*	*
* The	concentration of the analyte spike recovery.	prevented accurat	e determinati	ion of the		and the second	
	aprice recovery.						
BATCH NO: 72468					SAMPL	E NO: H44662	24
I685S Petro	leum Hydrocarbons	410	450	mg/kg	9.3	04.2	104.0
			*		7.3	96.2	106.8

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Section H Page 3

# MATRIX SPIKE AND MATRIX SPIKE DUPLICATE DATA

OVTCS2 8260A TCL Volatiles in Soil 1,1-Dichloroethene 39.9 37.6 ug/kg 6.07 100 Benzene 40.6 37.0 ug/kg 9.40 102 Chlorobenzene 38.7 34.9 ug/kg 10.24 97 Toluene 42.3 38.6 ug/kg 9.12 106 Trichloroethene 42.3 38.7 ug/kg 8.81 106  BATCH NO: 72482  SAMPLE NO: HA  OVTCWD Volatiles by 8260 - Subtitle D 1,1-Dichloroethene 37.6 37.8 ug/L 0.42 94 Benzene 39.2 38.9 ug/L 0.69 98 Chlorobenzene 39.5 39.7 ug/L 0.30 99 Toluene 38.1 38.4 ug/L 0.84 95 Toluene 38.1 38.4 ug/L 0.84 95 Trichloroethene 32.1 33.4 ug/L 3.91 80	
SAMPLE NO: HAS PET   RESULT   UNITS   RPD   RCVRY	
OVTCS2 8260A TCL Volatiles in Soil  1,1-Dichloroethene	
OVTCS2 8260A TCL Volatiles in Soil  1,1-Dichloroethene 39.9 37.6 ug/kg 6.07 100  Benzene 40.6 37.0 ug/kg 9.40 102  Chlorobenzene 38.7 34.9 ug/kg 10.24 97  Toluene 42.3 38.6 ug/kg 9.12 106  Trichloroethene 42.3 38.7 ug/kg 8.81 106  ATCH NO: 72482  SAMPLE NO: H4  OVTCWD Volatiles by 8260 - Subtitle D  1,1-Dichloroethene 37.6 37.8 ug/L 0.42 94  Benzene 39.2 38.9 ug/L 0.69 98  Chlorobenzene 39.5 39.7 ug/L 0.30 99  Toluene 38.1 38.4 ug/L 0.84 95  Toluene 32.1 33.4 ug/L 3.91 80  ATCH NO: 72591  SAMPLE NO: H4	
1,1-Dichloroethene 39.9 37.6 ug/kg 6.07 100 Benzene 40.6 37.0 ug/kg 9.40 102 Chlorobenzene 38.7 34.9 ug/kg 10.24 97 Toluene 42.3 38.6 ug/kg 9.12 106 Trichloroethene 42.3 38.7 ug/kg 8.81 106  ATCH NO: 72482  SAMPLE NO: H4  OVTCWD Volatiles by 8260 - Subtitle D 1,1-Dichloroethene 37.6 37.8 ug/L 0.42 94 Benzene 39.2 38.9 ug/L 0.69 98 Chlorobenzene 39.5 39.7 ug/L 0.30 99 Toluene 38.1 38.4 ug/L 0.84 95 Toluene 38.1 38.4 ug/L 0.84 95 Trichloroethene 32.1 33.4 ug/L 3.91 80  ATCH NO: 72591	446435
Benzene 40.6 37.0 ug/kg 9.40 102 Chlorobenzene 38.7 34.9 ug/kg 10.24 97 Toluene 42.3 38.6 ug/kg 9.12 106 Trichloroethene 42.3 38.7 ug/kg 8.81 106  ATCH NO: 72482  SAMPLE NO: H4  OVTCWD Volatiles by 8260 - Subtitle D 1,1-Dichloroethene 37.6 37.8 ug/L 0.42 94 Benzene 39.2 38.9 ug/L 0.69 98 Chlorobenzene 39.5 39.7 ug/L 0.30 99 Toluene 38.1 38.4 ug/L 0.84 95 Toluene 38.1 38.4 ug/L 0.84 95 Trichloroethene 32.1 33.4 ug/L 3.91 80  ATCH NO: 72591	
Benzene 40.6 37.0 ug/kg 9.40 102 Chlorobenzene 38.7 34.9 ug/kg 10.24 97 Toluene 42.3 38.6 ug/kg 9.12 106 Trichloroethene 42.3 38.7 ug/kg 8.81 106  ATCH NO: 72482  SAMPLE NO: H4  OVTCWD Volatiles by 8260 - Subtitle D 1,1-Dichloroethene 37.6 37.8 ug/L 0.42 94 Benzene 39.2 38.9 ug/L 0.69 98 Chlorobenzene 39.5 39.7 ug/L 0.30 99 Toluene 38.1 38.4 ug/L 0.84 95 Trichloroethene 32.1 33.4 ug/L 3.91 80  ATCH NO: 72591	
Chlorobenzene 38.7 34.9 ug/kg 10.24 97 Toluene 42.3 38.6 ug/kg 9.12 106 Trichloroethene 42.3 38.7 ug/kg 8.81 106  ATCH NO: 72482  SAMPLE NO: H4  OVTCWD Volatiles by 8260 - Subtitle D 1,1-Dichloroethene 37.6 37.8 ug/L 0.42 94 Benzene 39.2 38.9 ug/L 0.69 98 Chlorobenzene 39.5 39.7 ug/L 0.30 99 Toluene 38.1 38.4 ug/L 0.84 95 Trichloroethene 32.1 33.4 ug/L 3.91 80  ATCH NO: 72591	94
Toluene	92
Trichloroethene 42.3 38.7 ug/kg 8.81 106  ATCH NO: 72482  OVTCWD Volatiles by 8260 - Subtitle D  1,1-Dichloroethene 37.6 37.8 ug/L 0.42 94  Benzene 39.2 38.9 ug/L 0.69 98  Chlorobenzene 39.5 39.7 ug/L 0.30 99  Toluene 38.1 38.4 ug/L 0.84 95  Trichloroethene 32.1 33.4 ug/L 3.91 80  ATCH NO: 72591  SAMPLE NO: H4	87
ATCH NO: 72482  OVTCWD Volatiles by 8260 - Subtitle D  1,1-Dichloroethene	96
OVTCWD Volatiles by 8260 - Subtitle D 1,1-Dichloroethene 37.6 37.8 ug/L 0.42 94 Benzene 39.2 38.9 ug/L 0.69 98 Chlorobenzene 39.5 39.7 ug/L 0.30 99 Toluene 38.1 38.4 ug/L 0.84 95 Trichloroethene 32.1 33.4 ug/L 3.91 80  TCH NO: 72591  SAMPLE NO: H4	97
1,1-Dichloroethene 37.6 37.8 ug/L 0.42 94 Benzene 39.2 38.9 ug/L 0.69 98 Chlorobenzene 39.5 39.7 ug/L 0.30 99 Toluene 38.1 38.4 ug/L 0.84 95 Trichloroethene 32.1 33.4 ug/L 3.91 80  ATCH NO: 72591  SAMPLE NO: H4	445321
1,1-Dichloroethene 37.6 37.8 ug/L 0.42 94  Benzene 39.2 38.9 ug/L 0.69 98  Chlorobenzene 39.5 39.7 ug/L 0.30 99  Toluene 38.1 38.4 ug/L 0.84 95  Trichloroethene 32.1 33.4 ug/L 3.91 80  TCH NO: 72591	
Benzene 39.2 38.9 ug/L 0.69 98 Chlorobenzene 39.5 39.7 ug/L 0.30 99 Toluene 38.1 38.4 ug/L 0.84 95 Trichloroethene 32.1 33.4 ug/L 3.91 80  TCH NO: 72591  SAMPLE NO: H4	
Chlorobenzene 39.5 39.7 ug/L 0.30 99 Toluene 38.1 38.4 ug/L 0.84 95 Trichloroethene 32.1 33.4 ug/L 3.91 80  TCH NO: 72591  SAMPLE NO: H4	94
Toluene 38.1 38.4 ug/L 0.84 95 Trichloroethene 32.1 33.4 ug/L 3.91 80  TCH NO: 72591  SAMPLE NO: H4	97
Trichloroethene 32.1 33.4 ug/L 3.91 80  TCH NO: 72591  SAMPLE NO: H4	99
SAMPLE NO: H4	9
USVICS ICL - Semi-volatile Extractables in Soil	46363
4.7.4.	
1,2,4-Trichlorobenzene 690 790 ug/kg 13.5 104	120
7,4-bichtorobenzene 590 790 ug/kg 20.0 en	120
2,4-01n1trotoluene 820 1.100 ug/kg 20.2 13/	83
2-Chlorophenol 1,200 1,600 ug/kg 28.6	121
4-Nitrophenol 1,100 1,600 ug/kg 37.0 eg	121
Acenaphthene 820 1 000 15/65 10 0	83
N-Nitrosodi-n-propylamine 890 1 200 ug/kg 24 4	83
rentachtorophenol 160 165 ug/kg 3.00 13%	
Phenot 1,100 1,400 ug/kg 25 92	13*
Pyrene 380 580 UG/kg /1.4	106
p-chloro-m-cresol 1.300 1.600 um/km 24.4	89 121
* The recovery of the target was outside of QC acceptance limits.	121
CH NO: 72727 SAMPLE NO: H44	7241
OSVSKW Skinner List Semi-volatiles in Water	
1,2,4-Trichlorobenzene 68 07	
1,4-Dichlorobenzene 42 00	93
2.4-Dinitrotoluene	82
2-Chlorophenol 140 470 ug/L 28* 98	130
4-Nitrophenol	85
Acenaphthene 80 ug/L 5 80	40
Pentachlorophenol 400 110 ug/L 24* 86	110
Pentachlorophenol 180 280 ug/L 43* 90	140

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# REPORT OF LABORATORY ANALYSIS

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### MATRIX SPIKE AND MATRIX SPIKE DUPLICATE DATA

TEST CODE	DETERMINATION	MS RESULT	MSD RESULT	UNITS	RPD	MS PCT RCVRY	MSD PCT RCVRY
	Phenol Pyrene n-Nitrosodi-n-propylamine p-Chloro-m-cresol RPD is outside of AC acceptance lim	110 92 79 160	120 130 110 210	ug/L ug/L ug/L ug/L	9 34* 33* 27*	55 92 79 80	60 130 110 105

# Pace, Analytical

CHAIN-OF-CUSTODY RECORD Analytical Request  Pace Client No.  Pace Project Manager E. Smness  Pace Project No.	ACCEPTED BY / AFFILIATION DATE TIME  **ACCEPTED BY / AFFILIATION DATE TIME  **BOLTON BY / AFFILIATION DATE TIME  **BOLTON BY / AFFILIATION DATE TIME  **BOLTON BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / ACCEPTED BY / ACCEPTED BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / AFFILIATION BY / ACCEPTED BY / ACC	
Report To: Curt Jucs Bill To: Curt Jacs P.O. #/Billing Reference Project Name / No.	AMALYSES ANALYSE ANALYSE	
230	PACE NO. OF CONTRINERS  PACE NO. OF CONTRINERS  NUMBER	
ranckt 101 collage whad Park (913) 696	Sampler Signature O Date Sampled  The Law 3/4 ly 3/4 ly 3/4 ly 3/4 ly 3/4 ly 3/4 ly 3/4 ly 3/4 ly 3/4 ly 3/4 ly 3/4 ly 3/4 ly 3/4 ly 3/4 ly 3/4 ly 2/5 soil 3/	

SEE REVERSE SIDE FOR INSTRIICTIONS

OPIGINAI

# Pace Analytical

}		CHAIN- Analyti	CHAIN-OF-CUSTODY RECORD Analytical Request
CHANCK		Report To:	ent No.
ı	DIVE SUITE 230	Bill To:	Pace Project Manager E. Sommer
7000	70	P.O. # / Billing Reference	
Sampled By (PRINT)		Project Name / No.	*Requested Due Date: Newsof TR if
Roger		PRESERVATIVES ANALYSES / / A REQUEST	
Sampler Signature Date Sampled	2	CONTA	
ITEM SAMPLE DESCRIPTION	TIME MATRIX PACENO.	10PRE 1004 1004 1004	
1 HWPW-5863-55	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		$\leq$
2 HWPW-5803-519			arlone Odor
3 HWPW-5B03-824	0835 Soil 408		
4 HWPW-SB03-534	1 4eh   1 105   91 Kg		
\$	(B)		
- 5	Yen I		
the state of the s	and the state of t	er-c	
8			
COOLER NOS. BAILERS	SHIPMENT METHOD OUT/DATE RETURNED/DATE	ITEM RELINQUISHED BY / AFFILIATION	ATION DATE TIME
Additional Comments		elet St. Callynn	-5-501 79-5-
2 1		D. Chunkerl	& 36pm 11:4
7			

SEE REVERSE SIDE FOR INSTRUCTIONS

OPIGINAI

# Pace Analytical

CHAIN-OF-CUSTODY RECORD Analytical Request	Sill To: Curt Sing   Pace Client No.   Pace Project Manager E. Sommers   Pace Project Nanager E. Sommers   Pace Project Nanager E. Sommers   Project Name / No.   HUPW 44102069   Pace Project No.   Project Name / No.   HUPW 44102069   Pace Project No.   Project Name / No.   HUPW 44102069   Pace Project No.   Project Name / No.   HUPW 44102069   Pace Project No.   Pace Pr	ES AN CONTROL OF THE PARTY OF T	ST 2	7	HETURINED DATE TIME  TIME  ACCEPTED BY / AFFILIATION DATE TIME  3697 / OSS  PE(97 11/15)  THE TIME
	college Blod. e 230, Overland Park (413) 646-1300	Lawb  Date Sampled  3/5/47  MPLE DESCRIPTION  TIME MATRIX	1 Hupu - SBO4-Sa.5 1235 sil ( 2 Hupu - SBO4-基3391320 / C	1425 V C	OUTDATE COLUMN (S)

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

Terronext	PROJECT NAME Houston		SITELOCATII 4910 Liberty Lood	CHAIN	CHAIN OF CUSTODY RECORD	Y RECORI		# 500
			X - 2	S		S	1 - 0	SHIP TO:
303/914-1700	00 WORKS	PROJECT # * *	CT# * * * * * * * * * * * * * * * * * * *	00/51	////	31/	7V3	0000
SAMPLERS NAME & SIGNATURE		CONTA	CONTACT & PHONE	CHINA				ACE.
SAMPLE#	DATE TIME P.	AB SAMPLE	LE #OF			PLSNO PSZYY		LAB. CONTACT & PHONE
	00	19		0/0/		YES NO YES	1	*REMARKS:
HWPW.5807.52.5	16/97 (B:20)	5807	2	X	436	X	X	STRONK DONG
HW/W-5807.519	0h:89			X	437			704
HWPW.5B07.521	34:80			X	438			
HWPW-5507.522	08:20			X	439			
MWPW-5807-524	08:00	<del>}</del>	>		946			
HWPW-51808-54	09:25	SB08	2		124			
HWPW-5608-514	04:40		5		ehh			
HW/W . SBOB . SIB	54:45		N	X	Chh		30	Soci - ( 1/2) STORY
HWPW . 5608 . SEE 522 .	06:30		ħ	X	hhh			
HW/W-5808.	₩ 09:57 ₩	<b>→</b>	7	X	Shh	*	>	>
2								
(C)								
RELINOUISHED BY (Signature)	DATE & TIME REC	RECEIVED BY	RELEASED BY	DATE & TIME R	RECEIVED BY	*REMARKS:	IKS:	
REL INQUISHED BY (Signature)	DATER TIME REC	песемер в у	RELEASED BY	DATE & TIME B	EXECUTE BY			
RELINQUISHED BY (Signature)	DATE & TIME REC	RECEIVED AT LAB. BY	METHOD OF SHIPMENT	┥.		2		
40107								

Pace Analytica

Tel: 281-488-1810 Fax: 281-488-4661

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-A1-SSO

SAMPLE NO: H449055

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1615

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	8	< 2660	ug/kg
		2,4-Dinitrotoluene	8	< 2660	ug/kg
		2,6-Dinitrotoluene	8	< 2660	ug/kg
		2-Chloronaphthalene	8	< 2660	ug/kg
		2-Methylnaphthalene	8	< 2660	ug/kg
		4,6-Dinitro-o-cresol	8	< 2660	ug/kg
		4-Nitrophenol	8	< 12800	ug/kg
		Acenaphthene	8	< 12800	ug/kg
		Acenaphthylene	8	< 2660	ug/kg
		Anthracene	8	< 2660	ug/kg
		Benzo(a)anthracene	8	< 2660	ug/kg
		Benzo(a)pyrene	8	< 2660	ug/kg
		Chrysene	8	< 2660	ug/kg
		Di-n-butyl phthalate	8	< 2660	ug/kg
		Dibenzofuran	8	< 2660	ug/kg
		Fluoranthene	8	< 2660	ug/kg
		Fluorene	. 8	< 2660	ug/kg
		N-Nitrosodiphenylamine	8		ug/kg
		Naphthalene	8		ug/kg
		Nitrobenzene	8		ug/kg
		Pentachlorophenol	8		ug/kg
		Phenanthrene	8		ug/kg
	I	Phenol	. 8	< 2660	ug/kg
	1	Pyrene	8		ug/kg
	I	pis(2-Chloroethoxy)methane	8		ug/kg
	i	pis(2-Ethylhexyl)phthalate	8	< 2660	ug/kg
			8	< 2660	ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans

laboratory. See the enclosed report.

# Pace Analytical

Tel: 281-488-1810 Fax: 281-488-4661

April 24, 1997 Report No.: 00060793 Section A Page 2

< 2660 ug/kg

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-A2-SSO SAMPLE NO: H449056

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758 PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1600

DATE RECEIVED: 11-APR-97 PROJECT MANAGER: Elessa Sommers

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
-					
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	8	< 2660	ug/kg
		2,4-Dimethylphenol	8	< 2660	ug/kg
		2,4-Dinitrotoluene	8	< 2660	ug/kg
		2,6-Dinitrotoluene	8	< 2660	ug/kg
		2-Chloronaphthalene	8	< 2660	ug/kg
		2-Methylnaphthalene	8	< 2660	ug/kg
		4,6-Dinitro-o-cresol	8	< 12800	ug/kg
		4-Nitrophenol	8	< 12800	ug/kg
		Acenaphthene	8	< 2660	ug/kg
		Acenaphthylene	8	< 2660	ug/kg
		Anthracene	8	< 2660	ug/kg
		Benzo(a)anthracene	8	< 2660	ug/kg
		Benzo(a)pyrene	8	< 2660	ug/kg
		Chrysene	8	< 2660	ug/kg
		Di-n-butyl phthalate	8	< 2660	ug/kg
		Dibenzofuran	8	< 2660	ug/kg
		Fluoranthene	8	9280	ug/kg
		Fluorene	8	< 2660	ug/kg
		N-Nitrosodiphenylamine	8	< 2660	ug/kg
		Naphthalene	8	< 2660	ug/kg
		Nitrobenzene	8	< 2660	ug/kg
		Pentachlorophenol	8	< 12800	ug/kg
		Phenanthrene	8	6120	ug/kg
		Phenol	8	< 2660	ug/kg
		Pyrene	8	8160	ug/kg
		bis(2-Chloroethoxy)methane	8	< 2660	ug/kg
		bis(2-Ethylhexyl)phthalate	8	< 2660	ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans laboratory. See the enclosed report.

April 24, 1997 Report No.: 00060793 Section A Page 3

### LABORATORY ANALYSIS REPORT

 CLIENT NAME:
 TERRANEXT
 LIMS CLIENT:
 0717 0007

 ADDRESS:
 6200 ROTHWAY, STE 190
 PACE PROJECT:
 H44758

 HOUSTON, TX 77040 PACE CLIENT:
 620437

 ATTENTION:
 BILL GOLDSBY
 P.O. NO:
 03219

SAMPLE ID: HWPW-A3-SSO

SAMPLE NO: H449057

DATE SAMPLED: 08-APR-97 1600

DATE RECEIVED: 11-APR-97

SAMPLE MATRIX: SOIL PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
-	337735	1,2-Diphenylhydrazine	4	< 1330	um (lem
		2,4-Dimethylphenol	4	< 1330	ug/kg
		2,4-Dinitrotoluene	4	< 1330	ug/kg
		2,6-Dinitrotoluene	4	< 1330	ug/kg
		2-Chloronaphthalene	4	< 1330	ug/kg
		2-Methylnaphthalene	4	< 1330	ug/kg
		4,6-Dinitro-o-cresol	4	< 6400	ug/kg
		4-Nitrophenol	4	< 6400	ug/kg
		Acenaphthene	4	< 1330	ug/kg ug/kg
		Acenaphthylene	4	< 1330	ug/kg
		Anthracene	4	< 1330	ug/kg
		Benzo(a)anthracene	4	< 1330	ug/kg
		Benzo(a)pyrene	4	< 1330	ug/kg
		Chrysene	4	< 1330	ug/kg
		Di-n-butyl phthalate	4	< 1330	ug/kg
		Dibenzofuran	4	< 1330	ug/kg
		Fluoranthene	4	< 1330	ug/kg
		Fluorene	4	< 1330	ug/kg
		N-Nitrosodiphenylamine	4	< 1330	ug/kg
		Naphthalene	4	< 1330	ug/kg
		Nitrobenzene	4	< 1330	ug/kg
		Pentachlorophenol	4	< 6400	ug/kg
		Phenanthrene	4	< 1330	ug/kg ug/kg
		Phenol	4	< 1330	
		Pyrene	4	< 1330	ug/kg
		bis(2-Chloroethoxy)methane	4	< 1330	ug/kg
		bis(2-Ethylhexyl)phthalate	•		ug/kg
		and any continuate	4	< 1330	ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans laboratory. See the enclosed report.

April 24, 1997 Report No.: 00060793 Section A Page 4

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-A4-SSO

SAMPLE NO: H449058

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758 PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1545

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	20	< 6660	ug/kg
		2,4-Dinitrotoluene	20	< 6660	ug/kg
		2,6-Dinitrotoluene	20	< 6660	ug/kg
		2-Chloronaphthalene	20	< 6660	ug/kg
		2-Methylnaphthalene	20	< 6660	ug/kg
		4,6-Dinitro-o-cresol	20	< 6660	ug/kg
		4-Nitrophenol	20	< 32000	ug/kg
		Acenaphthene	20	< 32000	ug/kg
		Acenaphthylene	20	< 6660	ug/kg
		Anthracene	20	< 6660	ug/kg
		Benzo(a)anthracene	20	< 6660	ug/kg
			20	< 6660	ug/kg
		Benzo(a)pyrene	20	< 6660	ug/kg
		Chrysene	20	< 6660	ug/kg
		Di-n-butyl phthalate	20	< 6660	ug/kg
		Dibenzofuran	20	< 6660	ug/kg
		Fluoranthene	20	< 6660	ug/kg
		Fluorene	20	< 6660	ug/kg
		N-Nitrosodiphenylamine	20	< 6660	ug/kg
		Naphthalene	20	< 6660	ug/kg
		Nitrobenzene	20	< 6660	ug/kg
		Pentachlorophenol	20	< 32000	ug/kg
		Phenanthrene	20	< 6660	ug/kg
		Phenol	20	< 6660	ug/kg
		Pyrene	20	< 6660	ug/kg
		bis(2-Chloroethoxy)methane	20	< 6660	ug/kg
		bis(2-Ethylhexyl)phthalate	20	< 6660	
			20	1 0000	ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans

laboratory. See the enclosed report.

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

.

SAMPLE ID: HWPW-A5-SSO SAMPLE NO: H449059

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007
PACE PROJECT: H44758
PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1430

DATE RECEIVED: 11-APR-97
PROJECT MANAGER: Elessa Sommers

2.00	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
					••••••
3	001/700				
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 333	ug/kg
		2,4-Dimethylphenol	1	< 333	ug/kg
		2,4-Dinitrotoluene	1	< 333	ug/kg
		2,6-Dinitrotoluene	1	< 333	ug/kg
		2-Chloronaphthalene	1	< 333	ug/kg
		2-Methylnaphthalene	1	< 333	ug/kg
		4,6-Dinitro-o-cresol	1	< 1600	ug/kg
		4-Nitrophenol	1	< 1600	ug/kg
		Acenaphthene	1	< 333	ug/kg
		Acenaphthylene	. 1	< 333	ug/kg
		Anthracene	1	< 333	ug/kg
		Benzo(a)anthracene	1	< 333	
		Benzo(a)pyrene	1	< 333	ug/kg
		Chrysene	;	< 333	ug/kg
		Di-n-butyl phthalate	1	< 333	ug/kg
		Dibenzofuran	<u>'</u>		ug/kg
		Fluoranthene	1	< 333	ug/kg
		Fluorene	1		ug/kg
		N-Nitrosodiphenylamine	1		ug/kg
		Naphthalene	1		ug/kg
		Nitrobenzene	1		ug/kg
		Pentachlorophenol	1		ug/kg
		Phenanthrene	1		ug/kg
		Phenol	1		ug/kg
		Pyrene	1		ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
		bis(2-Ethylhexyl)phthalate	1		ug/kg
			1	< 333	ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans laboratory. See the enclosed report.

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-A6-SSO

SAMPLE NO: H449060

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1515

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

	TEST				
LN		DETERMINATION	DILUTION		
	********	A = 1 PM 1 VM	FACTOR	RESULT	UNITS
	3 OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	4	< 1330	ug/kg
		2,4-Dimethylphenol	4	< 1330	ug/kg
		2,4-Dinitrotoluene	4	< 1330	ug/kg
		2,6-Dinitrotoluene	4	< 1330	ug/kg
		2-Chloronaphthalene	4	< 1330	ug/kg
		2-Methylnaphthalene	4	< 1330	
		4,6-Dinitro-o-cresol	4	< 6400	ug/kg
		4-Nitrophenol	4	< 6400	ug/kg
		Acenaphthene	4	< 1330	ug/kg
		Acenaphthylene	4	< 1330	ug/kg
		Anthracene	4	< 1330	ug/kg
		Benzo(a)anthracene	4	< 1330	ug/kg
		Benzo(a)pyrene	4	< 1330	ug/kg
		Chrysene	4	< 1330	ug/kg
		Di-n-butyl phthalate	4	< 1330	ug/kg
		Dibenzofuran	4	< 1330	ug/kg
		Fluoranthene	4	< 1330	ug/kg
		Fluorene	4	< 1330	G. G
		N-Nitrosodiphenylamine	4	< 1330	ug/kg
		Naphthalene	4	< 1330	ug/kg
		Nitrobenzene	4	< 1330	ug/kg
		Pentachlorophenol	4	< 6400	ug/kg
		Phenanthrene	4		ug/kg
		Phenol	4		ug/kg
		Pyrene	4		ug/kg
		bis(2-Chloroethoxy)methane	4		ug/kg
		bis(2-Ethylhexyl)phthalate	4		ug/kg
			4	< 1330	ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans

laboratory. See the enclosed report.

# Pace Analytical

Tel: 281-488-1810 Fax: 281-488-4661

April 24, 1997 Report No.: 00060793 Section A Page 7

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-B1-SSO

SAMPLE NO: H449061

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1810

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
-	001/700				
3	OSVTCS	TCL - Semi-volatile Extractables in Soil	4		
		1,2-Diphenylhydrazine	4	< 1330	ug/kg
		2,4-Dimethylphenol	4	< 1330	ug/kg
		2,4-Dinitrotoluene	4	< 1330	ug/kg
		2,6-Dinitrotoluene	4	< 1330	ug/kg
		2-Chloronaphthalene	4	< 1330	ug/kg
		2-Methylnaphthalene	4	< 1330	ug/kg
		4,6-Dinitro-o-cresol	4	< 6400	ug/kg
		4-Nitrophenol	4	< 6400	ug/kg
		Acenaphthene	4	< 1330	ug/kg
		Acenaphthylene	4	< 1330	ug/kg
		Anthracene	4	< 1330	ug/kg
		Benzo(a)anthracene	4	< 1330	ug/kg
		Benzo(a)pyrene	4	< 1330	ug/kg
		Chrysene	4	1800	ug/kg
		Di-n-butyl phthalate	4	< 1330	ug/kg
		Dibenzofuran	4	< 1330	ug/kg
		Fluoranthene	4	2540	ug/kg
		Fluorene	4	< 1330	ug/kg
		N-Nitrosodiphenylamine	4	< 1330	ug/kg
		Naphthalene	4	< 1330	ug/kg
		Nitrobenzene	4	< 1330	ug/kg
		Pentachlorophenol	4	< 6400	ug/kg
		Phenanthrene	4	< 1330	ug/kg
		Phenol	4	< 1330	ug/kg
		Pyrene	4	2090	ug/kg
		bis(2-Chloroethoxy)methane	4	< 1330	ug/kg
		bis(2-Ethylhexyl)phthalate	4	< 1330	ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans laboratory. See the enclosed report.

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< 333

ug/kg

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040
ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-B2-SSO
SAMPLE NO: H449062

SAMPLE MATRIX: SOII

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1745

TEST
LN CODE DETERMINATION DILUTION
FACTOR RESULT UNITS

3 OSVTCS TCL - Semi-volatile Extractables in Soil
1,2-Diphenylhydrazine
2,4-Dimethylphonel

2,4-Dimethylphenol < 333 ug/kg 2,4-Dinitrotoluene < 333 ug/kg 2,6-Dinitrotoluene < 333 ug/kg 2-Chloronaphthalene < 333 ug/kg 2-Methylnaphthalene < 333 ug/kg 4,6-Dinitro-o-cresol < 333 ug/kg 4-Nitrophenol < 1600 ug/kg Acenaphthene ug/kg < 1600 Acenaphthylene < 333 ug/kg < 333 ug/kg Anthracene Benzo(a)anthracene < 333 ug/kg Benzo(a)pyrene < 333 ug/kg Chrysene < 333 ug/kg Di-n-butyl phthalate 382 ug/kg 1 Dibenzofuran < 333 ug/kg < 333 ug/kg Fluoranthene 1 Fluorene 501 ug/kg N-Nitrosodiphenylamine < 333 ug/kg 1 < 333 ug/kg Naphthalene < 333 ug/kg Nitrobenzene 1 Pentachlorophenol 1 < 333 ug/kg Phenanthrene 1 < 1600 ug/kg Phenol 1 < 333 ug/kg Pyrene 1 < 333 ug/kg bis(2-Chloroethoxy)methane 1 463 ug/kg bis(2-Ethylhexyl)phthalate < 333 ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans laboratory. See the enclosed report.

# Pace Analytical

Tel: 281-488-1810 Fax: 281-488-4661

April 24, 1997 Report No.: 00060793 Section A Page 9

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-B3-SSO

**SAMPLE NO: H449063** 

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758 PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1800

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	LIMITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 333	ug/kg
		2,4-Dimethylphenol	1	< 333	ug/kg
		2,4-Dinitrotoluene	1	< 333	ug/kg
		2,6-Dinitrotoluene	1	< 333	ug/kg
		2-Chloronaphthalene	1	< 333	ug/kg
		2-Methylnaphthalene	1	< 333	ug/kg
		4,6-Dinitro-o-cresol	1	< 1600	ug/kg
		4-Nitrophenol	1	< 1600	ug/kg
		Acenaphthene	1	< 333	ug/kg
		Acenaphthylene	1	< 333	ug/kg
		Anthracene	1	< 333	ug/kg
		Benzo(a)anthracene	1	< 333	ug/kg
		Benzo(a)pyrene	1	< 333	ug/kg
		Chrysene	1	< 333	ug/kg
		Di-n-butyl phthalate	1	< 333	ug/kg
		Dibenzofuran	1	< 333	ug/kg
		Fluoranthene	1	< 333	ug/kg
		Fluorene	1	< 333	ug/kg
		N-Nitrosodiphenylamine	1	< 333	ug/kg
		Naphthalene	1	< 333	ug/kg
		Nitrobenzene	1	< 333	ug/kg
		Pentachlorophenol	1	< 1600	ug/kg
		Phenanthrene	1		ug/kg
		Phenol	1		ug/kg
		Pyrene	1		ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
		bis(2-Ethylhexyl)phthalate	1		ug/kg
			,	· 222	49/ 14

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# LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-B4-SSO

SAMPLE NO: H449064

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758
PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1730

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	DECLUT	INITTO
			INCION	KESULI	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	. 777	
		2,4-Dimethylphenol	1	< 333	ug/kg
		2,4-Dinitrotoluene	1	< 333	ug/kg
		2,6-Dinitrotoluene	1	< 333	ug/kg
		2-Chloronaphthalene	1	< 333	ug/kg
		2-Methylnaphthalene	1	< 333	ug/kg
		4,6-Dinitro-o-cresol	1	< 333	ug/kg
		4-Nitrophenol	1	< 1600	ug/kg
		Acenaphthene	1	< 1600	ug/kg
		Acenaphthylene	1	< 333	ug/kg
		Anthracene	1	< 333	ug/kg
		Benzo(a)anthracene	1	< 333	ug/kg
		Benzo(a)pyrene	1	< 333	ug/kg
		Chrysene	1	< 333	ug/kg
		Di-n-butyl phthalate	1	< 333	ug/kg
		Dibenzofuran	1	< 333	ug/kg
		Fluoranthene	.1	< 333	ug/kg
		Fluorene	1	671	ug/kg
		N-Nitrosodiphenylamine	1	< 333	ug/kg
		Naphthalene	1	< 333	ug/kg
		Nitrobenzene	1	< 333	ug/kg
		Pentachlorophenol	1	< 333	ug/kg
		Phenanthrene	1	< 1600	ug/kg
		Phenol	1	< 333	ug/kg
		Pyrene	1	< 333	ug/kg
		• 1800cs	1		ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
		pis(2-Ethylhexyl)phthalate	1		ug/kg

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-B5-SSO

SAMPLE NO: H449065

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1415

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

TEST DILUTION  LN CODE DETERMINATION FACTOR RESULT U	INITS
3 OSVTCS TCL - Semi-volatile Extractables in Soil	
1,2-Diphenylhydrazine 4 < 1330 u	g/kg
2 /-Dimothy/lphonol	g/kg
2 /-Dinitrotalyone	g/kg
2 6-Dinitrotolyana	g/kg
2-Chi anananhthal ana	g/kg
2-Mathyl pophthal and	g/kg
/ 6-Dinitro-o-cross	g/kg
/-Nitraphone	g/kg
Acapanhthana	g/kg
Acanaphthylana	g/kg
Anthrocone	g/kg
Ponto(a)anthracers	g/kg
Ponto (a) mynome	g/kg
Chrysone	g/kg
Diametrical mathematics	g/kg
Dibografupon	g/kg
Fluoranthana	g/kg
Fluorena	g/kg
N-Nitrocodiphonylamine	g/kg
Manhthalana	g/kg
Witzphonzono	j/kg
Pentach   oronhanol	/kg
Phononthrone	//kg
Phone	/kg
Dyrana	ı/kg
his/2-Chloroothovy/mathons	/kg
his/2-Ethylhayyl \nhthalata	/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-B6-SSO SAMPLE NO: H449066

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007
PACE PROJECT: H44758
PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1445
DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

TEST  LN CODE DETERMINATION DILUTION	
LN CODE DETERMINATION FACTOR RESULT UNI	TS
3 OSVTCS TCL - Semi-volatile Extractables in Soil	
1.2-Diphenylhydrazine	
2.4-Dimethylphenol 4 < 1330 ug/	(g
2.4-Dinitrotoluene 4 < 1330 ug/	(g
2.6-Dinitrotaluene 4 < 1530 ug/	(g
2-Chloronaphthalene 4 < 1330 ug/	(g
2-Methylnaphthalene 4 < 1330 ug/	g
4.6-Dinitro-o-cresol 4 < 1330 ug/	g
4-Nitrophenol 4 < 6400 ug/	:g
Acenaphthene 4 < 6400 ug/l	g
Acenaphthylene 4 < 1330 ug/i	g
Anthracene 4 < 1330 ug/l	_
Benzo(a)anthracene 4 < 1330 ug/k	g
Benzo(a)pyrene 4 < 1330 ug/k	g
Chrysene 4 < 1330 ug/k	g
Di-n-butyl phthalate 4 < 1330 ug/k	g
Dibenzofuran 4 < 1330 ug/k	g
Fluoranthene 4 < 1330 ug/k	g
Fluorene 4 1370 ug/k	g
N-Nitrosodiphenylamine 4 < 1330 ug/k	9
Naphthalene 4 < 1330 ug/k	3
Nitrobenzene 4 < 1330 ug/k	3
Pentachlorophenol 4 < 1330 ug/k	3
Phenanthrene 4 < 6400 ug/k	3
Phenol 4 < 1330 ug/k	3
Pyrene 4 < 1330 ug/k	}
bis(2-Chloroethoxy)methane 4 1340 ug/kg	J
bis(2-Ethylhexyl)phthalate 4 < 1330 ug/kg	ļ
4 < 1330 ug/kg	J

April 24, 1997 Report No.: 00060793 Section A Page 13

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-C1-SSO

SAMPLE NO: H449067

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007
PACE PROJECT: H44758

PACE PROJECT: H44758
PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1145

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
_					
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	8	< 2660	ug/kg
		2,4-Dimethylphenol	8	< 2660	ug/kg
		2,4-Dinitrotoluene	8	< 2660	ug/kg
		2,6-Dinitrotoluene	8	< 2660	ug/kg
		2-Chloronaphthalene	8	< 2660	ug/kg
		2-Methylnaphthalene	8	< 2660	ug/kg
		4,6-Dinitro-o-cresol	8	< 12800	ug/kg
		4-Nitrophenol	8	< 12800	ug/kg
		Acenaphthene	8	< 2660	ug/kg
		Acenaphthylene	8	< 2660	ug/kg
		Anthracene	8	< 2660	ug/kg
		Benzo(a)anthracene	8	< 2660	ug/kg
		Benzo(a)pyrene	8	< 2660	ug/kg
		Chrysene	8	< 2660	ug/kg
		Di-n-butyl phthalate	8	< 2660	ug/kg
		Dibenzofuran	8	< 2660	ug/kg
		Fluoranthene	8	< 2660	-
		Fluorene	8	< 2660	ug/kg
		N-Nitrosodiphenylamine	8		ug/kg
		Naphthalene	8		ug/kg
		Nitrobenzene	8		ug/kg
		Pentachlorophenol	-		ug/kg
		Phenanthrene	8		ug/kg
		Phenol	8		ug/kg
		Pyrene	8		ug/kg
		bis(2-Chloroethoxy)methane	8		ug/kg
		bis(2-Ethylhexyl)phthalate	8		ug/kg
		DISCE ECHYTHENYT /PHILITATE	8	< 2660	ug/kg

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### LABORATORY ANALYSIS REPORT

THE STATE OF THE S			
CLIENT N ADDR	SS: 6200 ROTHWAY, STE 190 HOUSTON, TX 77040-	LIMS CLIENT: PACE PROJECT: PACE CLIENT: P.O. NO:	H44758 620437
SAMPLE SAMPLE SAMPLE MATI	NO: H449068	DATE SAMPLED: DATE RECEIVED: PROJECT MANAGER:	11-APR-97
TEST LN CODE	DETERMINATION	DILUTION FACTOR	RESULT UNITS
	TCL - Semi-volatile Extractables in Soil 1,2-Diphenylhydrazine 2,4-Dimethylphenol 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Chloronaphthalene 2-Methylnaphthalene 4,6-Dinitro-o-cresol 4-Nitrophenol Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Chrysene Di-n-butyl phthalate Dibenzofuran Fluoranthene Fluorene N-Nitrosodiphenylamine Naphthalene Witrobenzene Pentachlorophenol Phenanthrene Phenol Pyrene Dis(2-Chloroethoxy)methane Dis(2-Ethylhexyl)phthalate	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<ul> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>1600 ug/kg</li> <li>1600 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> <li>333 ug/kg</li> </ul>

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Report No.: 00060793
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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-C3-SSO

SAMPLE NO: H449069 SAMPLE MATRIX: SOIL PACE PROJECT: H44758
PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1655

DATE RECEIVED: 11-APR-97
PROJECT MANAGER: Elessa Sommers

**TEST** DILUTION LN CODE DETERMINATION **FACTOR** RESULT UNITS 3 OSVTCS TCL - Semi-volatile Extractables in Soil 1,2-Diphenylhydrazine 20 < 6660 ug/kg 2,4-Dimethylphenol 20 < 6660 ug/kg 2,4-Dinitrotoluene 20 < 6660 ug/kg 2,6-Dinitrotoluene 20 < 6660 ug/kg 2-Chloronaphthalene 20 < 6660 ug/kg 2-Methylnaphthalene 20 < 6660 ug/kg 4,6-Dinitro-o-cresol 20 < 32000 ug/kg 4-Nitrophenol 20 < 32000 ug/kg Acenaphthene 20 < 6660 ug/kg Acenaphthylene 20 < 6660 ug/kg Anthracene 20 < 6660 ug/kg Benzo(a)anthracene 20 < 6660 ug/kg Benzo(a)pyrene 20 < 6660 ug/kg Chrysene 20 10100 ug/kg Di-n-butyl phthalate 20 < 6660 ug/kg Dibenzofuran 20 < 6660 ug/kg Fluoranthene 20 35200 ug/kg Fluorene 20 < 6660 ug/kg N-Nitrosodiphenylamine 20 < 6660 ug/kg Naphthalene 20 < 6660 ug/kg Nitrobenzene 20 < 6660 ug/kg Pentachlorophenol 20 < 32000 ug/kg Phenanthrene 20 12800 ug/kg Phenol 20 < 6660 ug/kg Pyrene 20 20900 ug/kg bis(2-Chloroethoxy)methane 20 < 6660 ug/kg bis(2-Ethylhexyl)phthalate < 6660 ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040
ATTENTION: BILL GOLDSBY

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758

PACE CLIENT: 620437

P.O. NO: 03219

SAMPLE ID: HWPW-C4-SSO
SAMPLE NO: H449070
SAMPLE MATRIX: SOIL

DATE SAMPLED: 08-APR-97 1715
DATE RECEIVED: 11-APR-97
PROJECT MANAGER: Elessa Sommers

TEST DILUTION LN CODE DETERMINATION **FACTOR** RESULT UNITS 3 OSVTCS TCL - Semi-volatile Extractables in Soil 1,2-Diphenylhydrazine 1 < 333 ug/kg 2,4-Dimethylphenol < 333 ug/kg 2,4-Dinitrotoluene 1 < 333 ug/kg 2,6-Dinitrotoluene 1 < 333 ug/kg 2-Chloronaphthalene 1 < 333 ug/kg 2-Methylnaphthalene < 333 ug/kg 4,6-Dinitro-o-cresol 1 < 1600 ug/kg 4-Nitrophenol 1 < 1600 ug/kg Acenaphthene 1 < 333 ug/kg Acenaphthylene < 333 ug/kg Anthracene 1 < 333 ug/kg Benzo(a)anthracene < 333 ug/kg Benzo(a)pyrene 1 < 333 ug/kg Chrysene 1 < 333 ug/kg Di-n-butyl phthalate 1 < 333 ug/kg Dibenzofuran < 333 ug/kg Fluoranthene 1 < 333 ug/kg Fluorene 1 < 333 ug/kg N-Nitrosodiphenylamine 1 < 333 ug/kg Naphthalene 1 < 333 ug/kg Nitrobenzene < 333 ug/kg 1 Pentachlorophenol 1 < 1600 ug/kg Phenanthrene 1 < 333 ug/kg Phenol 1 < 333 ug/kg Pyrene 1 < 333 ug/kg bis(2-Chloroethoxy)methane 1 < 333 ug/kg bis(2-Ethylhexyl)phthalate < 333 ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-C5-SSO

SAMPLE NO: H449071

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007 PACE PROJECT: H44758

PACE CLIENT: 620437 P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1500

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST	DETERMINATION	ILUTION FACTOR	RESULT	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
,	034103	1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	1	< 333	ug/kg
		2,4-Dinitrotoluene	1	< 333	ug/kg
		2,6-Dinitrotoluene	1	< 333	ug/kg
		2-Chloronaphthalene	1	< 333	ug/kg
		2-Methylnaphthalene	1	< 333	ug/kg
		4,6-Dinitro-o-cresol	1	< 333	ug/kg
		4-Nitrophenol	1	< 1600	ug/kg
		Acenaphthene	1	< 1600	ug/kg
		Acenaphthylene	1	< 333	ug/kg
		Anthracene	1	< 333	ug/kg
		Benzo(a)anthracene	1	< 333	ug/kg
		Benzo(a)pyrene	1	< 333	ug/kg
		Chrysene	1	< 333	ug/kg
		Di-n-butyl phthalate	1	< 333	ug/kg
		Dibenzofuran	1	< 333	ug/kg
			1	< 333	ug/kg
		Fluoranthene	1	< 333	ug/kg
		Fluorene	1	< 333	ug/kg
		N-Nitrosodiphenylamine	1	< 333	ug/kg
		Naphthalene	1	< 333	ug/kg
		Nitrobenzene	1	< 333	ug/kg
		Pentachlorophenol	1	< 1600	ug/kg
		Phenanthrene	1	< 333	ug/kg
		Phenol	1	< 333	ug/kg
		Pyrene	1	< 333	ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
		bis(2-Ethylhexyl)phthalate	1		ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans

laboratory. See the enclosed report.

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# LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-C6-SSO SAMPLE NO: H449072

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758 PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1530 DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

	TEST				
LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	4	< 1330	
		2,4-Dinitrotoluene	4	< 1330	ug/kg
		2,6-Dinitrotoluene	4	< 1330	ug/kg
		2-Chloronaphthalene	4	< 1330	ug/kg
		2-Methylnaphthalene	4	< 1330	ug/kg
		4,6-Dinitro-o-cresol	4	< 1330	ug/kg
		4-Nitrophenol	4	< 6400	ug/kg
		Acenaphthene	4	< 6400	ug/kg
		Acenaphthylene	- · · · · · · · · · · · · · · · · · · ·	< 1330	ug/kg
		Anthracene	4	< 1330	ug/kg
		Benzo(a)anthracene	4	< 1330	ug/kg
		Benzo(a)pyrene	4	< 1330	ug/kg
		Chrysene	4	< 1330	ug/kg
		Di-n-butyl phthalate	4	< 1330	ug/kg
		Dibenzofuran	4	< 1330	ug/kg
		Fluoranthene	4	< 1330	ug/kg
		Fluorene	4	< 1330	ug/kg
		N-Nitrosodiphenylamine	4	< 1330	ug/kg
		Naphthalene	4	< 1330	ug/kg
		Nitrobenzene	4	< 1330	ug/kg
		Pentachlorophenol	4		ug/kg
		Phenanthrene	4	< 6400	ug/kg
		Phenol	4	< 1330	ug/kg
		Pyrene	4		ug/kg
		bis(2-Chloroethoxy)methane	4		ug/kg
		bis(2-Ethylhexyl)phthalate	4		ug/kg
		and any they to pricinatate	4		ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans

laboratory. See the enclosed report.

April 24, 1997 Report No.: 00060793 Section A Page 19

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-D1-SSO

SAMPLE MATRIX: SOIL

SAMPLE NO: H449073

HOUSTON, TX 77040-

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758 PACE CLIENT: 620437 P.O. NO: 03219

DATE SAMPLED: 08-APR-97 1130

DATE RECEIVED: 11-APR-97 PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
•	001100	1,2-Diphenylhydrazine	1	< 333	ua/ka
		2,4-Dimethylphenol	. 1	< 333	ug/kg ug/kg
		2,4-Dinitrotoluene	1	< 333	
		2,6-Dinitrotoluene	1	< 333	ug/kg
		2-Chloronaphthalene	1	< 333	ug/kg
		2-Methylnaphthalene	1	< 333	ug/kg
		4,6-Dinitro-o-cresol	1	< 1600	ug/kg ug/kg
		4-Nitrophenol	i	< 1600	ug/kg
		Acenaphthene	1	< 333	ug/kg
		Acenaphthylene	1	< 333	ug/kg
		Anthracene	1	456	ug/kg
		Benzo(a)anthracene	1	385	ug/kg
		Benzo(a)pyrene	1	472	ug/kg
		Chrysene	1	586	ug/kg
		Di-n-butyl phthalate	1	< 333	ug/kg
		Dibenzofuran	1	< 333	ug/kg
		Fluoranthene	1	1060	ug/kg
		Fluorene	1	< 333	ug/kg
		N-Nitrosodiphenylamine	1	< 333	ug/kg
		Naphthalene	1	< 333	ug/kg
		Nitrobenzene	1	< 333	ug/kg
		Pentachlorophenol	1	< 1600	ug/kg
		Phenanthrene	- 1	493	ug/kg
		Phenol	1	< 333	ug/kg
		Pyrene	1	832	ug/kg
		bis(2-Chloroethoxy)methane	1	< 333	ug/kg
		bis(2-Ethylhexyl)phthalate	1	< 333	ug/kg

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PROJECT MANAGER: Elessa Sommers

1

< 333 ug/kg

< 333 ug/kg

### LABORATORY ANALYSIS REPORT

TEST DILUTION CODE LN DETERMINATION **FACTOR** RESULT UNITS 3 OSVTCS TCL - Semi-volatile Extractables in Soil 1,2-Diphenylhydrazine 1 < 333 ug/kg 2,4-Dimethylphenol 1 < 333 ug/kg 2,4-Dinitrotoluene 1 < 333 ug/kg 2,6-Dinitrotoluene 1 < 333 ug/kg 2-Chloronaphthalene 1 < 333 ug/kg 2-Methylnaphthalene < 333 ug/kg 4,6-Dinitro-o-cresol < 1600 ug/kg 4-Nitrophenol 1 < 1600 ug/kg Acenaphthene 1 < 333 ug/kg Acenaphthylene 1 < 333 ug/kg Anthracene < 333 ug/kg Benzo(a)anthracene 1 < 333 ug/kg Benzo(a)pyrene 1 < 333 ug/kg Chrysene 1 < 333 ug/kg Di-n-butyl phthalate < 333 ug/kg Dibenzofuran 1 < 333 ug/kg Fluoranthene 1 < 333 ug/kg Fluorene 1 < 333 ug/kg N-Nitrosodiphenylamine < 333 ug/kg 1 Naphthalene < 333 ug/kg Nitrobenzene < 333 ug/kg 1 Pentachlorophenol 1 < 1600 ug/kg Phenanthrene 1 < 333 ug/kg Phenol 1 < 333 ug/kg Pyrene < 333 ug/kg 1

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans laboratory. See the enclosed report.

bis(2-Chloroethoxy)methane

bis(2-Ethylhexyl)phthalate

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### LABORATORY ANALYSIS REPORT

 CLIENT NAME:
 TERRANEXT
 LIMS CLIENT:
 0717 0007

 ADDRESS:
 6200 ROTHWAY, STE 190
 PACE PROJECT:
 H44758

 HOUSTON, TX 77040 PACE CLIENT:
 620437

 ATTENTION:
 BILL GOLDSBY
 P.O. NO:
 03219

SAMPLE ID: HWPW-8G-SSO

SAMPLE NO: H449075

SAMPLE MATRIX: SOIL

DATE SAMPLED: 09-APR-97 0840

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

TEST DILUTION
LN CODE DETERMINATION SACTOR

LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	. 5	< 1670	um/lem
		2,4-Dimethylphenol	5	< 1670	ug/kg
		2,4-Dinitrotoluene	5	< 1670	ug/kg
		2,6-Dinitrotoluene	5	< 1670	ug/kg
		2-Chloronaphthalene	5	< 1670	ug/kg
		2-Methylnaphthalene	5		ug/kg
		4,6-Dinitro-o-cresol	5	< 1670 < 8000	ug/kg
		4-Nitrophenol	5		ug/kg
		Acenaphthene	5	< 8000 < 1670	ug/kg
		Acenaphthylene	5	< 1670	ug/kg
		Anthracene	. 5	2510	ug/kg
		Benzo(a)anthracene	5	2720	ug/kg
		Benzo(a)pyrene	5	1690	ug/kg ug/kg
		Chrysene	5	3600	ug/kg
		Di-n-butyl phthalate	5	< 1670	ug/kg ug/kg
		Dibenzofuran	5	< 1670	ug/kg
		Fluoranthene	5	11100	ug/kg
		Fluorene	5	< 1670	ug/kg
		N-Nitrosodiphenylamine	5	< 1670	ug/kg
		Naphthalene	5	< 1670	ug/kg
		Nitrobenzene	5	< 1670	ug/kg
		Pentachlorophenol	5	< 8000	ug/kg
		Phenanthrene	5	2630	ug/kg
		Phenol	5	< 1670	ug/kg
		Pyrene	5	8930	ug/kg ug/kg
		bis(2-Chloroethoxy)methane	5	< 1670	ug/kg
		bis(2-Ethylhexyl)phthalate	5	< 1670	•
			,	10/0	ug/kg

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< 1330 ug/kg

## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-7G-SSO

SAMPLE NO: H449076 SAMPLE MATRIX: SOIL

DATE SAMPLED: 09-APR-97 0900 DATE RECEIVED: 11-APR-97

P.O. NO: 03219

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758

PACE CLIENT: 620437

PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR RESULT UNITS	•••••
3 (	OSVTCS	TCL - Semi-volatile Extractables in Soil 1,2-Diphenylhydrazine 2,4-Dimethylphenol 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Chloronaphthalene 2-Methylnaphthalene 4,6-Dinitro-o-cresol 4-Nitrophenol	4 < 1330 ug/kg 4 < 1330 ug/kg 4 < 1330 ug/kg 4 < 1330 ug/kg 4 < 1330 ug/kg 4 < 1330 ug/kg 4 < 1330 ug/kg 4 < 6400 ug/kg 4 < 6400 ug/kg 4 < 6400 ug/kg	

2. Washington asked a large	,	. 1550	49/ 49
2-Methylnaphthalene	4	< 1330	ug/kg
4,6-Dinitro-o-cresol	4	< 6400	ug/kg
4-Nitrophenol	4	< 6400	ug/kg
Acenaphthene	4	< 1330	ug/kg
Acenaphthylene	4	< 1330	ug/kg
Anthracene	4	4130	ug/kg
Benzo(a)anthracene	4	< 1330	ug/kg
Benzo(a)pyrene	4	< 1330	
Chrysene			ug/kg
Di-n-butyl phthalate	4	< 1330	ug/kg
Dibenzofuran	4	< 1330	ug/kg
	4	< 1330	ug/kg
Fluoranthene	4	< 1330	ug/kg
Fluorene	4	< 1330	ug/kg
N-Nitrosodiphenylamine	4	< 1330	ug/kg
Naphthalene	4	< 1330	ug/kg
Nitrobenzene	4	< 1330	ug/kg
Pentachlorophenol	4	< 6400	-
Phenanthrene			ug/kg
Phenol	4	< 1330	ug/kg
Pyrene	4	< 1330	ug/kg
1.6 (4.33)	4	< 1330	ug/kg
bis(2-Chloroethoxy)methane	4	< 1330	ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans

laboratory. See the enclosed report.

bis(2-Ethylhexyl)phthalate

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040
ATTENTION: BILL GOLDSBY

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758

PACE CLIENT: 620437

P.O. NO: 03219

SAMPLE ID: HWPW-9G-SSO

SAMPLE NO: H449077

SAMPLE MATRIX: SOIL

DATE SAMPLED: 09-APR-97 0915

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
7	001/700				
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 333	ug/kg
		2,4-Dimethylphenol	1	< 333	ug/kg
		2,4-Dinitrotoluene	1	< 333	ug/kg
		2,6-Dinitrotoluene	1	< 333	ug/kg
		2-Chloronaphthalene	1	< 333	ug/kg
		2-Methylnaphthalene	1	< 333	ug/kg
		4,6-Dinitro-o-cresol	1	< 1600	ug/kg
		4-Nitrophenol	1 .	< 1600	ug/kg
		Acenaphthene	1	< 333	ug/kg
		Acenaphthylene	1	< 333	ug/kg
		Anthracene	· 1	< 333	ug/kg
		Benzo(a)anthracene	1	< 333	ug/kg
		Benzo(a)pyrene	1	< 333	ug/kg
		Chrysene	1	< 333	ug/kg
		Di-n-butyl phthalate	1	< 333	ug/kg
		Dibenzofuran	1	< 333	ug/kg
		Fluoranthene	1	< 333	ug/kg
	6	Fluorene	\ 1	< 333	ug/kg
		N-Nitrosodiphenylamine	1	< 333	ug/kg
		Naphthalene	1	< 333	ug/kg
		Nitrobenzene	1	< 333	ug/kg
		Pentachlorophenol	1	< 1600	ug/kg
		Phenanthrene	1	< 333	ug/kg
		Phenol	1	< 333	ug/kg
		Pyrene	1	< 333	ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
		bis(2-Ethylhexyl)phthalate	1		ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-10G-SSO

SAMPLE NO: H449078

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007
PACE PROJECT: H44758

PACE CLIENT: 620437 P.O. NO: 03219

DATE SAMPLED: 09-APR-97 0930

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	1	< 333	ug/kg
		2,4-Dimethylphenol	1	< 333	ug/kg ug/kg
		2,4-Dinitrotoluene	1	< 333	ug/kg
		2,6-Dinitrotoluene	1	< 333	ug/kg
		2-Chloronaphthalene	1	< 333	ug/kg
		2-Methylnaphthalene	1	< 333	ug/kg
		4,6-Dinitro-o-cresol	1	< 1600	ug/kg
		4-Nitrophenol	1	< 1600	ug/kg
		Acenaphthene	1	< 333	ug/kg
		Acenaphthylene	1	< 333	ug/kg
-		Anthracene	1	< 333	ug/kg
		Benzo(a)anthracene	1	< 333	ug/kg
		Benzo(a)pyrene	1	< 333	ug/kg
		Chrysene	1	< 333	ug/kg
		Di-n-butyl phthalate	1	< 333	ug/kg
		Dibenzofuran	1	< 333	ug/kg
		Fluoranthene	1	< 333	ug/kg
		Fluorene	1	< 333	ug/kg
		N-Nitrosodiphenylamine	1	< 333	ug/kg
		Naphthalene	1	< 333	ug/kg
		Nitrobenzene	1	< 333	ug/kg
		Pentachlorophenol	1	< 1600	ug/kg
		Phenanthrene	1	< 333	ug/kg
		Phenol	1	< 333	ug/kg
		Pyrene	1	< 333	ug/kg
		bis(2-Chloroethoxy)methane	1		ug/kg
		bis(2-Ethylhexyl)phthalate	1		ug/kg
			•	, 333	ug/ kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-11G-SSO

SAMPLE NO: H449079

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 09-APR-97 0945

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	4	< 1330	ug/kg
		2,4-Dimethylphenol	4	< 1330	ug/kg
		2,4-Dinitrotoluene	4	< 1330	ug/kg
		2,6-Dinitrotoluene	4	< 1330	ug/kg
		2-Chloronaphthalene	4	< 1330	ug/kg
		2-Methylnaphthalene	4	< 1330	ug/kg
		4,6-Dinitro-o-cresol	4	< 6400	ug/kg
		4-Nitrophenol	4	< 6400	ug/kg
		Acenaphthene	4	< 1330	ug/kg
		Acenaphthylene	4	< 1330	ug/kg
		Anthracene	4	< 1330	ug/kg
		Benzo(a)anthracene	4	< 1330	ug/kg
		Benzo(a)pyrene	4	< 1330	ug/kg
		Chrysene	4	< 1330	ug/kg
		Di-n-butyl phthalate	4	< 1330	ug/kg
		Dibenzofuran	4	< 1330	ug/kg
		Fluoranthene	4	< 1330	ug/kg
		Fluorene	4	< 1330	ug/kg
		N-Nitrosodiphenylamine	4	< 1330	ug/kg
		Naphthalene	4	< 1330	ug/kg
		Nitrobenzene	4	< 1330	ug/kg
		Pentachlorophenol	4	< 6400	ug/kg
		Phenanthrene	4	< 1330	ug/kg
		Phenol	4	< 1330	ug/kg
		Pyrene	4	1510	ug/kg
		bis(2-Chloroethoxy)methane	4	< 1330	ug/kg
		bis(2-Ethylhexyl)phthalate	4		ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
ADDRESS: 6200 ROTHWAY, STE 190
HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

ATTENTION. BILL GOLDSBI

SAMPLE ID: HWPW-7F-SSO SAMPLE NO: H449080 SAMPLE MATRIX: SOIL LIMS CLIENT: 0717 0007
PACE PROJECT: H44758
PACE CLIENT: 620437
P.O. NO: 03219

DATE SAMPLED: 09-APR-97 1000 DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

	TEST				
LN	CODE	DETERMINATION	DILUTION		
		DETERMINATION	FACTOR	RESULT	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	20		2000000
		2,4-Dimethylphenol	20	< 6660	ug/kg
		2,4-Dinitrotoluene	20	< 6660	ug/kg
		2,6-Dinitrotoluene	20	< 6660	ug/kg
		2-Chloronaphthalene	20	< 6660	ug/kg
		2-Methylnaphthalene	20	< 6660	ug/kg
		4,6-Dinitro-o-cresol	20	< 6660	ug/kg
		4-Nitrophenol	20	< 32000	ug/kg
		Acenaphthene	20	< 32000	ug/kg
		Acenaphthylene	20	< 6660	ug/kg
•		Anthracene	20	< 6660	ug/kg
		Benzo(a)anthracene	20	< 6660	ug/kg
		Benzo(a)pyrene	20	< 6660	ug/kg
		Chrysene	20	< 6660	ug/kg
		Di-n-butyl phthalate	20	< 6660	ug/kg
		Dibenzofuran	20	< 6660	ug/kg
		Fluoranthene	20	< 6660	ug/kg
		Fluorene	20	< 6660	ug/kg
			20	< 6660	ug/kg
		N-Nitrosodiphenylamine	20		ug/kg
		Naphthal ene	20		ug/kg
		Nitrobenzene	20		ug/kg
		Pentachlorophenol	20		ug/kg
		Phenanthrene	20		ug/kg
		Phenol	20		ug/kg
		Pyrene	20		ug/kg ug/kg
		bis(2-Chloroethoxy)methane	20		
	1	bis(2-Ethylhexyl)phthalate	20		ug/kg
			20	< 6660	ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-8F-SSO

SAMPLE NO: H449081

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007 PACE PROJECT: H44758

PACE CLIENT: 620437
P.O. NO: 03219

DATE SAMPLED: 09-APR-97 1015

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

TEST LN CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
3 OSVTCS	TCL - Semi-volatile Extractables in Soil			
5 001100	1,2-Diphenylhydrazine	4	< 1330	ug/kg
	2,4-Dimethylphenol	4	< 1330	ug/kg
	2,4-Dinitrotoluene	4	< 1330	ug/kg
	2,6-Dinitrotoluene	. 4	< 1330	ug/kg
	2-Chloronaphthalene	4	< 1330	ug/kg
	2-Methylnaphthalene	4	< 1330	ug/kg
	4,6-Dinitro-o-cresol	4	< 6400	ug/kg
	4-Nitrophenol	4	< 6400	ug/kg
	Acenaphthene	4	< 1330	ug/kg
	Acenaphthylene	4	< 1330	ug/kg
	Anthracene	4	< 1330	ug/kg
	Benzo(a)anthracene	4	< 1330	ug/kg
	Benzo(a)pyrene	4	< 1330	ug/kg
	Chrysene	4	< 1330	ug/kg
	Di-n-butyl phthalate	4	< 1330	ug/kg
	Dibenzofuran	4	< 1330	ug/kg
	Fluoranthene	4	1460	ug/kg
	Fluorene	4	< 1330	ug/kg
	N-Nitrosodiphenylamine	4	< 1330	ug/kg
	Naphthalene	4	< 1330	ug/kg
	Nitrobenzene	4	< 1330	ug/kg
	Pentachlorophenol	4	< 6400	ug/kg
	Phenanthrene	4	< 1330	ug/kg
	Phenol	4	< 1330	ug/kg
	Pyrene	4		ug/kg
	bis(2-Chloroethoxy)methane	4		ug/kg
	bis(2-Ethylhexyl)phthalate	4	< 1330	ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040
ATTENTION: BILL GOLDSBY

LIMS CLIENT: 0717 0007

PACE PROJECT: H44758

PACE CLIENT: 620437

P.O. NO: 03219

SAMPLE ID: HWPW-9F-SSO

SAMPLE NO: H449082

SAMPLE MATRIX: SOIL

DATE SAMPLED: 09-APR-97 1030

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
_					
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	4	< 1330	ug/kg
		2,4-Dimethylphenol	4	< 1330	ug/kg
		2,4-Dinitrotoluene	4	< 1330	ug/kg
		2,6-Dinitrotoluene	4	< 1330	ug/kg
		2-Chloronaphthalene	4	< 1330	ug/kg
		2-Methylnaphthalene	4	< 1330	ug/kg
		4,6-Dinitro-o-cresol	4	< 6400	ug/kg
		4-Nitrophenol	4	< 6400	ug/kg
		Acenaphthene	4	< 1330	ug/kg
		Acenaphthylene	4	< 1330	ug/kg
		Anthracene	4	< 1330	ug/kg
		Benzo(a)anthracene	4	< 1330	ug/kg
		Benzo(a)pyrene	4	< 1330	ug/kg
		Chrysene	4	< 1330	ug/kg
		Di-n-butyl phthalate	4	< 1330	ug/kg
		Dibenzofuran	4	< 1330	ug/kg
		Fluoranthene	4	< 1330	ug/kg
		Fluorene	4	< 1330	ug/kg
		N-Nitrosodiphenylamine	4	< 1330	ug/kg
		Naphthalene	4	< 1330	ug/kg
		Nitrobenzene	4	< 1330	ug/kg
		Pentach loropheno l	4	< 6400	ug/kg
		Phenanthrene	4	< 1330	ug/kg
		Phenol	4	< 1330	ug/kg
		Pyrene	4	< 1330	
		bis(2-Chloroethoxy)methane	4		ug/kg
		bis(2-Ethylhexyl)phthalate	4		ug/kg
			4	< 1330	ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-10F-SSO

SAMPLE NO: H449083

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007 PACE PROJECT: H44758

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 09-APR-97 1045

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	100	< 33300	ug/kg
		2,4-Dimethylphenol	100	< 33300	ug/kg
		2,4-Dinitrotoluene	100	< 33300	ug/kg
		2,6-Dinitrotoluene	100	< 33300	ug/kg
		2-Chloronaphthalene	100	< 33300	ug/kg
		2-Methylnaphthalene	100	< 33300	ug/kg
		4,6-Dinitro-o-cresol	100	< 160000	ug/kg
		4-Nitrophenol	100	< 160000	ug/kg
		Acenaphthene	100	< 33300	ug/kg
		Acenaphthylene	100	< 33300	ug/kg
		Anthracene	100	< 33300	ug/kg
		Benzo(a)anthracene	100	44600	ug/kg
		Benzo(a)pyrene	100	< 33300	ug/kg
		Chrysene	100	57100	ug/kg
		Di-n-butyl phthalate	100	< 33300	ug/kg
		Dibenzofuran	100	< 33300	ug/kg
		Fluoranthene	100	237000	ug/kg
		Fluorene	100	< 33300	ug/kg
		N-Nitrosodiphenylamine	100	< 33300	ug/kg
		Naphthalene	100	< 33300	ug/kg
		Nitrobenzene	100	< 33300	ug/kg
		Pentachlorophenol	100	< 160000	ug/kg
		Phenanthrene	100	< 33300	ug/kg
		Phenol	100	< 33300	ug/kg
		Pyrene	100	204000	ug/kg
		bis(2-Chloroethoxy)methane	100	< 33300	ug/kg
		bis(2-Ethylhexyl)phthalate	100		ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans

laboratory. See the enclosed report.

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### LABORATORY ANALYSIS REPORT

ADDRESS:	TERRANEXT 6200 ROTHWAY, STE 190 HOUSTON, TX 77040- BILL GOLDSBY	LIMS CLIENT: PACE PROJECT: PACE CLIENT: P.O. NO:	H44758 620437
SAMPLE ID: SAMPLE NO: SAMPLE MATRIX:		DATE SAMPLED: DATE RECEIVED: PROJECT MANAGER:	

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	25	< 8330	ug/kg
		2,4-Dimethylphenol	25	< 8330	ug/kg
		2,4-Dinitrotoluene	25	< 8330	ug/kg
		2,6-Dinitrotoluene	25	< 8330	ug/kg
		2-Chloronaphthalene	25	< 8330	ug/kg
		2-Methylnaphthalene	25	< 8330	ug/kg
		4,6-Dinitro-o-cresol	25	< 40000	ug/kg
		4-Nitrophenol	25	< 40000	ug/kg
		Acenaphthene	25	< 8330	ug/kg
		Acenaphthylene	25	< 8330	ug/kg
		Anthracene	25	13000	ug/kg
		Benzo(a)anthracene	25	10800	ug/kg
		Benzo(a)pyrene	25	< 8330	ug/kg
		Chrysene	25	10800	ug/kg
		Di-n-butyl phthalate	25	< 8330	ug/kg
		Dibenzofuran	25	< 8330	ug/kg
		Fluoranthene	25	57800	ug/kg
		Fluorene	25	< 8330	ug/kg
		N-Nitrosodiphenylamine	25	< 8330	ug/kg
		Naphthalene	25	< 8330	ug/kg
		Nitrobenzene	25	< 8330	ug/kg
		Pentachlorophenol	25	< 40000	ug/kg
		Phenanthrene	25	60200	ug/kg
		Phenol	25	< 8330	ug/kg
		Pyrene	25	40000	ug/kg
		bis(2-Chloroethoxy)methane	25	< 8330	ug/kg
		bis(2-Ethylhexyl)phthalate	25	< 8330	ug/kg

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 6200 ROTHWAY, STE 190

HOUSTON, TX 77040-

ATTENTION: BILL GOLDSBY

SAMPLE ID: HWPW-AOC5E-SOO

SAMPLE NO: H449085

SAMPLE MATRIX: SOIL

LIMS CLIENT: 0717 0007 PACE PROJECT: H44758

PACE CLIENT: 620437

P.O. NO: 03219

DATE SAMPLED: 10-APR-97 1150

DATE RECEIVED: 11-APR-97

PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
	_				
. 1	OVTCS2	8260A TCL Volatiles in Soil			
		1,2-Dichloroethane	1	< 5	ug/kg
		Benzene	1	< 5	ug/kg
		Chlorobenzene	1	< 5	ug/kg
		Ethylbenzene	1	< 5	ug/kg
		Methylene chloride	1	< 5	ug/kg
		Toluene	1	< 5	ug/kg
-	001/200	Xylenes (total)	1	< 5	ug/kg
3	OSVTCS	TCL - Semi-volatile Extractables in Soil			
		1,2-Diphenylhydrazine	40	< 13300	ug/kg
		2,4-Dimethylphenol	40	< 13300	ug/kg
		2,4-Dinitrotoluene	40		ug/kg
		2,6-Dinitrotoluene	40		ug/kg
		2-Chloronaphthalene	40		ug/kg
		2-Methylnaphthalene	40		ug/kg
		4,6-Dinitro-o-cresol	40	< 64000	ug/kg
		4-Nitrophenol	40	< 64000	ug/kg
		Acenaphthene	40	< 13300	ug/kg
		Acenaphthylene	40	< 13300	ug/kg
		Anthracene	40	< 13300	ug/kg
		Benzo(a)anthracene	40	21500	ug/kg
		Benzo(a)pyrene	40	17800	ug/kg
		Chrysene	40	34000	ug/kg
		Di-n-butyl phthalate	40	< 13300	ug/kg
		Dibenzofuran	40	< 13300	ug/kg
		Fluoranthene	40	50900	ug/kg
		Fluorene	40	< 13300	ug/kg
		N-Nitrosodiphenylamine	40	< 13300	ug/kg
		Naphthalene	40	< 13300	ug/kg
		Nitrobenzene	40	< 13300	ug/kg
		Pentachlorophenol	40		ug/kg
		Phenanthrene	40	< 13300	ug/kg
		Phenol	40		ug/kg
		Pyrene	40	58300	ug/kg
		bis(2-Chloroethoxy)methane	40	< 13300	ug/kg

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# REPORT OF LABORATORY ANALYSIS

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# LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

SAMPLE ID: HWPW-AOC5E-SOO

SAMPLE NO: H449085

TEST

LN CODE

DETERMINATION

DILUTION

RESULT UNITS

bis(2-Ethylhexyl)phthalate

< 13300 ug/kg

COMMENTS: The semi-volatiles analysis was performed by the Pace Analytical - New Orleans

laboratory. See the enclosed report.

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### SUPPLEMENTAL INFORMATION

		TEST	LCSR BLNK	DUP/MS MS/MSD		SAMPLE PREPAR	ATION		SAMPLE ANALY	SIS
L	.N	CODE		BATCH		DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYST INSTRUMENT
SA	MPLI	E ID:	HWPW-A1-S	SSO			-		SAMPLE NO	D: H449055
	3	OSVTCS	73646	73646	NA			19-8270В	19-APR-97 1225	TTT
SA	MPLE	ID:	HWPW-A2-S	so					SAMPLE NO	: H449056
	3	OSVTCS	73646	73646	NA			19-8270В	19-APR-97 1312	TTT
SA	MPLE	ID:	HWPW-A3-S	so					SAMPLE NO	: н449057
	3	OSVTCS	73646	73646	NA			19-8270в	19-APR-97 1358	TTT
SAI	MPLE	ID:	HWPW-A4-S	so					SAMPLE NO	: H449058
	3	OSVTCS	73646	73646	NA			19-8270в	19-APR-97 1444	TTT
SAI	MPLE	ID:	HWPW-A5-S	so					SAMPLE NO	: н449059
	3	OSVTCS	73646	73646	NA			19-8270в	20-APR-97 1928	гтт
SAN	4PLE	ID:	HWPW-A6-SS	80					SAMPLE NO	: н449060
	3	osvtcs	73646	73646	NA			19-8270в	19-APR-97 1617	TTT.
SAM	IPLE	ID:	HWPW-B1-SS	80					SAMPLE NO:	H449061
	3 (	OSVTCS	73646	73646	NA			19-8270в	19-APR-97 1704 1	тт
SAM	IPLE	ID: I	HWPW-B2-SS	60					SAMPLE NO:	H449062
	3 (	OSVTCS	73646	73646	NA			19-8270в	21-APR-97 1214 T	
SAM	PLE	ID: H	IWPW-B3-SS	0					SAMPLE NO:	H449063
	3 (	SVTCS	73646	73646	NA			19-8270в	21-APR-97 1300 T	
SAM	PLE	ID: H	IWPW-B4-SS	0					SAMPLE NO:	
	3 0	SVTCS	73646	73646	NA			19-8270R	20-APR-97 2014 T	
								52.00	== AFR 77 2014	11

# REPORT OF LABORATORY ANALYSIS

April 24, 1997 Report No.: 00060793 Section B Page 2

# SUPPLEMENTAL INFORMATION

	7507	LCSR	DUP/MS		- SAMPLE PREPA	RATION		SAMPLE ANALYSIS
LN	CODE		MS/MSD BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	
SAMPL	E ID:	HWPW-B5-S	so					SAMPLE NO: H449065
3	OSVTC	73646	73646	NA			19-8270в	19-APR-97 2009 TTT
SAMPLI	E ID:	HWPW-B6-S	so					SAMPLE NO: H449066
3	OSVTCS	73646	73646	NA			19-8270в	19-APR-97 2055 TTT
SAMPLE	ID:	HWPW-C1-S	so					SAMPLE NO: H449067
3	OSVTCS	73646	73646	NA			19-8270в	19-APR-97 2141 TTT
SAMPLE	ID:	HWPW-C2-S	so					SAMPLE NO: H449068
3	OSVTCS	73646	73646	NA			19-8270B	20-APR-97 2101 TTT
SAMPLE	ID:	HWPW-C3-SS	30					SAMPLE NO: H449069
3	OSVTCS	73646	73646	NA			19-8270в	20-APR-97 1145 TTT
SAMPLE	ID:	HWPW-C4-SS	60					SAMPLE NO: H449070
3	OSVTCS	73646	73646	NA			19-8270в	20-APR-97 1231 TTT
SAMPLE	ID:	HWPW-C5-SS	0					SAMPLE NO: H449071
3 (	OSVTCS	73646	73646	NA			19-8270в	20-APR-97 1317 TTT
SAMPLE	ID:	HWPW-C6-SS	0					SAMPLE NO: H449072
3 (	OSVTCS	73646	73646	NA			19-8270В	20-APR-97 1404 TTT
SAMPLE	ID: }	IWPW-D1-SS	0					SAMPLE NO: H449073
3 (	SVTCS	73646	73646	NA			19-8270в	20-APR-97 1450 TTT
SAMPLE	ID: H	IWPW-D2-SS	0					SAMPLE NO: H449074
3 0	SVTCS	73646	73646	NA			19-8270В	20-APR-97 1536 TTT

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## SUPPLEMENTAL INFORMATION

	TEST	LCSR BLNK	DUP/MS MS/MSD		SAMPLE PREPA			SAMPLE ANALYSIS
LN	CODE			LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME ANALYST INSTRUMENT
SAMPL	E ID:	HWPW-8G-S	SSO					SAMPLE NO: H449075
3	OSVTC	s 73646	73646	NA			19-8270в	20-APR-97 1755 TTT
SAMPLI	E ID:	HWPW-7G-S	SO					SAMPLE NO: H449076
3	OSVTCS	73646	73646	NA			19-8270в	18-APR-97 1256 TTT
SAMPLE	ID:	HWPW-9G-S	so					SAMPLE NO: H449077
3	OSVTCS	73646	73646	NA			19-8270в	17-APR-97 1658 TTT
SAMPLE	ID:	HWPW-10G-	sso					SAMPLE NO: H449078
3	OSVTCS	73646	73646	NA			19-8270в	17-APR-97 1745 TTT
SAMPLE	ID:	HWPW-11G-	sso					SAMPLE NO: H449079
3	OSVTCS	73646	73646	NA			19-8270B	18-APR-97 1343 TTT
SAMPLE	ID:	HWPW-7F-S	SO					SAMPLE NO: H449080
3	OSVTCS	73646	73646	NA			19-8270в	18-APR-97 1429 TTT
		HWPW-8F-SS						SAMPLE NO: H449081
3	OSVTCS	73646	73646	NA			19-8270B	18-APR-97 1517 TTT
		HWPW-9F-SS						SAMPLE NO: H449082
3	OSVTCS	73646	73646	NA			19-8270В	18-APR-97 1604 TTT
		HWPW-10F-S						SAMPLE NO: H449083
,		73646		NA			19-8270B	17-APR-97 2140 TTT
		IWPW-11-SS						SAMPLE NO: H449084
3 (	SVTCS	73646	73646	NA			19-8270В	20-APR-97 1842 TTT

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**GCMSB** 

April 24, 1997 Report No.: 00060793 Section B Page 4

23-APR-96 1727 MH

18-APR-97 1651 TTT

## SUPPLEMENTAL INFORMATION

	TEST	LCSR BLNK	DUP/MS MS/MSD		· SAMPLE PREPAR	ATION		- SAMPLE ANALY	YSIS
LN	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYST INSTRUMENT
SAMPLE	ID: H	IWPW-AOC	5E-S00					SAMPLE N	NO: H449085

19-8260A

19-8270B

LR Method Literature Reference

73695

73646

72847 NA

73646 NA

1 OVTCS2

3 OSVTCS

19 EPA-Test Methods for Evaluating Solid Waste, 3rd ed, Nov. 1986 and updates

# Pace Analytical

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### SURROGATE STANDARD RECOVERY

LN	TEST CODE	SURROGATE COMPOUND	PERCENT RECOVERY	ACCEPTANCE LIMITS	REF LN
SAMPL	E ID: 1	HWPW-AOC5E-SOO		SAMPLE NO:	H449085
2	\$VOA2S	GC/MS Volatiles Surrogates (8260) 4-Bromofluorobenzene Dibromofluoromethane Toluene-d8	105 105 99	- - -	1

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# LABORATORY CONTROL SAMPLE RECOVERY

TEST CODE	DETERMINATION	LCS % Recovery	ACCEPTANCE LIMITS	•
BATCH NO: 7	3695		SAMPLE NO: H385748	-
OVTCS2	8260A TCL Volatiles in Soil			
	1,1-Dichloroethene	79	-	
	Benzene	100	-	
	Chlorobenzene	100	-	
	Toluene	100	-	
	Trichloroethene	105	-	

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### METHOD BLANK DATA

DETERMINATION	RESULT	UNIT
73695	SAM	PLE NO: H385749
8260A TCL Volatiles in Soil		
1,2-Dichloroethane	< 5	ug/kg
Benzene	< 5	ug/kg
Chlorobenzene	. < 5	ug/kg
Ethylbenzene	< 5	ug/kg
Methylene chloride	< 5	ug/kg
Toluene	< 5	ug/kg
Xylenes (total)	< 5	ug/kg
	3695  8260A TCL Volatiles in Soil 1,2-Dichloroethane Benzene Chlorobenzene Ethylbenzene Methylene chloride Toluene	3695  8260A TCL Volatiles in Soil 1,2-Dichloroethane

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# MATRIX SPIKE AND MATRIX SPIKE DUPLICATE DATA

TEST CODE	DETERMINATION	MS Result	MSD RESULT	UNITS	RPD	MS PCT RCVRY	MSD PCT RCVRY
BATCH NO: 7	2847				SAMI	PLE NO: H447	<b>7</b> 507
OVTCS2	8260A TCL Volatiles in Soil 1,1-Dichloroethene Benzene Chlorobenzene Toluene Trichloroethene	36.4 37.4 33.0 34.8 36.0	41.0 42.3 37.1 38.9 40.1	ug/kg ug/kg ug/kg ug/kg ug/kg	11.7 12.4 11.7 11.0 10.8	91 93 82 87 90	102 106 93 97 100

- 60,

SEE REVERSE SIDE FOR INSTRUCTIONS

# Pac. Analytical

CHAIN-OF-CUSTODY RECORD	Pace Client No. Pace Project Manager	*Reguested Due Date:		LEMARKS					ACCEPTED BY / AFFILIATION DATE TIME	10 00 1 (4) 1610	12 o 4/5/47
	Bill To: TEWOLLE X 7 Bill To: P.O. # / Billing Reference () 2.3   (1)		ESERVATIVES ANALYSES REQUEST ANALYSES A							0.	to the things
			PACE NO. OF CONTAINERS  PACE NO. OF CONTAINERS  PACE NO. OF CONTAINERS	*	3 (S		→ -> -> -> ->		NETURNED/DATE NUMBER	Section 1	
	0)		TIME MATRIX P	) 1100 0181	3.60	3	11146		SHIPMENT METHOD OUTDATE RETURN		Jan Da
	Address and Addres	Phone 7(2) / (0 - 1/2 3.0	Sampler Signature Date Sampled    The Control Sampled   Control Sampled   Control Sampled   Control Sampled   Control Sampled   Control Sample	· · · · · · · · · · · · · · · · · · ·	3 HUPUL B3 550	5 HIPPING B. W. 250	ì	. 8	GGGLEH NOS. BAILEHS	Additional Comments	161

SEE REVERSE SIDE FOR INSTRUCTIONS

# Pac Analytical

			CHAIN-OF-CUSTODY RECORD Analytical Request
Client in the contract of		Report To: William Copylete	
Address A 200 Path South # 190		Bill To: /ERCENT V	race Client No.
Crossen Tr 77080		i	Pace Project Manager
160. Y3 30	400-4227	3210	Pace Project No.
		PRESERVATIVES	*Requested Due Date:
Sampler Signature		Œ	
Date Sample	1.8-77 ////	SESERVE	
I EM NO. SAMPLE DESCRIPTION	TIME MATRIX PACE NO.	9ЧИР 6ОР 6ОИН 4О\	
1 100000 01 500	(1) (C) 1105 2411	×	REMARKS
2 /10/00 .20 550	30 - 54.91		
3 101810-03-550	100)		
4 MECHANICE SEC			
5 1191 6 10 1 1 1 2 2 2 2	282		
QSS_9 2 - (n d u) 11 9			
7 HIM . D. C. 550	1	HIGH LUBS 25 TO STATE STATES AND	
C) (2) (1) (1) (2) (3) (8)			
EGOLER Nos. BAILERS	SHIPMENT METHOD OUT/DATE RETURNED/DATE	ITEM RELINQUISHED BY / AFFILIATION	
		The same of the sa	
Additional Comments			100 - 4/11/2 140
26	×	7. FER EX	22 / A. 41.5/2 0922
2	La down		

SEE REVERSE SIDE FOR INSTRUCTIONS

# Pac. Analytical

CHAIN-OF-CUSTODY RECORD Analytical Request	Pace Client No. Pace Project Manager	Pace Project No.	Hequested Due Date:		REMARKS								ACCEPTED BY / AFFILIATION DATE TIME	Taken 1
	X	P.O. # / Billing Reference Project Name / No.		AV AV AV AV AV AV AV AV AV AV AV AV AV A	) ) )             								BY / AFFILIATION	
	061		SHANIAT	TIME MATRIX PACE NO		040	C No	02.8	16Ca 1 360	1000 1000	Jos Sior	100 C)	OUT/DATE RETURNED/DATE	
Client Contracts of	School Fothway #	Phone 131 440 92 50	Sampler Signature Date Sampled	ITEM SAMPLE DESCRIPTION	1 "artigle 065 - 350	2 Harry 11. 16-550	055-96 - 6 - 8 - 8	4 Hru Pub. 10 6 - 1550	5 /1111Pall 11 G - 2 - 0	9 355 - AL - MAIN 9	OSK - 18 - 1880 /	8 This leading	BAILERS	Additional Comments

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Pa. Analytical

			CHAIN-OF-CUSTODY RECORD Analytical Request
Address (270 CAll Lange) #190		Report To: FREKNEXT	
C II refrance		Billing	Pace Project Manager (2ch.p.e.p.s.
Phone Sampled By Delivity.		Project Name / No. Hruston Whop Piesser VING WORKS	
Campies Dy (Frink).			
Sampler Signature Date Sampled	3///	CONTA	
ITEM SAMPLE DESCRIPTION	TIME MATHIX PACENO.		
1 RUPUL OF SED	100 Nos 24.01		REMARKS
2 1000 00 11 - 550	1000 1 con		
r	Property of		S. P. A. Bakarilanum
4			
5 11 11 11 11 11 11 5 5 5	115 sol 085		
9	100 miles (		
8			
Marketter NGS. BAILERS	SHIPMENT METHOD  OUT/DATE RETURNED/DATE	ITEM RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION DATE TIME
Additional Comments		" Children III	100/1/1/1/2001
264	•	Ed the Mar the	1/2/10 1/2/10 0500
	Jan 3 5		

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< 10.0 ug/L

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

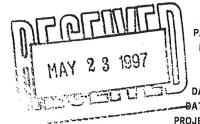
ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HP17-UTZ SAMPLE NO: H450536

SAMPLE NO: H450536 SAMPLE MATRIX: WATER



LIMS CLIENT: 0717 0007
PACE PROJECT: H45136
PACE CLIENT: 620437
P.O. NO: 03410

DATE SAMPLED: 08-MAY-97

DATE RECEIVED: 10-MAY-97

PROJECT MANAGER: Elessa Sommers

**TEST** DILUTION DETERMINATION **FACTOR** RESULT UNITS 1 OVTCW2 8260A TCL Volatiles in Water 1,2-Dichloroethane < 5 ug/L Benzene < 5 ug/L Chlorobenzene < 5 ug/L Ethylbenzene 1 < 5 ug/L Methylene chloride < 5 ug/L Toluene < 5 ug/L Xylenes (total) < 5 ug/L 3 OSVTCW TCL - Semi-volatile Extractables in Water 1,2-Diphenylhydrazine 1 < 10.0 ug/L 2,4-Dimethylphenol 1 < 10.0 ug/L 2,4-Dinitrotoluene 1 < 10.0 ug/L 2,6-Dinitrotoluene < 10.0 ug/L 2-Chloronaphthalene < 10.0 ug/L 2-Methylnaphthalene 1 < 10.0 ug/L 4,6-Dinitro-o-cresol < 25.0 ug/L 4-Nitrophenol < 25.0 ug/L Acenaphthene 32.9 ug/L Acenaphthylene < 10.0 ug/L Anthracene < 10.0 ug/L Benzo(a)anthracene < 10.0 Benzo(a)pyrene < 10.0 ug/L Chrysene < 10.0 ug/L Di-n-butylphthalate < 10.0 ug/L Dibenzofuran < 10.0 ug/L Fluoranthene 1 < 10.0 ug/L Fluorene 1 16.3 ug/L N-Nitrosodiphenylamine < 10.0 ug/L Naphthalene 1 < 10.0 ug/L Nitrobenzene 1 < 10.0 ug/L Pentachlorophenol < 25.0 ug/L Phenanthrene < 10.0 ug/L Phenol 1 18.4 ug/L Pyrene 1 < 10.0 ug/L bis(2-Chloroethoxy)methane

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# REPORT OF LABORATORY ANALYSIS

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HP17-UTZ SAMPLE NO: H450536

TEST DILUTION LN CODE DETERMINATION

bis(2-Ethylhexyl)phthalate

< 10.0 ug/L

RESULT UNITS

**FACTOR** 

COMMENTS: The organic analyses were performed by Pace Analytical - New Orleans laboratory.

May 19, 1997 Report No.: 00061433 Section A Page 3

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HP17-STZ

SAMPLE NO: H450537

SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007

PACE PROJECT: H45136

PACE CLIENT: 620437

P.O. NO: 03410

DATE SAMPLED: 08-MAY-97

DATE RECEIVED: 10-MAY-97

PROJECT MANAGER: Elessa Sommers

LN	TEST	DETERMINATION		DILUTION FACTOR	RESULT	UNITS
1	OVTCW2	8260A TCL Volatiles in Water				
·	0110112	1,2-Dichloroethane			_	
		Benzene		1	< 5	<b>.</b>
		Chlorobenzene		1	< 5	•
		Ethylbenzene		1	< 5	-0, -
		Methylene chloride		1	< 5	-3, -
		Toluene		1	< 5	•
		Xylenes (total)		1	< 5	•
3	OSVTCW	TCL - Semi-volatile Extractables in Water		1	< 5	ug/L
		1,2-Diphenylhydrazine			. 40	
		2,4-Dimethylphenol		1 1	< 10	ug/L
		2,4-Dinitrotoluene		1	< 10	
		2,6-Dinitrotoluene		1	< 10	•
		2-Chloronaphthalene		1		ug/L
		2-Methylnaphthalene		1	< 10	ug/L
		4,6-Dinitro-o-cresol		1	< 25	-0, -
		4-Nitrophenol		1	< 25	-
		Acenaphthene		1	< 10	ug/L
		Acenaphthylene		1	< 10	<b>.</b>
		Anthracene		1	< 10	•
		Benzo(a)anthracene		1	< 10	ug/L
		Benzo(a)pyrene		1	< 10	ug/L
		Chrysene		1	< 10	ug/L
		Di-n-butylphthalate		1	14.2	ug/L
		Dibenzofuran		1		
		Fluoranthene		1		ug/L
		Fluorene		1		ug/L
		N-Nitrosodiphenylamine		1		ug/L
		Naphthalene		1		ug/L
		Nitrobenzene		1		ug/L
		Pentachlorophenol		1		ug/L
		Phenanthrene		1		ug/L
		Phenol		1		ug/L
		Pyrene		1		ug/L
		bis(2-Chloroethoxy)methane		1		ug/L
		,	267	1	< 10	ug/L

## REPORT OF LABORATORY ANALYSIS

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May 19, 1997 Report No.: 00061433 Section A Page 4

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HP17-STZ SAMPLE NO: H450537

TEST DILUTION LN CODE DETERMINATION **FACTOR** RESULT UNITS

bis(2-Ethylhexyl)phthalate

1 < 10 ug/L

COMMENTS: The organic analyses were performed by Pace Analytical - New Orleans laboratory.

May 19, 1997 Report No.: 00061433 Section A Page 5

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210
ATTENTION: CURTIS L. JONES, CHMM

LIMS CLIENT: 0717 0007

PACE PROJECT: H45136

PACE CLIENT: 620437

P.O. NO: 03410

SAMPLE ID: HP18-UTZ
SAMPLE NO: H450538

SAMPLE MATRIX: WATER

DATE SAMPLED: 08-MAY-97
DATE RECEIVED: 10-MAY-97
PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCW2	8260A TCL Volatiles in Water			
		1,2-Dichloroethane	4	. 5.00	
		Benzene	1	< 5.00	
		Chlorobenzene	1	< 5.00	ug/L
		Ethylbenzene	1	< 5.00	ug/L
		Methylene chloride	1	< 5.00 < 5.00	ug/L
		Toluene	1		ug/L
		Xylenes (total)	1		ug/L ug/L
3	OSVTCW	TCL - Semi-volatile Extractables in Water	'	· 3.00	ug/L
		1,2-Diphenylhydrazine	1	< 10	ug/L
		2,4-Dimethylphenol	· 1		ug/L
		2,4-Dinitrotoluene	. 1		ug/L
		2,6-Dinitrotoluene	1		ug/L
		2-Chloronaphthalene	1		ug/L
		2-Methylnaphthalene	1		ug/L
		4,6-Dinitro-o-cresol	<u>i</u>		ug/L
		4-Nitrophenol	1		ug/L
		Acenaphthene	5		ug/L
		Acenaphthylene	1		ug/L
		Anthracene	1		ug/L
		Benzo(a)anthracene	1		ug/L
		Benzo(a)pyrene	. 1		ug/L
		Chrysene	1		ug/L
		Di-n-butylphthalate	1		ug/L
		Dibenzofuran	5		ug/L
		Fluoranthene	1		ug/L
		Fluorene	5		ug/L
		N-Nitrosodiphenylamine	1		1g/L
		Naphthalene	5		19/L
		Nitrobenzene	1		ıg/L
		Pentachlorophenol	1		19/L
		Phenanthrene	1		ig/L
		Phenol	· 1		ıg/L
		Pyrene	1		ıg/L
		bis(2-Chloroethoxy)methane	1		ıg/L
		ማ ድ	m ·		J

## REPORT OF LABORATORY ANALYSIS

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HP18-UTZ SAMPLE NO: H450538

LN	TEST	DETERMINATION	DILUTION FACTOR RESI	JLT	UNITS
	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 9	14	ug/L mg/L mg/L

COMMENTS: The organic analyses were performed by Pace Analytical - New Orleans laboratory.

May 19, 1997
Report No.: 00061433
Section A Page 7

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210
ATTENTION: CURTIS L. JONES, CHMM

LIMS CLIENT: 0717 0007

PACE PROJECT: H45136

PACE CLIENT: 620437

P.O. NO: 03410

SAMPLE ID: HP18-STZ
SAMPLE NO: H450539

SAMPLE MATRIX: WATER

DATE SAMPLED: 08-MAY-97
DATE RECEIVED: 10-MAY-97
PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCW2	8260A TCL Volatiles in Water			
		1,2-Dichloroethane	1	< 5	ug/L
		Benzene	1	< 5	ug/L
		Chlorobenzene	1	< 5	ug/L
		Ethylbenzene	1	< 5	ug/L
		Methylene chloride	1	< 5	ug/L
		Toluene	1	< 5	ug/L
_		Xylenes (total)	1	< 5	ug/L
3	OSVTCW	TCL - Semi-volatile Extractables in Water			
		1,2-Diphenylhydrazine	1	< 11.1*	ug/L
		2,4-Dimethylphenol	1	< 11.1*	ug/L
		2,4-Dinitrotoluene	1	< 11.1*	ug/L
		2,6-Dinitrotoluene	<sub>~</sub> 1	< 11.1*	ug/L
		2-Chloronaphthalene	1	< 11.1*	ug/L
		2-Methylnaphthalene	1	63.7*	ug/L
		4,6-Dinitro-o-cresol	1	< 27.7*	ug/L
		4-Nitrophenol	1.	< 27.7*	ug/L
		Acenaphthene	5	185 *	ug/L
		Acenaphthylene	1	< 11.1*	ug/L
		Anthracene	1	< 11.1*	ug/L
		Benzo(a)anthracene	1	< 11.1*	ug/L
		Benzo(a)pyrene	1		ug/L
		Chrysene	1	< 11.1*	ug/L
		Di-n-butylphthalate	1	< 11.1*	ug/L
		Dibenzofuran	5	145 *	ug/L
		Fluoranthene	1	< 11.1*	ug/L
		Fluorene	5	126 *	ug/L
		N-Nitrosodiphenylamine	. 1	< 11.1*	ug/L
		Naphthalene Nitrobenzene	10	476 *	ug/L
			1		ug/L
		Pentachlorophenol Phenanthrene	1		ug/L
		Phenol	1		ug/L
		Pyrene	1		ug/L
		•	1		ug/L
		bis(2-Chloroethoxy)methane	1	< 11.1*	ug/L
		271			

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HP18-STZ SAMPLE NO: H450539

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
5 6	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 1 10	< 11.1* 881 16,070	ug/L mg/L mg/L
COM		* A reduced sample aliquot was extracted. The reporting limit is elevated accordingly.  The values for Acenaphthene, Dibenzofuran, Fluorene, and Naphthalene were based upon analysis at a dilution due to the high analyte concentration. The organic analyses were performed by Pace Analytical - New Orleans laborato	P.V.		

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HP19-UTZ

SAMPLE NO: H450540

SAMPLE MATRIX: WATER

PACE PROJECT: H45136 PACE CLIENT: 620437

LIMS CLIENT: 0717 0007

P.O. NO: 03410

DATE SAMPLED: 08-MAY-97

DATE RECEIVED: 10-MAY-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCW2	The second of th			
		1,2-Dichloroethane	1	< 5	ug/L
		Benzene	. 1	< 5	ug/L
		Chlorobenzene	1	< 5	ug/L
		Ethylbenzene	1	< 5	ug/L
		Methylene chloride	1	< 5	ug/L
		Toluene	1	< 5	ug/L
		Xylenes (total)	1	< 5	ug/L
3	OSVTCW	TCL - Semi-volatile Extractables in Water			
		1,2-Diphenylhydrazine	1	< 12.7*	ug/L
		2,4-Dimethylphenol	1	< 12.7*	ug/L
		2,4-Dinitrotoluene	1	< 12.7*	ug/L
		2,6-Dinitrotoluene	1	< 12.7*	•
		2-Chloronaphthalene	1	< 12.7*	ug/L
		2-Methylnaphthalene	1	< 12.7*	ug/L
		4,6-Dinitro-o-cresol	1	< 31.7*	ug/L
		4-Nitrophenol	1	< 31.7*	ug/L
		Acenaphthene	1	< 12.7*	ug/L
		Acenaphthylene	1		ug/L
		Anthracene	1		ug/L
		Benzo(a)anthracene	1	100000000000000000000000000000000000000	ug/L
		Benzo(a)pyrene	1		ug/L
		Chrysene	1		ug/L
		Di-n-butylphthalate	1		ug/L
		Dibenzofuran	1		ug/L
		Fluoranthene	1		ug/L
		Fluorene	1		ug/L
		N-Nitrosodiphenylamine	1		ug/L
		Naphthalene	1		ug/L
		Nitrobenzene	1		ug/L ug/L
		Pentachlorophenol	1		ug/L ug/L
		Phenanthrene	1		-
		Phenol	1		ug/L
		Pyrene	1		ug/L
		bis(2-Chloroethoxy)methane	1		ug/L
			1	< 12./*	ug/L

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## REPORT OF LABORATORY ANALYSIS

# Pace Analytical

Tel: 281-488-1810 Fax: 281-488-4661

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HP19-UTZ SAMPLE NO: H450540

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 1 20	13.6* 748 20,340	mg/L
COM	MENTS:	* A reduced sample aliquot was extracted. The reporting limit is elevated accordingly.  The organic analyses were performed by Pace Analytical - New Orleans laborato	rv.		

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HP20-UTZ SAMPLE NO: H450541

SAMPLE MATRIX: WATER

DATE SAMPLED: 09-MAY-97 DATE RECEIVED: 10-MAY-97 PROJECT MANAGER: Elessa Sommers

LIMS CLIENT: 0717 0007

PACE PROJECT: H45136

PACE CLIENT: 620437

P.O. NO: 03410

TEST DILUTION CODE LN DETERMINATION **FACTOR** RESULT UNITS 1 OVTCW2 8260A TCL Volatiles in Water 1,2-Dichloroethane < 5 ug/L Benzene < 5 ug/L Chlorobenzene 1 < 5 ug/L Ethylbenzene 1 < 5 ug/L Methylene chloride 1 < 5 ug/L Toluene 1 < 5 ug/L Xylenes (total) < 5 ug/L 3 OSVTCW TCL - Semi-volatile Extractables in Water 1,2-Diphenylhydrazine 1 < 10 ug/L 2,4-Dimethylphenol 1 < 10 ug/L 2,4-Dinitrotoluene < 10 ug/L 2,6-Dinitrotoluene 1 < 10 ug/L 2-Chloronaphthalene < 10 ug/L 2-Methylnaphthalene 1 < 10 ug/L 4,6-Dinitro-o-cresol < 25 ug/L 4-Nitrophenol < 25 ug/L Acenaphthene 1 < 10 ug/L Acenaphthylene < 10 ug/L 1 Anthracene < 10 ug/L Benzo(a)anthracene < 10 ug/L Benzo(a)pyrene < 10 ug/L Chrysene 1 < 10 Di-n-butylphthalate < 10 ug/L Dibenzofuran < 10 ug/L Fluoranthene < 10 ug/L Fluorene 1 < 10 ug/L N-Nitrosodiphenylamine 1 < 10 ug/L Naphthalene 1 < 10 ug/L Nitrobenzene < 10 ug/L Pentachlorophenol 1 < 25 ug/L Phenanthrene < 10 ug/L Phenol 1 < 10 ug/L Pyrene 1 < 10 ug/L bis(2-Chloroethoxy)methane < 10 ug/L 1

## REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc. 900 Gemini Avenue Houston, TX 77058

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HP20-UTZ SAMPLE NO: H450541

LN	TEST CODE	DETERMINATION	ILUTION FACTOR	RESULT	UNITS	
5 6	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 1 20	< 10 912 13,300	ug/L mg/L mg/L	
COM	MENTS:	The organic analyses were performed by Pace Analytical - New Orleans laborators	, ,	·	-	

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Report No.: 00061433
Section A Page 13

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HP20-STZ

SAMPLE NO: H450542

SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007

PACE PROJECT: H45136

PACE CLIENT: 620437

P.O. NO: 03410

DATE SAMPLED: 09-MAY-97

DATE RECEIVED: 10-MAY-97

PROJECT MANAGER: Elessa Sommers

.N	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCW2	8260A TCL Volatiles in Water	,		
		1,2-Dichloroethane	_	_	
		Benzene	* 1	< 5	ug/L
		Chlorobenzene	1	< 5	ug/L
		Ethylbenzene	1	< 5	ug/L
		Methylene chloride	1	< 5	ug/L
		Toluene	1	< 5	ug/L
		Xylenes (total)	1	< 5	ug/L
3	OSVTCW	TCL - Semi-volatile Extractables in Water	1	< 5	ug/L
		1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	1	< 10	ug/L
		2,4-Dinitrotoluene	1	< 10	ug/L
		2,6-Dinitrotoluene	1	< 10	ug/L
		2-Chloronaphthalene	1	< 10	ug/L
		2-Methylnaphthalene	1	< 10	ug/L
		4,6-Dinitro-o-cresol	1	< 10	ug/L
		4-Nitrophenol	1	< 25	ug/L
			1	< 25	ug/L
		Acenaphthene	1	< 10	ug/L
		Acenaphthylene	1	< 10	ug/L
		Anthracene	1		ug/L
		Benzo(a)anthracene	1		ug/L
		Benzo(a)pyrene	1		ug/L
		Chrysene	1		ug/L
		Di-n-butylphthalate	1		ug/L
		Dibenzofuran	1		ug/L
		Fluoranthene	1		ug/L
		Fluorene	1		ug/L
		N-Nitrosodiphenylamine	1		ug/L
		Naphthalene	1		•
		Nitrobenzene	1		ug/L
		Pentach loropheno l	* · · · · · · · · · · · · · · · · · · ·		ug/L
		Phenanthrene	1		ug/L
		Phenol	1		ug/L
		Pyrene	•		ug/L
		bis(2-Chloroethoxy)methane	1		ug/L ug/L

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# REPORT OF LABORATORY ANALYSIS

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HP20-STZ SAMPLE NO: H450542

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
5	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 2 4	< 10 1,310 2,676	
COM	MENTS:	The organic analyses were performed by Pace Analytical - New Orleans laborate	nrv.	2,0.0	mg/ L

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HP19-STZ

SAMPLE NO: H450543

SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007

PACE PROJECT: H45136

PACE CLIENT: 620437

P.O. NO: 03410

DATE SAMPLED: 09-MAY-97

DATE RECEIVED: 10-MAY-97

PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCW2	8260A TCL Volatiles in Water 1,2-Dichloroethane Benzene Chlorobenzene Ethylbenzene Methylene chloride Naphthalene Toluene Xylenes (total)	1 1 1 1 1 1	< 5 < 5 < 5 < 5 < 10 < 5 < 5	ug/L ug/L ug/L ug/L ug/L ug/L ug/L

COMMENTS: The analysis was performed by Pace Analytical - New Orleans laboratory.

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### LABORATORY ANALYSIS REPORT

	TERRANEXT 8101 COLLEGE BLVD., SUITE 230 OVERLAND PARK, KS 66210- CURTIS L. JONES, CHMM	LIMS CLIENT: PACE PROJECT: PACE CLIENT: P.O. NO:	H45136 620437
SAMPLE ID: SAMPLE NO: SAMPLE MATRIX:	H450544	DATE SAMPLED: DATE RECEIVED: PROJECT MANAGER:	10-MAY-97

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS	• • • • •
1	OVTCW2	9240A 701 Welenston 1				
	OVICWZ	8260A TCL Volatiles in Water 1,2-Dichloroethane				
		Benzene	1	< 5	ug/L	
		Chlorobenzene	1	< 5	ug/L	
		Ethylbenzene	· ,,	< 5	ug/L	
		Methylene chloride	1	< 5	ug/L	
		Toluene	1	< 5	ug/L	
		Xylenes (total)	1	< 5	ug/L	7.
3	OSVTCW		1	< 5	ug/L	
,	03410	TCL - Semi-volatile Extractables in Water 1,2-Diphenylhydrazine				
			1	< 11.1*	ug/L	
		2,4-Dimethylphenol 2,4-Dinitrotoluene		< 11.1*	ug/L	-
		2,6-Dinitrotoluene	1	< 11.1*	ug/L	
			1	< 11.1*	ug/L	
		2-Chloronaphthalene 2-Methylnaphthalene	1	< 11.1*	ug/L	
		4,6-Dinitro-o-cresol	1	< 11.1*	ug/L	
			1	< 27.7*	ug/L	
		4-Nitrophenol	1	< 27.7*	ug/L	
		Acenaphthele	1	< 11.1*	ug/L	
		Acenaphthylene Anthracene	1	< 11.1*	ug/L	
		Benzo(a)anthracene	1	< 11.1*	ug/L	
			1	< 11.1*	ug/L	
		Benzo(a)pyrene	1	< 11.1*	ug/L	
		Chrysene	1	< 11.1*	ug/L	
		Di-n-butylphthalate Dibenzofuran	1	< 11.1*	ug/L	
			1	< 11.1*	ug/L	
		Fluoranthene	1	< 11.1*	ug/L	
		Fluorene	1	< 11.1*	ug/L	
		N-Nitrosodiphenylamine	1		ug/L	
		Naphthalene Nitrobenzene	1	< 11.1*	ug/L	
			1	< 11.1*	ug/L	
		Pentachlorophenol Phenanthrene	1		ug/L	
		Phenanthrene Phenol	1		ug/L	
			1		ug/L	
		Pyrene	1		ug/L	
		bis(2-Chloroethoxy)methane	1		ug/L	<i>i</i> :

# REPORT OF LABORATORY ANALYSIS

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HP21-UTZ SAMPLE NO: H450544

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
_	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 1 5	< 11.1* 1,119 5,230	mg/L
COM	MENTS:	* A reduced sample aliquot was extracted. The reporting limit is elevated accordingly.  The organic analyses were performed by Pace Analytical - New Orleans laborate	ory.		

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HP21-STZ SAMPLE NO: H450545

SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007

PACE PROJECT: H45136 PACE CLIENT: 620437

P.O. NO: 03410

DATE SAMPLED: 09-MAY-97

DATE RECEIVED: 10-MAY-97 PROJECT MANAGER: Elessa Sommers

	7707				
LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1		8260A TCL Volatiles in Water 1,2-Dichloroethane Benzene Chlorobenzene Ethylbenzene Methylene chloride Toluene Xylenes (total)	1 1 1 1 1 1	< 5 6.72 < 5 64.3 < 5 < 5	ug/L ug/L

COMMENTS: The analysis was performed by Pace Analytical - New Orleans laboratory.

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Section A Page 19

### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HP21-STZ

COMMENTS: Continued on next page.

SAMPLE NO: H450555

SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007 PACE PROJECT: H45136

PACE PROJECT: H45136
PACE CLIENT: 620437

P.O. NO: 03410

DATE SAMPLED: 12-MAY-97

DATE RECEIVED: 12-MAY-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR R	ESULT	UNITS
		· · · · · ·			
-	SOSVTC	W TCL - Semi-volatile Extractables in Water			
-	03410	1,2-Diphenylhydrazine			
		• • • • • • • • • • • • • • • • • • • •	1	< 10	ug/L
		2,4-Dimethylphenol	1	< 10	ug/L
		2,4-Dinitrotoluene	1	< 10	ug/L
		2,6-Dinitrotoluene	. <b>1</b> "	< 10	ug/L
		2-Chloronaphthalene	1	< 10	ug/L
		2-Methylnaphthalene	5	118*	ug/L
		4,6-Dinitro-o-cresol	1	< 25	ug/L
		4-Nitrophenol	1	< 25	ug/L
		Acenaphthene	5	212*	ug/L
		Acenaphthylene	1	< 10	ug/L
		Anthracene	1	10.2	ug/L
		Benzo(a)anthracene	1	< 10	ug/L
		Benzo(a)pyrene	1	< 10	ug/L
		Chrysene	1	< 10	ug/L
		Di-n-butylphthalate	1	< 10	ug/L
		Dibenzofuran	1	25.9	ug/L
		Fluoranthene	1	< 10	ug/L
		Fluorene	1		ug/L
		N-Nitrosodiphenylamine	1	< 10	ug/L
		Naph tha lene		176*	ug/L
		Nitrobenzene	_		ug/L
		Pentachlorophenol			ug/L
		Phenanthrene			ug/L
		Phenol			ug/L
		Pyrene			ug/L
		bis(2-Chloroethoxy)methane			ug/L
		bis(2-Ethylhexyl)phthalate		< 10	
5	1590	Solids, Dissolved at 180C			
6	1610	Solids, Suspended at 103C			mg/L
		1 100000	, ,	,735	mg/L

# Pace Analytical

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HP21-STZ SAMPLE NO: H450555

TEST

CODE

LN

DETERMINATION

DILUTION

**FACTOR** 

RESULT UNITS

COMMENTS: \* The value for this analyte was based upon analysis at a dilution due to the high analyte concentration.

The organic analysis was performed by Pace Analytical - New Orleans laboratory.

May 19, 1997
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Section B Page 1

### SUPPLEMENTAL INFORMATION

	TEST	LCSR BLNK	DUP/MS MS/MSD		- SAMPLE PREP	ARATION	,"	SAMPLE ANAL	YSIS	
LN 	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METH	IOD DATE/TIME	ANALYST	INSTRUMEN
SAMP	LE ID:	HP17-UTZ						SAMPLE I	NO: H450	536
1	OVTCW2	2 0	0	NA			19-8260A	14-MAY-97 1513	P	
3	OSVTC	0	0	19-3510B			19-8270B			
SAMP	E ID:	HP17-STZ						SAMPLE N	Ю: Н4505	37
1	OVTCW2	2 0	0	NA			19-8260A	14-MAY-97 1541	Р	
3	OSVTCW	0	0	19-3510B			19-8270B			
AMPL	E ID:	HP18-UTZ						SAMPLE N	о: н4505	38
1	OVTCW2	. 0	0	NA			19-8260A	14-MAY-97 1609	р	
5	1590	74329	74329				02-160.1			TAW800
6	1610	74229	74229				02-160.2			TAW800
3	OSVTCW	0	, 0	19-3510B			19-8270В	15-MAY-97 1153	Р	
AMPL	E ID:	HP18-STZ						SAMPLE N	о: н4505	39
		0	0				19-8260A	14-MAY-97 1638	Р	
		74329					02-160.1	14-MAY-97 1755	CP	TAW800
	I610 OSVTCW	74229 0	74229 0	NA 19-3510B			02-160.2 19-8270B	12-MAY-97 1600 15-MAY-97 1232		TAW800
							19-02/08	13-MAT-97 1232	۲	
AMPL	E 10: 1	HP19-UTZ						SAMPLE N	D: H4505	40
	OVTCW2		0				19-8260A	14-MAY-97 1706	Р	
		74329					02-160.1	14-MAY-97 1755	CP	TAW800
	1610	74229	74229				02-160.2	12-MAY-97 1600	CP	TAW800
,3	OSVTCW	0	U	19-3510B			19-8270В	14-MAY-97 1812	Р	
AMPLI	E ID: H	IP20-UTZ						SAMPLE NO	): H45054	<b>¥1</b>
1	OVTCW2	0	0	NA			19-8260A	14-MAY-97 1803	Р	
	1590	74329	74329				02-160.1	14-MAY-97 1755		TAW800
	1610	74229	74229				02-160.2	12-MAY-97 1600		TAW800
3	OSVTCW	0	0	19-3510B			19-8270B	14-MAY-97 1852	Р	
MPLE	ID: H	IP20-STZ						SAMPLE NO	: H45054	-2
1	OVTCW2	0	0	NA			19-8260A	14-MAY-97 1831	P	
5	1590	74329	74329	NA			02-160.1	14-MAY-97 1755		TAW800
6	1610	74229	74229	NA			02-160.2	12-MAY-97 1600		TAW800

# **REPORT OF LABORATORY ANALYSIS**

# Pace Analytical

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May 19, 1997
Report No.: 00061433
Section B Page 2

### SUPPLEMENTAL INFORMATION

	TEST	LCSR BLNK	DUP/MS MS/MSD		SAMPLE PREP	ARATION		SAMPLE ANAL	YSIS	
LN	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
CAME	U.E. ID.	UD30 077		a						
SAMP	LE ID:	HP20-STZ			*			SAMPLE	NO: H4505	i42
3	OSVTC	M 0	0	19-3510B			10-82700	14-MAY-97 0931	- 7. 65. 1	
							17 02708	14-MAT-97 U931	Р	
SAMP	LE ID:	HP19-STZ						SAMPLE	NO: H4505	43
1	OVTCW	2 0	0	NA			40.00			
			·	NA			19-8260A	14-MAY-97 1859	Р	
SAMP	LE ID:	HP21-UTZ						SAMPLE	NO: H4505	<i></i> .
1	OVTCW2		•	***				57411 22 1	10: 11-505	7-7
	1590	? 0 74 <b>32</b> 9	74329	NA				15-MAY-97 1420		
	1610	74229	74229					14-MAY-97 1755		TAW800
	OSVTCW			NA 19-3510B			02-160.2	12-MAY-97 1600	CP	TAW800
-	034108		U	13-22108			19-8270B	15-MAY-97 1035	P	
SAMPL	E ID:	HP21-STZ						2000		
								SAMPLE N	IO: H45054	<b>5</b>
1	OVTCW2	0	0	NA			19-8260A	14-MAY-97 1956	D	
CAMPI							525071	14 MAI 27 1920	P	
SAMPL	E ID:	HP21-STZ						SAMPLE N	O: H45055	5
5	1590	74329	74329	NA						
	1610	74298	74298					14-MAY-97 1755		TAW800
	OSVTCW			19-3510B				14-MAY-97 1515		TAW800
			J	17 33 100			19-8270в	15-MAY-97 1311	P	
I R	Method	Litaratur	a Dofon							

## LR Method Literature Reference

O2 EPA-Methods for Chemical Analysis of Water & Wastes, 1984.

<sup>19</sup> EPA-Test Methods for Evaluating Solid Waste, 3rd ed, Nov. 1986 and updates

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Section D Page 1

LABORATORY CONTROL SAMPLE RECOVERY

TEST LCS % LCSD % ACCEPTANCE
CODE DETERMINATION RECOVERY RECOVERY LIMITS RPD

BATCH NO: 74329

SAMPLE NO: H386743

I590 Solids, Dissolved at 1800

100.5

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> Tel: 281-488-1810 Fax: 281-488-4661

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### METHOD BLANK DATA

TES1 CODE		RESUL	T	UNIT	
BATCH NO:	74229		SAMI	PLE NO:	H386581
1610	Solids, Suspended at 103C	<	4	mg/L	
BATCH NO:	74298		SAME	PLE NO:	H386694
1610	Solids, Suspended at 103C	< 4	•	mg/L	
BATCH NO:	74329		SAMP	LE NO:	H386744
1590	Solids, Dissolved at 180C	< 5		mg/L	

May 19, 1997
Report No.: 00061433
Section F Page 1

## DUPLICATE AND MATRIX SPIKE DATA

TES		DETERMINATION	ORIGINAL RESULT	DUPLICATE RESULT	UNITS	RANGE RPD	/	MS RESULT	r	MS % RCVRY
BATCH NO:	74229						SAMPLE	NO: H	1450465	
1610	Solids,	Suspended at 103C	< 4	< 4	mg/L	0.0				
BATCH NO:	74298						SAMPLE	NO: H	444981	
1610	Solids,	Suspended at 103C	9	9	mg/L	0.0				
BATCH NO:	74329						SAMPLE	NO: H	444981	
1590	Solids,	Dissolved at 1800	2,852	2,932	mg/L	2.8				

## Pace Analytical

Tel: 281-488-1810 Fax: 281-488-4661

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HWPW-MW-14

SAMPLE NO: H450662 SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007 PACE PROJECT: H45189 PACE CLIENT: 620437

P.O. NO: 03422

DATE SAMPLED: 14-MAY-97 0820

DATE RECEIVED: 14-MAY-97 PROJECT MANAGER: Elessa Sommers

1

1

1

1

1

1

1

1

1

1

1

1

TEST DILUTION DETERMINATION **FACTOR** RESULT UNITS 1 OVTCW2 8260A TCL Volatiles in Water 1,2-Dichloroethane < 5 ug/L Benzene 1 < 5 ug/L Chlorobenzene 1 < 5 ug/L Ethylbenzene ug/L Methylene chloride 1 < 5 ug/L Toluene < 5 ug/L Xylenes (total)

3 OSVTCW TCL - Semi-volatile Extractables in Water

1,2-Diphenylhydrazine

2,4-Dimethylphenol 2,4-Dinitrotoluene

2,6-Dinitrotoluene

2-Chloronaphthalene

2-Methylnaphthalene

4,6-Dinitro-o-cresol

4-Nitrophenol

Acenaphthene

Acenaphthylene

Anthracene

Benzo(a)anthracene Benzo(a)pyrene

Chrysene

Di-n-butylphthalate Dibenzofuran

Fluoranthene

Fluorene

N-Nitrosodiphenylamine

Naphthalene Nitrobenzene

Pentachlorophenol Phenanthrene

Phenol Pyrene

bis(2-Chloroethoxy)methane

< 5 ug/L 1 < 10.0 ug/L < 10.0 ug/L

> < 10.0 ug/L < 10.0 ug/L < 10.0 ug/L < 10.0 ug/L < 25.0 ug/L

< 25.0 ug/L < 10.0 ug/L < 10.0 ug/L

< 10.0 ug/L < 10.0 ug/L

< 10.0 ug/L < 10.0 ug/L

< 10.0 < 10.0 ug/L

< 10.0 ug/L < 10.0 ug/L < 10.0 ug/L

< 10.0 ug/L < 10.0 ug/L < 25.0 ug/L

< 10.0 ug/L < 10.0 ug/L < 10.0 ug/L

< 10.0 ug/L

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# REPORT OF LABORATORY ANALYSIS

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# Pace Analytical

Tel: 281-488-1810 Fax: 281-488-4661

June 05, 1997
Report No.: 00061878
Section A Page 2

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW-14
SAMPLE NO: H450662

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
6		bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 1 1	< 10.0 1,020 116	ug/L mg/L mg/L
COM	MENTS:	The volatile and semi-volatile analyses were performed by Pace Analytical - New Orleans laboratory.			

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HWPW-MW-15A

SAMPLE NO: H450663

SAMPLE MATRIX: WATER

DATE SAMPLED: 14-MAY-97 0900

DATE RECEIVED: 14-MAY-97 PROJECT MANAGER: Elessa Sommers

LIMS CLIENT: 0717 0007

PACE PROJECT: H45189

PACE CLIENT: 620437

P.O. NO: 03422

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCW2	8260A TCL Volatiles in Water			
•	or ronz	1,2-Dichloroethane	4		
		Benzene	1	< 5	•
		Chlorobenzene	1	6.81	ug/L
		Ethylbenzene	1	< 5	ug/L
		Methylene chloride	·	15.1	ug/L
		Toluene	1	< 5	ug/L
		Xylenes (total)	1	< 5	•
3	OSVTCW	TCL - Semi-volatile Extractables in Water	1	23.8	ug/L
-	3377311	1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	1	< 10	ug/L
		2,4-Dinitrotoluene	1	< 10	ug/L
		2,6-Dinitrotoluene	1	< 10	ug/L
		2-Chloronaphthalene	1	< 10	ug/L
		2-Methylnaphthalene	1	< 10	ug/L
		The state of the s	10	138	ug/L
		4,6-Dinitro-o-cresol	1	< 25	ug/L
		4-Nitrophenol	1	< 25	ug/L
		Acenaphthene	10	142	ug/L
		Acenaphthylene	1	< 10	ug/L
		Anthracene	1	< 10	ug/L
		Benzo(a)anthracene	1	< 10	ug/L
		Benzo(a)pyrene	1	< 10	ug/L
		Chrysene	1	< 10	ug/L
		Di-n-butylphthalate	1	< 10	ug/L
		Dibenzofuran	1	42.3	ug/L
		Fluoranthene	1	< 10	ug/L
		Fluorene	1	42.8	ug/L
		N-Nitrosodiphenylamine	1	< 10	ug/L
		Naphthalene	50	1,210	ug/L
		Nitrobenzene	1	< 10	ug/L
		Pentachlorophenol	1	< 25	ug/L
		Phenanthrene	1		ug/L
		Phenol	1		ug/L
		Pyrene	1		ug/L
		bis(2-Chloroethoxy)methane	. 1		ug/L
		0.00		10.00	

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW-15A
SAMPLE NO: H450663

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
		hig/2-Ethylhamul >-bab. L			
6	1590	bis(2-Ethylhexyl)phthalate	1	< 10	ug/L
7		Solids, Dissolved at 1800	1	945	mg/L
,	1610	Solids, Suspended at 103C	1		mg/L
COM	IMENTS:	The volatile and semi-volatile analyses were performed by Pace Analytical - New Orleans laboratory.			

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HWPW-MW-15C

SAMPLE NO: H450664

SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007

PACE PROJECT: H45189

PACE CLIENT: 620437

P.O. NO: 03422

DATE SAMPLED: 14-MAY-97 0930

DATE RECEIVED: 14-MAY-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
	4 017010	20/24 700 11 1 11 11 11 11			
	1 OVTCW2	8260A TCL Volatiles in Water			
		1,2-Dichloroethane	1	< 5	ug/L
		Benzene	1	< 5	ug/L
		Chlorobenzene	1	< 5	ug/L
		Ethylbenzene	1	< 5	ug/L
		Methylene chloride	1	< 5	ug/L
		Toluene	1	< 5	ug/L
	7	Xylenes (total)	1	19.9	ug/L
	3 OSVTCW	TCL - Semi-volatile Extractables in Water			
		1,2-Diphenylhydrazine	1	< 10	ug/L
		2,4-Dimethylphenol	1	< 10	ug/L
		2,4-Dinitrotoluene	1	< 10	ug/L
		2,6-Dinitrotoluene	1	< 10	ug/L
		2-Chloronaphthalene	1	< 10	ug/L
		2-Methylnaphthalene	1	19.8	ug/L
		4,6-Dinitro-o-cresol	1	< 25	ug/L
		4-Nitrophenol	1	< 25	ug/L
		Acenaphthene	1	37.7	ug/L
		Acenaphthylene	1	< 10	ug/L
		Anthracene	1	< 10	ug/L
		Benzo(a)anthracene	1	< 10	ug/L
		Benzo(a)pyrene	1	< 10	ug/L
		Chrysene	1	< 10	ug/L
		Di-n-butylphthalate	1	< 10	ug/L
		Dibenzofuran	2	104	ug/L
		Fluoranthene	1	< 10	ug/L
		Fluorene	1	< 10	ug/L
		N-Nitrosodiphenylamine	1	< 10	ug/L
		Naphthalene	1	40.9	ug/L
		Nitrobenzene	1	< 10	ug/L
		Pentachlorophenol	1	< 25	ug/L
		Phenanthrene	1		ug/L
		Phenol	1		ug/L
		Pyrene	* 1		ug/L
		bis(2-Chloroethoxy)methane	1		ug/L
					-

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW-15C
SAMPLE NO: H450664

	TEST				
LN	CODE	DETERMINATION	DILUTIO FACTOR		UNITS
	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C		1 < 10 1 705 1 149	
COM	MENTS:	The volatile and semi-volatile analyses were performe New Orleans laboratory.	d by Pace Analytical -		

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210
ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HWPW-MW-16

SAMPLE NO: H450665

SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007

PACE PROJECT: H45189

PACE CLIENT: 620437

P.O. NO: 03422

DATE SAMPLED: 14-MAY-97 1000

DATE RECEIVED: 14-MAY-97

PROJECT MANAGER: Elessa Sommers

L	TES N COL			DETERMINATION	DILUTION FACTOR	DESIII T	UNITS
	1 OVT	CM5	8260A TCL Volatiles in	Water			
			1,2-Dichloroethane		1	< 5	ug/L
			Benzene		1	10.1	ug/L
			Chlorobenzene		1	< 5	ug/L
			Ethylbenzene		1	32.1	ug/L
			Methylene chloride		1	< 5	•
			Toluene		1	8.32	
	with more and		Xylenes (total)		1	66.6	•
	3 OSVT	CCM	TCL - Semi-volatile Ext	tractables in Water			
			1,2-Diphenylhydrazine		1	< 10	ug/L
			2,4-Dimethylphenol		1	29.1	ug/L
			2,4-Dinitrotoluene		1	< 10	
			2,6-Dinitrotoluene		1	< 10	•
			2-Chloronaphthalene		1	< 10	ug/L
			2-Methylnaphthalene		1	39.3	
			4,6-Dinitro-o-cresol		1	< 25	ug/L
			4-Nitrophenol		. 1	< 25	ug/L
			Acenaphthene		5	139	ug/L
			Acenaphthylene		1	< 10	
			Anthracene		1	16.3	_
			Benzo(a)anthracene		1	< 10	
			Benzo(a)pyrene		1	< 10	_
			Chrysene		1	< 10	ug/L
			Di-n-butylphthalate		1	< 10	ug/L
			Dibenzofuran		1	80.2	
			Fluoranthene		1		
			Fluorene		1		•
			N-Nitrosodiphenylamine		1	< 10	ug/L
			Naphthalene		10	472	
			Nitrobenzene		1		ug/L
			Pentachlorophenol		1		ug/L
			Phenanthrene		5	96.8	
			Phenol		1	< 10	
			Pyrene		1		ug/L
		ŀ	ois(2-Chloroethoxy)metha	ane	1	< 10	
							J

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## REPORT OF LABORATORY ANALYSIS

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW-16
SAMPLE NO: H450665

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS	
6	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 1 1	< 10 538 73	mg/L	
COM	MENTS:	The volatile and semi-volatile analyses were performed by Pace Analytical New Orleans laboratory.	-			

June 05, 1997 Report No.: 00061878 Section A Page 9

#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HWPW-MW-18C

SAMPLE NO: H450666

SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007 PACE PROJECT: H45189

PACE CLIENT: 620437

P.O. NO: 03422

DATE SAMPLED: 14-MAY-97 1110

DATE RECEIVED: 14-MAY-97

PROJECT MANAGER: Elessa Sommers

				<b></b>	
	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCW2	8260A TCL Volatiles in Water			
'	OVICWE	1,2-Dichloroethane	4		
		Benzene	1	< 5	ug/L
		Chlorobenzene	1	< 5	ug/L
		Ethylbenzene	1	< 5	ug/L
		Methylene chloride	1	27.9	ug/L
		Toluene	1	< 5	ug/L
		Xylenes (total)	1	11.9	ug/L
3	OSVTCW	TCL - Semi-volatile Extractables in Water	1	66.5	ug/L
-	03410#	1,2-Diphenylhydrazine		. 40	
		2,4-Dimethylphenol	1	< 10	ug/L
		2,4-Dinitrotoluene	1	< 10	ug/L
		2,6-Dinitrotoluene	1	< 10	ug/L
		2-Chloronaphthalene	1	< 10	ug/L
		2-Methylnaphthalene	1	< 10	ug/L
		4,6-Dinitro-o-cresol	10	125	ug/L
		4-Nitrophenol	1	< 25	ug/L
		Acenaphthene	1	< 25	ug/L
		Acenaphthylene	1	54.1	ug/L
		Anthracene	1	< 10	ug/L
		Benzo(a)anthracene	1	< 10	ug/L
		• •	1	< 10	ug/L
		Benzo(a)pyrene Chrysene	1	< 10	ug/L
		Di-n-butylphthalate	1	< 10	ug/L
		Dibenzofuran	1	< 10	ug/L
		Fluoranthene	1	48.8	ug/L
		Fluorene	1 .		ug/L
			1		ug/L
		N-Nitrosodiphenylamine	1	< 10	ug/L
		Naphthalene Nitrobenzene	20	905	ug/L
			1		ug/L
		Pentachlorophenol Phenanthrene	1		ug/L
			1		ug/L
		Phenol	1		ug/L
		Pyrene	, 1		ug/L
		bis(2-Chloroethoxy)methane	1	< 10	ug/L

# Pace Analytical

Tel: 281-488-1810 Fax: 281-488-4661

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW-18C
SAMPLE NO: H450666

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
6 7	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 1 1	1,050	ug/L mg/L mg/L
COM	MENTS:	The volatile and semi-volatile analyses were performed by Pace Analytical - New Orleans laboratory.			

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### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HWPW-MW-18A

SAMPLE NO: H450667

SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007

PACE PROJECT: H45189

PACE CLIENT: 620437

P.O. NO: 03422

DATE SAMPLED: 14-MAY-97 1145

DATE RECEIVED: 14-MAY-97

PROJECT MANAGER: Elessa Sommers

	TEST	. DETERMINATION	DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCW2	8260A TCL Volatiles in Water			
		1,2-Dichloroethane	10	< 50	ug/L
		Benzene	10	700	ug/L
		Chlorobenzene	10	< 50	ug/L
		Ethylbenzene	10	919	_
		Methylene chloride	10	< 50	ug/L
		Toluene	10	805	ug/L
		Xylenes (total)	10	218	ug/L
3	OSVTCW	TCL - Semi-volatile Extractables in Water			-3/ -
		1,2-Diphenylhydrazine	20	< 200	ug/L
		2,4-Dimethylphenol	200	9,210	ug/L
		2,4-Dinitrotoluene	20	< 200	ug/L
		2,6-Dinitrotoluene	20	< 200	ug/L
		2-Chloronaphthalene	20	< 200	ug/L
		2-Methylnaphthalene	20	617	ug/L
		4,6-Dinitro-o-cresol	20	< 500	ug/L
		4-Nitrophenol	20	< 500	ug/L
		Acenaphthene	20	350	ug/L
		Acenaphthylene	20	< 200	ug/L
		Anthracene	20	< 200	ug/L
		Benzo(a)anthracene	20	< 200	ug/L
		Benzo(a)pyrene	20	< 200	ug/L
		Chrysene	20	< 200	ug/L
		Di-n-butylphthalate	20	< 200	ug/L
		Dibenzofuran	20	< 200	ug/L
		Fluoranthene	20	< 200	ug/L
		Fluorene	20	< 200	ug/L
		N-Nitrosodiphenylamine	20	< 200	ug/L
		Naphthalene	200	7,870	ug/L
		Nitrobenzene	20	< 200	ug/L
		Pentachlorophenol	20	< 500	ug/L
		Phenanthrene	20	< 200	ug/L
		Phenol	100	-	ug/L
		Pyrene	20	< 200	ug/L
		bis(2-Chloroethoxy)methane	20	< 200	ug/L

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# LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW-18A
SAMPLE NO: H450667

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
6 7	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	20 2 1	1,480	ug/L mg/L mg/L
COM	MENTS:	The volatile and semi-volatile analyses were performed by the Pace Analytica New Orleans laboratory.	ι -		

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE NO: H450668 SAMPLE MATRIX: WATER

SAMPLE ID: HWPW-MW-17A

PACE PROJECT: H45189 PACE CLIENT: 620437 P.O. NO: 03422

LIMS CLIENT: 0717 0007

DATE SAMPLED: 14-MAY-97 1310

DATE RECEIVED: 14-MAY-97

PROJECT MANAGER: Elessa Sommers

	TEST		DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
		ed , white			
1	OVTCW2	The state of the s			
		1,2-Dichloroethane	5	< 25	ug/L
		Benzene	5	580	ug/L
		Chlorobenzene	5	< 25	ug/L
		Ethylbenzene	5	205	ug/L
		Methylene chloride	5	< 25	ug/L
		Toluene	5	780	ug/L
		Xylenes (total)	5	105	ug/L
3	OSVTCW	TCL - Semi-volatile Extractables in Water			
		1,2-Diphenylhydrazine	50	< 500	ug/L
		2,4-Dimethylphenol	250	7,140	ug/L
		2,4-Dinitrotoluene	50	< 500	ug/L
		2,6-Dinitrotoluene	50	< 500	ug/L
		2-Chloronaphthalene	50	< 500	ug/L
		2-Methylnaphthalene	50	711	ug/L
		4,6-Dinitro-o-cresol	50 <	1,250	ug/L
		4-Nitrophenol		1,250	ug/L
		Acenaphthene	50	< 500	ug/L
		Acenaphthylene	50	< 500	ug/L
		Anthracene	50	< 500	ug/L
		Benzo(a)anthracene	50	< 500	ug/L
		Benzo(a)pyrene	50	< 500	ug/L
		Chrysene	50	< 500	ug/L
		Di-n-butylphthalate	50		ug/L
		Dibenzofuran	50		ug/L
		Fluoranthene	50		ug/L
		Fluorene	50		ug/L
		N-Nitrosodiphenylamine	50		ug/L
		Naphthalene			ug/L
		Nitrobenzene		-	ug/L
		Pentachlorophenol			ug/L
		Phenanthrene			ug/L
		Phenol			ug/L
		Pyrene	_		ug/L
		bis(2-Chloroethoxy)methane			ug/L
					-J, -

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HWPW-MW-17A SAMPLE NO: H450668

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS	
6 7	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	50 1 1	< 500 758	ug/L mg/L mg/L	
COM	MENTS:	The volatile and semi-volatile analyses were performed by Pace Analytical - New Orleans laboratory.		40	iig/ L	

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HWPW-MW-12C

SAMPLE NO: H450669

SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007 PACE PROJECT: H45189

PACE CLIENT: 620437

P.O. NO: 03422

DATE SAMPLED: 14-MAY-97 1345

DATE RECEIVED: 14-MAY-97

PROJECT MANAGER: Elessa Sommers

TEST			DILUTION		
LN	CODE	DETERMINATION	FACTOR	RESULT	UNITS
1	OVTCW2	92/04 781 1/21 1/21			
•	OVICWZ	The state of the water			
		1,2-Dichloroethane	1	< 5	ug/L
		Benzene	. 1	< 5	ug/L
		Chlorobenzene	1	< 5	ug/L
		Ethylbenzene	1	< 5	ug/L
		Methylene chloride	1	< 5	ug/L
		Toluene	1	< 5	ug/L
7	0017011	Xylenes (total)	1	< 5	ug/L
3	OSVTCW	TCL - Semi-volatile Extractables in Water			
		1,2-Diphenylhydrazine	1	< 10.4	ug/L
		2,4-Dimethylphenol	1	< 10.4	
		2,4-Dinitrotoluene	1	< 10.4	
		2,6-Dinitrotoluene	1	< 10.4	
		2-Chloronaphthalene	1	< 10.4	ug/L
		2-Methylnaphthalene	1	< 10.4	
		4,6-Dinitro-o-cresol	1	< 26.0	
		4-Nitrophenol	1	< 26.0	ug/L
		Acenaphthene	1	< 10.4	
		Acenaphthylene	1		ug/L
		Anthracene	1		ug/L
		Benzo(a)anthracene	1		ug/L
		Benzo(a)pyrene	1		ug/L
		Chrysene	1		ug/L
		Di-n-butylphthalate	1		ug/L
		Dibenzofuran	1	< 10.4	
		Fluoranthene	1	< 10.4	
		Fluorene	1		ug/L
		N-Nitrosodiphenylamine	1		ug/L
		Naphtha Lene	1		ug/L
		Nitrobenzene	1		ug/L
		Pentach loropheno l	1		ug/L
		Phenanthrene	1		ug/L
		Phenol	1		ug/L
		Pyrene	1		ug/L
		bis(2-Chloroethoxy)methane	1	< 10.4	
		·	•	. 10.4	49/ L

# Pace Analytical

Tel: 281-488-1810 Fax: 281-488-4661

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## LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW-12C
SAMPLE NO: H450669

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
6	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 2 1	< 10.4 1,566 112	•
COM	MENTS:	The volatile and semi-volatile analyses were performed by Pace Analytical - New Orleans laboratory.			

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HWPW-MW-12A

**SAMPLE NO: H450670** 

SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007

PACE PROJECT: H45189

PACE CLIENT: 620437

P.O. NO: 03422

DATE SAMPLED: 13-MAY-97 1210

DATE RECEIVED: 14-MAY-97

PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCW2	and the second of the second o			
		1,2-Dichloroethane	1	< 5.00	ug/L
		Benzene	1	< 5.00	ug/L
		Chlorobenzene	1	< 5.00	ug/L
		Ethylbenzene	1	17.1	ug/L
		Methylene chloride	1	< 5.00	
		Toluene	1	8.46	ug/L
		Xylenes (total)	1	28.1	ug/L
3	OSVTCW	TCL - Semi-volatile Extractables in Water			
		1,2-Diphenylhydrazine	1	< 10.2	ug/L
		2,4-Dimethylphenol	1	12.2	ug/L
		2,4-Dinitrotoluene	1	< 10.2	ug/L
		2,6-Dinitrotoluene	1	< 10.2	ug/L
		2-Chloronaphthalene	1	< 10.2	ug/L
		2-Methylnaphthalene	10	397	ug/L
		4,6-Dinitro-o-cresol	1	< 25.5	ug/L
		4-Nitrophenol	1	< 25.5	ug/L
		Acenaphthene	10	186	ug/L
		Acenaphthylene	1	< 10.2	ug/L
		Anthracene	1	15.9	
		Benzo(a)anthracene	1	< 10.2	ug/L
		Benzo(a)pyrene	1	< 10.2	ug/L
		Chrysene	1	< 10.2	ug/L
		Di-n-butylphthalate	1	< 10.2	ug/L
		Dibenzofuran	10	148	ug/L
		Fluoranthene	1	17.7	ug/L
		Fluorene	10	125	ug/L
		N-Nitrosodiphenylamine	1	< 10.2	ug/L
		Naphthalene	200	5,210	ug/L
		Nitrobenzene	1	< 10.2	ug/L
		Pentachlorophenol	1	< 25.5	ug/L
		Phenanthrene	10		ug/L
		Phenol	1	< 10.2	ug/L
		Pyrene	1	< 10.2	ug/L
		bis(2-Chloroethoxy)methane	1	< 10.2	ug/L

# Pace Analytical

Tel: 281-488-1810 Fax: 281-488-4661

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT
SAMPLE ID: HWPW-MW-12A
SAMPLE NO: H450670

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS	•••
6 7	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 1 1	< 10.2 705 27	ug/L mg/L mg/L	
COM	MENTS:	The volatile and semi-volatile analyses were performed by Pace Analytical New Orleans laboratory.				

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

OVERLAND PARK, KS 66210-

SAMPLE NO: H450671

SAMPLE MATRIX: WATER

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HWPW-MW-12B

LIMS CLIENT: 0717 0007

PACE PROJECT: H45189

PACE CLIENT: 620437

P.O. NO: 03422

DATE SAMPLED: 13-MAY-97 1315

DATE RECEIVED: 14-MAY-97

PROJECT MANAGER: Elessa Sommers

LN	TEST CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
1	OVTCW2	8260A TCL Volatiles in Water			
1	OVICWZ	1,2-Dichloroethane		_	
		Benzene	1		ug/L
		Chlorobenzene	1	6.54	•
		Ethylbenzene	1	< 5	ug/L
		Methylene chloride	1	27.6	ug/L
		Toluene	1	< 5	ug/L
		Xylenes (total)	1	6.48	ug/L
3	OSVTCW	TCL - Semi-volatile Extractables in Water	1	28.7	ug/L
,	OSVICE	1,2-Diphenylhydrazine			
		2,4-Dimethylphenol	1	< 10.1	ug/L
		2,4-Dinitrotoluene	1	< 10.1	
		2,6-Dinitrotoluene	1	< 10.1	- J.
		2-Chloronaphthalene	1	< 10.1	ug/L
		2-Methylnaphthalene	1	< 10.1	ug/L
		4,6-Dinitro-o-cresol	10	233	ug/L
		4-Nitrophenol	1	< 25.2	ug/L
		Acenaphthene	1	< 25.2	ug/L
		Acenaphthylene	10	216	ug/L
		Anthracene	1	< 10.1	ug/L
		Benzo(a)anthracene	1	19.7	ug/L
		Benzo(a)pyrene	1	< 10.1	ug/L
		Chrysene	1	< 10.1	•
		Di-n-butylphthalate	1	< 10.1	
		Dibenzofuran	1	< 10.1	ug/L
		Fluoranthene	10	158	ug/L
		Fluorene	1		-
		N-Nitrosodiphenylamine	10		ug/L
		Naphthalene	1	< 10.1	ug/L
		Nitrobenzene	100		ug/L
		Pentachlorophenol	1	< 10.1	ug/L
		Phenanthrene	1	< 25.1	ug/L
		Phenol	10		ug/L
		Pyrene	1		ug/L
		bis(2-Chloroethoxy)methane	1	10.2	
		575(2 direction)//illetifatie	1	< 10.1	ug/L

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# REPORT OF LABORATORY ANALYSIS

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HWPW-MW-12B SAMPLE NO: H450671

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 1 1	< 10.1 1,088 180	ug/L mg/L mg/L
COM	MENTS:	The volatile and semi-volatile analyses were performed by Pace Analytical -			

New Orleans laboratory.

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#### LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT

ADDRESS: 8101 COLLEGE BLVD., SUITE 230

OVERLAND PARK, KS 66210-

ATTENTION: CURTIS L. JONES, CHMM

SAMPLE ID: HWPW-MW-13

**SAMPLE NO: H450672** 

SAMPLE MATRIX: WATER

LIMS CLIENT: 0717 0007 PACE PROJECT: H45189

PACE CLIENT: 620437

P.O. NO: 03422

DATE SAMPLED: 13-MAY-97 1445

DATE RECEIVED: 14-MAY-97 PROJECT MANAGER: Elessa Sommers

LN	CODE	DETERMINATION	DILUTION FACTOR	RESULT	UNITS
				•••••	
1	OVTCW2	8260A TCL Volatiles in Water			
		1,2-Dichloroethane	1	< 5	ug/L
		Benzene	1	< 5	ug/L
		Chlorobenzene	1	< 5	ug/L
		Ethylbenzene	1	< 5	ug/L
		Methylene chloride	1	< 5	ug/L
		Toluene	1	< 5	ug/L
		Xylenes (total)	1	< 5	ug/L
3	OSVTCW	TCL - Semi-volatile Extractables in Water			-0, -
		1,2-Diphenylhydrazine	1	< 10.4	ug/L
		2,4-Dimethylphenol	1	< 10.4	ug/L
		2,4-Dinitrotoluene	1	< 10.4	
		2,6-Dinitrotoluene	1	< 10.4	
		2-Chloronaphthalene	1	< 10.4	
		2-Methylnaphthalene	1	< 10.4	
		4,6-Dinitro-o-cresol	1	< 26.0	ug/L
		4-Nitrophenol	1	< 26.0	ug/L
		Acenaphthene	. 1	< 10.4	ug/L
		Acenaphthylene	1	< 10.4	ug/L
		Anthracene	1	< 10.4	ug/L
		Benzo(a)anthracene	1		ug/L
		Benzo(a)pyrene	1	< 10.4	ug/L
		Chrysene	1	< 10.4	ug/L
		Di-n-butylphthalate	1	< 10.4	ug/L
		Dibenzofuran	1	< 10.4	ug/L
		Fluoranthene	1	< 10.4	ug/L
		Fluorene	1	< 10.4	
		N-Nitrosodiphenylamine	1	< 10.4	ug/L
		Naphthalene	1.	< 10.4	ug/L
		Nitrobenzene	1	< 10.4	ug/L
		Pentachlorophenol	1	< 26.0	ug/L
		Phenanthrene	1	< 10.4	ug/L
		Phenol	1		ug/L
		Pyrene	1	< 10.4	ug/L
		bis(2-Chloroethoxy)methane	1	< 10.4	ug/L

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# LABORATORY ANALYSIS REPORT

CLIENT NAME: TERRANEXT SAMPLE ID: HWPW-MW-13 SAMPLE NO: H450672

LN	TEST	DETERMINATION	DILUTION FACTOR	RESULT	UNITS	
6 7	1590 1610	bis(2-Ethylhexyl)phthalate Solids, Dissolved at 180C Solids, Suspended at 103C	1 1 1	< 10.4 738 36	ug/L mg/L mg/L	, =
COM	MENTS:	The volatile and semi-volatile analyses were performed by Pace Analytical - New Orleans laboratory.				

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Section B Page 1

# SUPPLEMENTAL INFORMATION

		TEST	LCSR Blnk	DUP/MS MS/MSD		SAMPLE PREPAR	RATION		SAMPLE ANAL	YSIS	
	.N	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SI	MPI	.E ID: H	IUDU-MU-1	14							
Ů,			W W P W						SAMPLE	NO: H450	662
	1	OVTCW2	0	0	NA			19-8260A	19-MAY-97 1434	Р	
	6	1590	74398	74398	NA				16-MAY-97 1730	-	TAW800
	7	1610	74368	74368	NA				16-MAY-97 1415		TAW800
	3	OSVTCW	0	0	19-3510B	16-MAY-97 0800	Р	19-8270В			-
SA	MPL	E ID: H	WPW-MW-1	5A					SAMPLE !	IO: H4506	563
	1	OVTCW2	0	0	WA			40.0040.			
		1590	74398	74398					16-MAY-97 1829		
		1610	74368	74368					16-MAY-97 1730		TAW800
		OSVTCW	0			16-MAY-97 1448	D.		16-MAY-97 1415		TAW800
	,	OSVICW	U	U	19-33108	10-MAY-97 1448	P	19-82/0B	23-MAY-97 1448	P	
SA	MPL	E ID: H	WPW-MW-1	5C					SAMPLE N	O: H4506	664
	1	OVTCW2	0	0	NA			19-8260A	16-MAY-97 1857	Р	
	6	1590	74398	74398	NA			02-160.1	16-MAY-97 1730	•	TAW800
	7	1610	74368	74368	NA				16-MAY-97 1415		TAW800
	3	OSVTCW	0	0	19-3510B	16-MAY-97 1823	P	19-8270В	23-MAY-97 1823		OGGWAT
SA	MPL	E ID: H	JPW-MW-1	6					SAMPLE N	O: H4506	65
	1	OVTCW2	0	0	NA			19-8260A-	14 MAY 07 4004	_	
		1590	74398	74398				02-160.1	16-MAY-97 1926 16-MAY-97 1730		0001117
		1610	74368	74368					16-MAY-97 1730		TAW800
		OSVTCW	0			23-MAY-97 1527	P	19-8270B	23-MAY-97 1527	= 5	TAW800
SAI	MPL	E ID: HV	JPW-MW-1	ВС					SAMPLE N	D: H4506	66
	4	01/701/2	•								
		OVTCW2	0		NA				16-MAY-97 1954	-	
		1590	74398	74398				02-160.1	16-MAY-97 1730		TAW800
		1610	74368	74368				02-160.2	16-MAY-97 1415	CP	TAW800
	3	OSVTCW	0	0	19-3510B	16-MAY-97 1901	Р	19-8270В	23-MAY-97 1901	Р	
SAN	(PLE	ID: HW	IPW-MW-18	ВА					SAMPLE NO	D: H4506	67
	1	OVTCW2	0	0	NA			19-8260A	19-MAY-97 1503	D	
				•				I DEGON	17 MM1-71 1303	r	
		1590	74398	74398	NA			02-160 1	16-MAY-07 1770	CD	CORLIAT
	6	1590 1610	74398 74368	74398 74368				02-160.1 02-160.2	16-MAY-97 1730 16-MAY-97 1415		TAW800

# REPORT OF LABORATORY ANALYSIS

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#### SUPPLEMENTAL INFORMATION

	TEST	LCSR BLNK	DUP/MS MS/MSD		SAMPLE PREPAR	RATION		SAMPLE ANAL	YSIS	
LN	CODE	BATCH	BATCH	LR-METHOD	DATE/TIME	ANALYST	LR-METHOD	DATE/TIME	ANALYST	INSTRUMEN
AMPL	E ID: I	HWPW-MW-1	7A					SAMPLE !	NO: H4506	568
1	OVTCW2	0	0	NA			19-8260A	19-MAY-97 1531	Р	
6	1590	74398	74398	NA			02-160.1	16-MAY-97 1730	CP	<b>TAW800</b>
7	1610	74368	74368	NA			02-160.2	16-MAY-97 1415	CP	TAW800
3	OSVTCW	0	0	19-3510B	16-MAY-97 1135	P	19-8270B	23-MAY-97 1135	Р	
AMPL	E ID: 1	HWPW-MW-1	2C					SAMPLE N	NO: H4506	669
1	OVTCW2	0	0	NA			19-8260A	16-MAY-97 2119	P	
6	1590	74398	74398	NA			02-160.1	16-MAY-97 1730		TAW800
7	1610	74368	74368	NA			02-160.2	16-MAY-97 1415	CP	TAW800
3	OSVTCW	0	0	19-3510B	16-JUN-97 1939	P	19-8270B	23-MAY-97 1939	Р	
AMPL	E ID: H	HWPW-MW-1	2A					SAMPLE N	IO: H4506	70
1	OVTCW2	0	0	NA			19-8260A	16-MAY-97 2148	p	
6	1590	74398	74398	NA			02-160.1	16-MAY-97 1730	-	TAW800
7	1610	74368	74368	NA			02-160.2			008WAT
3	OSVTCW	0	0	19-3510B	16-MAY-97 1331	P	19-8270B	23-MAY-97 1331		COUNT
MPL	E ID: H	IWPW-MW-1	2B					SAMPLE N	O: H4506	71
1	OVTCW2	0	0	NA			19-8260A	19-MAY-97 1628	Р	
6	1590	74398	74398	NA			02-160.1	16-MAY-97 1730	CP	TAW800
7	1610	74368	74368	NA			02-160.2	16-MAY-97 1415		TAW800
3	OSVTCW	0	0	19-3510B	16-MAY-97 1409	P	19-8270В	23-MAY-97 1409	Р	
MPL	E ID: H	IWPW-MW-13	3					SAMPLE N	O: H4506	72
1	OVTCW2	0	0	NA			19-8260A	19-MAY-97 1657	Р	
6	1590	74398	74398	NA			02-160.1	16-MAY-97 1730	CP	TAW800
7	1610	74368	74368	NA			02-160.2	16-MAY-97 1415		TAW800
3	OSVTCW	0	0	19-3510B	16-MAY-97 2017	Р	19-8270В	23-MAY-97 2017		J J G M / I

# <u>LR</u> <u>Method Literature Reference</u>

- 02 EPA-Methods for Chemical Analysis of Water & Wastes, 1984.
- 19 EPA-Test Methods for Evaluating Solid Waste, 3rd ed, Nov. 1986 and updates

Pace Analytical Services, Inc. 900 Gemini Avenue Houston, TX 77058

> Tel: 281-488-1810 Fax: 281-488-4661

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**SAMPLE NO: H386848** 

# LABORATORY CONTROL SAMPLE RECOVERY

TEST LCS % LCSD % ACCEPTANCE
CODE DETERMINATION RECOVERY RECOVERY LIMITS RPD

BATCH NO: 74398

1590

Solids, Dissolved at 180C

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# METHOD BLANK DATA

TEST CODE		RESULT UN	IT
BATCH NO:		SAMPLE	NO: H386803
I610 BATCH NO:	Solids, Suspended at 103C	< 4 mg/	L
1590	Solids, Dissolved at 180C	SAMPLE < 5 mg/	

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Section F Page 1

# DUPLICATE AND MATRIX SPIKE DATA

TEST		ORIGINAL RESULT	DUPLICATE RESULT	UNITS	RANGE RPD	-	MS RESUL		MS % RCVRY
BATCH NO:	74368					SAMPLE	NO:	H449447	
1610	Solids, Suspended at 103C	19	19	mg/L	0.0				
BATCH NO:	74368					SAMPLE !	NO:	H450669	
1610	Solids, Suspended at 103C	1.12	112	mg/L	0.0	٠			
BATCH NO:	74398					SAMPLE N	NO:	H450662	
1590	Solids, Dissolved at 180C	1,020	1,034	mg/L	1.4				
BATCH NO:	74398		÷		:	SAMPLE N	10:	H450672	
1590	Solids, Dissolved at 180C	738	712	mg/L	3.6				



Client

CHAIN-OF-CUSTODY RECORD Analytical Request REMARKS Pace Project Manager \*Requested Due Date: Pace Project No. Pace Client No. 14100009 Report To: Robert Coffman OV KEO Project Name / No. HUP! ANAL YSES REQUEST P.O. # / Billing Reference 4 **PRESERVATIVES** AOV Bill To: ниО<sup>3</sup> DS2H ОИРЯЕЅЕВУЕD NO. OF CONTAINERS TIME MATRIX PACE "" 9 400-4227 1210 130 1445 1315 EX 5-1397 ab1 # Jour P S Date Sampled Hesston, Tx 77040 SAMPLE DESCRIPTION Phone (713) 460 -4330 Address (2300 Rethusay Granex + 14W-13B MK1. WIN 119m - 1.3 Sampled By (PRINT): Sampler Signature Elston

SEE REVERSE SIDE FOR INSTRUCTIONS

252/ 15-41.5

DATÉ

ACCEPTED BY / AFFILIATION

RELINQUISHED BY / AFFILIATION

HETURNED/DATE

Additional Comments

2

9

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SHIPMENT METHOD



CHAIN-OF-CUSTODY RECCRD Analytical Request

lient terroidext		Report To: Robert Coffinan	Pace Client No
ddress CAOC Rethering # 190			Table Orientation
			Pace Project Manager
11655 ton 1 k 77040		P.O. # / Billing Reference	Pace Project No.
hone (713) 460 - 4230 Few	460-4227	Project Name / No. #WPW 44/03069	*Requested Due Date:
ampled By (PRINT):		PRESERVATIVES ANALYSES / / /	
P. Soures	r	a:	
ampler Signature Date Sampled			
A K	77 HY50	3	
NG. NG.	TIME MÁTRIX PACENO.		// BEMABKS
1 ,442)-14	Casa Had Cold	8	
2 MW-15-A	800)   Oals		
3 MW-15-C	9330 (964		
4 1416-16			
5 1114 - 186	() SIII		
6 mm -18 A	1145 / 667		
7 rnw - 17A	1310 <b>♦</b> (560		
8 .440-13	- <u>&gt;</u>		**
EXCLERNOS.	ENT T	ITEM HELINGUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION DATE TIME
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SEE REVERSE SIDE FOR INSTRUCTIONS

# Aquifer Slug Test Results Appendix C

February 13, 1998 W.O. #422-09

ERM-SOUTHWEST, INC. 16300 Katy Freeway, Suite 300 Houston, Texas 77094-1611 (281) 579-8999

west, Inc			DATA SET: HWPW10A.IN 02/11/98 AGUIFER MODEL: Confined SOLUTION METHOD:	PROJECT DATA: test date: 5/1/97 TEST DATA: HO = 0.464 ft rc = 0.167 ft rw = 0.438 ft L = 10. ft b = 13.4 ft H = 13.4 ft	PARAMETER ESTIMATES: K = 0.0004217 cm/sec y0 = 0.4188 ft	AGTESOLV
Company: ERM-Southwest,	Project: <b>422-009</b>	0A Slug Test	- - - - - - - - - - -			16. 20.
Client: Houston Wood Preserving Works	Location: Houston, Texas	MW-10A	1	acement (ft)		0.1 4. 4. 8. 12. Time (min)

			DATA SET: HWPW10B.IN 02/11/98	AQUIFER MODEL: Confined SOLUTION METHOD: Bouwer-Rice	PROJECT DATA: test date: 5/1/97	TEST DATA: H0 = 0.464 ft  rc = 0.166 ft  rw = 0.5 ft  L = 14.5 ft  b = 34.6 ft  H = 34.6 ft	PARAMETER ESTIMATES: K = 5.261E-05 cm/sec y0 = 0.4424 ft		AGTESOLV
Company: RDM_Courthwoot	ı	Slug Test						30.	
Client Houston Wood Preserving Works	Houston, Texas	MW-10B	1.			Jacement (ft)	qsid	0.1	

west Inc	1		DATA SET: HWPW12A.IN 02/11/98	AQUIFER MODEL: Confined SOLUTION METHOD: Bouwer-Rice	PROJECT DATA: test date: 5/1/97	TEST DATA:  H0 = 1.83 ft  rc = 0.083 ft  rw = 0.343 ft  L = 8.5 ft  b = 22. ft  H = 22. ft	PARAMETER ESTIMATES: K = 0.003127 cm/sec y0 = 0.9148 ft			AOTESOLV
Company. FRM-Southwest		Slug Test			ļiiri				24. 30.	
Client Houston Wood Preserving Works	ocation: Houston, Texas	MW-12A	10.		1.	Jacement (ft)		0.01	0.001	

thwest Inc	- 1			DATA SET: HWPW12B.IN 02/11/98 AQUIFER MODEL: Confined SOLUTION METHOD: Bouwer-Rice	PROJECT DATA:  test date: 5/1/97  TEST DATA:  H0 = 1.713 ft  rc = 0.083 ft  rw = 0.343 ft  L = 10. ft  b = 34.4 ft  H = 34.4 ft  PARAMETER ESTIMATES:  K = 0.00377 cm/sec  y0 = 1.098 ft
Client Houston Wood Dreserving Works   Company FRM_Southwest	TICHE MOUSEUM HOOK LICECTAINS HOLDS	Location: <b>Houston, Texas</b>   Project: <b>422-009</b>	MW-12B Slug Test	10.	Displacement (ft)  0.01  0.001  0.001  1.  1.  0.001  0.001  1.  1.

hwest, Inc.			DATA SET: HWPW13.IN 02/11/98	AQUIFER MODEL: Confined SOLUTION METHOD: Bouwer-Rice	PROJECT DATA: test date: 5/1/97	TEST DATA: H0 = 1.73 ft  rc = 0.083 ft  rw = 0.34 ft  L = 10. ft  b = 11.57 ft  H = 11.57 ft	PARAMETER ESTIMATES: K = 0.0007992 cm/sec y0 = 1.082 ft	AGTESOLV
Company: ERM-Southwest,	Project: <b>422-009</b>	Slug Test						24. 30.
Client: Houston Wood Preserving Works	n, Tex	MW-13	10.			lacement (ft)	qsid	0.01

west, Inc.			DATA SET: HWPW14.IN 02/11/98	AQUIFER MODEL: Confined SOLUTION METHOD: Bouwer-Rice	PROJECT DATA: test date: 5/1/97	TEST DATA: H0 = 1.839 ft rc = 0.083 ft rw = 0.5 ft L = 10. ft b = 35.29 ft H = 35.29 ft	PARAMETER ESTIMATES: K = 0.000121 cm/sec y0 = 1.533 ft			AGTESOLV
Company: ERM-Southwest,	Project: <b>422-009</b>	Slug Test	III	•	<del> </del> III1				24. 30.	
Client: Houston Wood Preserving Works	Location: <b>Houston, Texas</b>	MW-14	10.		;	lacement (ft)	qsid	0.01	0.001	

west, Inc		·	DATA SET: HWPW15.IN 02/11/98	AQUIFER MODEL: Confined SOLUTION METHOD: Bouwer-Rice	PROJECT DATA: test date: 5/1/97	TEST DATA: H0 = 1.78 ft rc = 0.0833 ft rw = 0.34 ft L = 10. ft b = 15.78 ft H = 15.78 ft	PARAMETER ESTIMATES: K = 0.0006912 cm/sec y0 = 1.245 ft	AGTESOLV
Client: Houston Wood Preserving Works   Company: ERM-Southwest,	Location: Houston, Texas Project: 422-009	MW-15 Slug Test	10.		11	in (ft)	dsid	0.001

ERM-Southwest, Inc			DATA SET: HWPW16.IN 02/10/98	AQUIFER MODEL: Confined SOLUTION METHOD: Bouwer-Rice	PROJECT DATA: test date: 5/1/97	TEST DATA: HO = 1.865 ft rc = 0.083 ft rw = 0.34 ft L = 10. ft b = 17.09 ft H = 17.09 ft	PARAMETER ESTIMATES:  K = 0.0004564 cm/sec  y0 = 1.413 ft			AGTESOLV
Company: ERM—So	Project: <b>422-009</b>	Slug Test		- - - - - - - •	<del></del>		•		24. 30.	
 Client: Houston Wood Preserving Works	Location: <b>Houston, Texas</b>	MW-16 S	10.		1.	o o o	daid	8	0.001	

hwest			DATA SET: HWPW17.IN 02/10/98	AQUIFER MODEL: Confined SOLUTION METHOD: Bouwer-Rice	PROJECT DATA: test date: 5/1/97	TEST DATA: H0 = 1.824 ft rc = 0.083 ft rw = 0.34 ft L = 10. ft b = 20.03 ft H = 20.03 ft	PARAMETER ESTIMATES: K = 0.0002886 cm/sec y0 = 1.577 ft	AGTESOLV
Company: ERM—Southwest	Project: <b>422-009</b>	Slug Test			<del> </del> 11111		• •	24. 30.
Client: Houston Wood Preserving Works	Location: <b>Houston, Texas</b>	MW-17 S	10.			lacement (ft)	dsid	0.001 6. 12. 18. Time (min)

	ERM-Southwest, Inc.	60		DATA SET: HWPW18.IN 02/10/98	AQUIFER MODEL: Confined SOLUTION METHOD: Bouwer-Rice	PROJECT DATA: test date: 5/1/97	TEST DATA:  HO = 1.779 ft  rc = 0.083 ft  rw = 0.34 ft  L = 10. ft  b = 14.59 ft  H = 14.59 ft	PARAMETER ESTIMATES: K = 0.001387 cm/sec y0 = 0.9848 ft	AQTESOLV
er i	Company: ERM—S	Project: <b>422-009</b>	Slug Test			·			16. 20.
	Client: Houston Wood Preserving Works	Location: Houston, Texas	MW-18	10.		.1	lacement (ft)	qsid	0.01

# Preliminary Outline for Risk Reduction Implementation Plan

Appendix D

February 13, 1998 W.O. #422-09

ERM-SOUTHWEST, INC. 16300 Katy Freeway, Suite 300 Houston, Texas 77094-1611 (281) 579-8999

# PRELIMINARY OUTLINE RISK REDUCTION IMPLEMENTATION WORK PLAN

# HOUSTON WOOD PRESERVING WORKS HOUSTON, TEXAS

# **EXECUTIVE SUMMARY**

1.0	INTE	ODUCTION						
	1.1	SCOPE AND OBJECTIVES						
	1.2	SITE LOCATION AND DESCRIPTION						
	1.3	SITE HISTORY						
	1.4	REGULATORY FRAMEWORK						
2.0	REM	EDIAL INVESTIGATION SUMMARY						
	2.1	SITE CHARACTERIZATION						
		2.1.1 Previous Soil Investigations						
		2.1.2 Previous Ground Water Investigations						
		2.1.3 Soil Geochemical Analytical Results						
		2.1.4 Ground Water and Surface Water Analytical Results						
	2.2	SITE GEOLOGY AND HYDROGEOLOGY						
		2.2.1 Environmental Setting						
		2.2.2 Regional Geology and Hydrogeology						
		2.2.3 Site-Specific Geology and Hydrogeology						
		2.2.4 Water Well Survey						
		2.2.5 Estimates of Horizontal Flow Rate and Flow Direction						
		2.2.6 Interaction of the A and B Transmissive Zones						
	2.3	EXTENT OF AFFECTED MEDIA						
		2.3.1 Extent of Affected Soil						
		2.3.2 Extent of Affected Ground Water						
		2.3.3 Site Conceptual Model						
3.0	APPL	CATION OF RISK REDUCTION STANDARDS						
	3.1							
	3.2	STANDARD NO. 2						
	3.3	STANDARD NO. 3						
1.0	PREL	MINARY RISK ASSESSMENT ACTIVITIES						
	1 1	DATE THE TALL THE						

- DATA EVALUATION
  - 4.1.1 Selection of Data Based Upon Useability
  - 4.1.2 Samples Included in the Risk Assessment Database
- TWO-TIERED SCREEN FOR SELECTION OF CONSTITUENTS 4.2 OF CONCERN (COCs)
  - 4.2.1 Selection of Constituents for Standard No. 3 Risk Reduction Evaluation
  - Screening Comparison to Standard No. 2 MSCs and 4.2.2 Identification of COCs for Standard No. 2 Risk Reduction Evaluation

- 5.0 SITE-SPECIFIC RISK ASSESSMENT ISSUES
  - 5.1 RISK ASSESSMENT FOR DERMAL EXPOSURE TO CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBONS
  - 5.2 PRACTICAL QUANTITATION LIMITS (PQLs)
  - 5.3 WETLANDS AND ECOLOGICAL ASSESSMENT
- 6.0 PROPOSED CONTENTS OF RISK REDUCTION REPORT
- 7.0 REFERENCES

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- 2-4 GEOLOGIC CROSS-SECTION B-B'
- 2-5 GEOLOGIC CROSS-SECTION C-C'
- 2-6 GEOLOGIC CROSS-SECTION D-D'
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- 4-4 CONSTITUENTS OMITTED FROM THE QUANTITATIVE ASSESSMENT FOR SOIL
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# **APPENDIX**

A DERIVATION OF STANDARD NO. 2 MSCs