

## Environmental Documents

**Request 13: Documents given to  
contractors regarding environmental issues  
at West Los Angeles**



78. Brentwood School Project, Soil  
Investigation Report (Oct 18, 1999)

# **BRENTWOOD SCHOOL PROJECT**

## **Soil Investigation Report**

**URS Greiner Woodward Clyde**

**October 18, 1999**

78-1

**FINAL REPORT**

**SOIL INVESTIGATION REPORT FOR  
THE VETERANS ADMINISTRATION  
MEDICAL CENTER  
LOS ANGELES, CALIFORNIA**

*Prepared for*  
Coastal Safety & Health Services, Inc.  
2621 Manhattan Avenue #155  
Hermosa Beach, California

October 18, 1999

***URS Greiner Woodward Clyde***

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Project 5709970030.01

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# SECTION ONE

## Introduction

This report presents findings from a subsurface soil investigation conducted at the Veterans Administration Medical Center (VAMC) arroyo area, located at 11301 Wilshire Boulevard in Los Angeles, California. The site location is illustrated on Figure 1.

The limited subsurface investigation was conducted to evaluate the shallow soil conditions to 30 feet below ground surface (bgs) within the old and new fill areas located in the arroyo. For the purpose of this discussion, the "old fill" was removed from the stockpile in 1997 and the "new fill" was removed from the stockpile in 1999.

### 1.1 OBJECTIVE

The objective of the subsurface investigation was to assess the shallow soil conditions to a depth of 30 feet bgs within the old and new fill area located in the arroyo.

### 1.2 SITE BACKGROUND

The Veterans Administration Medical Center arroyo area is located in the northern section of the 450 acres of land owned by the Veterans Administration (VA). The small undeveloped arroyo bisects the northern portion of land into an east and west area. The arroyo is bordered by Brentwood School to the north, condominiums to the south, athletic fields and courts to the east and the Brentwood Post Office and Brentwood Park to the west. The arroyo is currently undeveloped, with the exception of small access roads. The banks of the arroyo are covered with vegetation. Approximately 2.0 acres of wetlands are located within the arroyo. During storms, water runs down the slopes of the arroyo, eroding its sides and the edges of the adjacent athletic fields and courts, and deposits sediment and plant debris in the wetland.

In order to reduce erosion of the arroyo and debris build-up, the upstream City of Los Angeles storm drain was extended into the arroyo. The 2,500 linear feet of pipe was covered with 50,000 cubic yards of soil at the upstream end of the arroyo and the area was graded to provide for drainage toward the wetland. The source of the new and old fill to cover the pipeline was from the same stockpile (containing approximately 134,000 cubic yards of soil) located beneath an existing helicopter landing pad at the southern end of the VAMC. The stockpile was the result of a basement excavation for the new hospital in 1972. The remaining 84,000 cubic yards of soil was used to reduce the slope of the arroyo sides.

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## SECTION TWO

## Sampling Activities

In September 1999, shallow borings were advanced to 30 feet below ground surface (bgs) at four selected locations within the old and new fill area. One boring (DP-1) was advanced within the old fill and three borings (DP-2, DP-3, and DP-4) were advanced within the new fill. The sampling locations were selected to provide data representative of conditions of the old and new fill. The sample locations are illustrated on Figures 2 through 4.

The soil borings were advanced using the Geoprobe direct push system. Soil samples were collected from each boring at approximate depths of 5, 15, and 30 feet bgs. Collected soil samples were submitted to Quanterra Laboratories, a state certified analytical laboratory, for analysis of total petroleum hydrocarbons-diesel range (TPH-D), total petroleum hydrocarbons-gasoline range (TPH-G), benzene, toluene, ethylbenzene, xylenes (BTEX), total copper, and total lead.

The following sections describe methods used for collection and analysis of soil samples.

### 2.1 SOIL SAMPLING

Soil samples were collected using the Geoprobe sampling system, which allowed for relatively undisturbed soil sample collection and minimized soil cuttings. A Geoprobe drill rig was used to hydraulically advance an 18-inch stainless steel sampler into the subsurface soil. Upon reaching desired sampling depths, a locking pin was released which allowed soil to collect within the sampler.

Soil samples were collected in acetate butyrate liners provided by the drilling contractor. Upon retrieval from the sampler, discrete sections were obtained from the continuous liners at the desired sampling depth and were covered with Teflon film and plastic caps and immediately placed on ice for delivery to the laboratory. The samples were labeled to identify the job number, initials of personnel collecting the sample, date and time of sample collected. A chain-of-custody form was used to document sample possession from the time of collection until delivery to the laboratory. Copies of the chain-of-custody are provided in Appendix A.

Soil in the remaining liner was used for classification and field organic vapor readings. Soil was classified using the Unified Soil Classification System. Boring logs containing soil classification and organic vapor readings and equipment calibration forms are provided as Appendix B.

Sampling equipment was decontaminated between each sample and drilling rods and equipment were decontaminated between each boring. The borings were backfilled with bentonite chips and

## SECTION TWO

## Sampling Activities

capped with concrete. Photographic documentation of the sampling event is provided in Appendix C.

## SECTION THREE

## Laboratory Methods and Results

The following subsections present the laboratory methods and the soil sample analytical results for the property. Additionally, the analytical results are summarized in Table 1, and copies of the laboratory analytical results and chain-of-custody documentation are provided in Appendix A.

### 3.1 LABORATORY METHODS

Soil samples collected at approximate depths of 5, 15, and 30 feet bgs, accompanied by a chain-of-custody, were delivered to Quanterra Laboratories in Santa Ana, California for analysis of TPH (diesel and gasoline) using modified EPA Method 8015M and for analysis of BTEX and MTBE using EPA Method 8021B, and for total copper and total lead using EPA Method 6010.

### 3.2 COPPER AND LEAD

All 13 samples analyzed contained detectable concentrations of total copper and total lead. Detected concentrations of copper ranged from 13.1 mg/kg to 47.7 mg/kg. In general, the highest samples were collected at or above 15 feet bgs. Detected concentrations of lead ranged from 3.5 mg/kg to 17.9 mg/kg.

### 3.3 BTEX AND MTBE

BTEX and MTBE concentrations were not detected in any of the soil samples analyzed above laboratory reporting limits. However, ethylbenzene was detected above the method detection limit in seven samples at concentrations ranging from 0.73J  $\mu\text{g}/\text{kg}$  to 1.4J  $\mu\text{g}/\text{kg}$ . A "J" denotes an estimated value that is greater or equal to the method detection limit (MDL), but less than the laboratory reporting limit. With the exception of DP-4-30', all samples collected contained detectable concentrations of Xylenes ranging from 2.2J  $\mu\text{g}/\text{kg}$  to 15J  $\mu\text{g}/\text{kg}$ .

### 3.4 TOTAL PETROLEUM HYDROCARBONS-GASOLINE AND DIESEL RANGE

Concentrations of TPH-diesel were detected above laboratory reporting limits in one of the 13 soil samples analyzed at the property. At sample location DP-2-15', an unknown TPH-diesel was detected at a concentration of 28 mg/kg at 15 feet bgs. No other sample collected showed detectable TPH-gasoline or TPH-diesel. A summary of soil sample analytical results is presented in Table 1.

The conclusions of this investigation are presented below and were developed based on the field activities and analytical results of soil samples collected for this investigation.



## SECTION THREE

## Laboratory Methods and Results

- Metal concentrations measured in the soil samples were compared with Total Threshold Limit Concentration (TTLC) values, Soluble Threshold Limit Concentrations (STLC) and with metal concentrations cited in the reference document entitled "Background Concentrations of Trace and Major Elements in California Soils" (Kearney Foundation Special Report, 1996).

Soil analytical results for metals indicate that neither total copper or total lead were detected at concentrations above TTLC concentration limits or ten times soluble threshold limit concentration (STLC) which suggest these samples do not exceed the California Title 22 STLCs. Metal concentrations in all soil samples were within the range of background concentrations found in typical California soils (Kearney Foundation Special Report, 1996)

- All VOCs, including Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) were reported at concentrations less than the laboratory reporting limits.
- An unknown TPH-diesel was detected in one soil sample collected (DP-2-15') at a depth of 15 feet bgs, from the new fill at a concentration of 28 mg/kg. However, soil samples collected at the 5 feet bgs and 30 feet bgs depths at the same sample location did not detect TPH-gasoline or TPH-diesel.

## SECTION FOUR

## Recommendations

Based on the scope of work and the results of this investigation, URSGWC recommends that no further investigations or remedial action be required at the property within the fill earth (30 feet bgs) for the following reasons:

- Only one soil location at 15 feet bgs contained hydrocarbons greater than 20 mg/kg.. However, hydrocarbons were not detected in the soil samples collected at depths of 5 feet bgs or 30 feet bgs at the same location.
- BTEX and MTBE were not detected in any of the soil samples analyzed above laboratory reporting limits.

If a change in land use is contemplated, or other historical information concerning the property is obtained, the recommendations of this investigation should be reviewed.

## SECTION FIVE

## Limitations

Services performed by URSGWC for this assignment were conducted in a manner consistent with that level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representations to VAMC, either expressed or implied, and no warranty or guarantee is included or intended in this report. Opinions relating to environmental, geologic, and geotechnical conditions are based on limited data and actual conditions may vary from those encountered at the times and locations where the data were obtained, despite the use of due professional care.

The services provided for this assignment have been performed in accordance with the Scope of Services negotiated between Coastal Safety and Health Services Inc. and URSGWC.

Any reliance on this report by any other party by Coastal Safety and Health Services Inc. and VAMC shall be at such party's sole risk unless that party has written authorization from URSGWC to use this document. The purpose of this restriction is to attempt to protect the interests of parties for whom the report may be appropriately directed.



Summary of Soil Analytical Results by EPA Methods 6010, 8021 B, and 8015M

VAMC

Los Angeles, California

Sample ID	Depth (ft)	Copper (mg/kg)	Lead (mg/kg)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (total)	o-Xylene	m-Xylene	TPH-D	Extractable Petroleum Hydrocarbons (mg/kg)	TPH-G	Unknown Hydrocarbon	Volatiles, Petroleum Hydrocarbons (mg/kg)
DP-1-5'	5	28.9	8.4	<5.0	<5.0	1.6J	1.1J	5.4J	<5.0	4.7J	<10	<10	<1.0	<1.0	<1.0
DP-1-15'	15	32.3	4.4	<5.0	<5.0	1.6J	0.73J	3.8J	<5.0	3.3J	<10	<10	<1.0	<1.0	<1.0
DP-1-30'	30	33.3	5	<5.0	<5.0	1.2J	<5.0	2.8J	<5.0	2.5J	<10	<10	<1.0	<1.0	<1.0
DP-2-5'	5	34.3	9.4	<5.0	<5.0	1.2J	0.90J	5.1J	<5.0	4.5J	<10	<10	<1.0	<1.0	<1.0
DP-2-15'	15	30.4	17.9	<5.0	<5.0	0.92J	<5.0	2.2J	<5.0	2.1J	<10	<10	<1.0	<1.0	<1.0
DP-2-30'	30	23.1	4.6	<5.0	<5.0	1.2J	<5.0	2.4J	<5.0	2.2J	<10	<10	<1.0	<1.0	<1.0
DP-3-5A'	5	30.8	16.5	<5.0	<5.0	0.88J	<5.0	2.7J	<5.0	2.4J	<10	<10	<1.0	<1.0	<1.0
DP-3-5'	5	47.7	5.6	<5.0	<5.0	<5.0	1.4J	2.3J	2.9J	<10	<10	<10	<1.0	<1.0	<1.0
DP-3-15'	15	34	5.3	<5.0	<5.0	1.1J	1.4J	2.3J	2.9J	<10	<10	<10	<1.0	<1.0	<1.0
DP-3-30'	30	13.1	3.5	<5.0	<5.0	<5.0	1.0J	2.2J	2.8J	<10	<10	<10	<1.0	<1.0	<1.0
DP-4-5'	5	31.7	4.9	<5.0	<5.0	<5.0	<5.0	3.7J	2.6J	1.4J	<10	<10	<1.0	<1.0	<1.0
DP-4-15'	15	16.2	4.1	<5.0	<5.0	<5.0	<5.0	3.8J	2.6J	1.4J	<10	<10	<1.0	<1.0	<1.0
DP-4-30'	30	19.5	5.2	<5.0	<5.0	<5.0	0.98J	<15	2.4J	<10	<10	<10	<1.0	<1.0	<1.0

Notes:

feet bgs = feet below ground surface

mg/kg = milligrams per kilogram (ppm)

ug/kg = microgram per kilogram

J = denotes an estimated value that is greater than or equal to the Method Detection Limit (MDL) but less than the laboratory reporting limit.

Bold numbers designate concentration above the laboratory reporting limit.

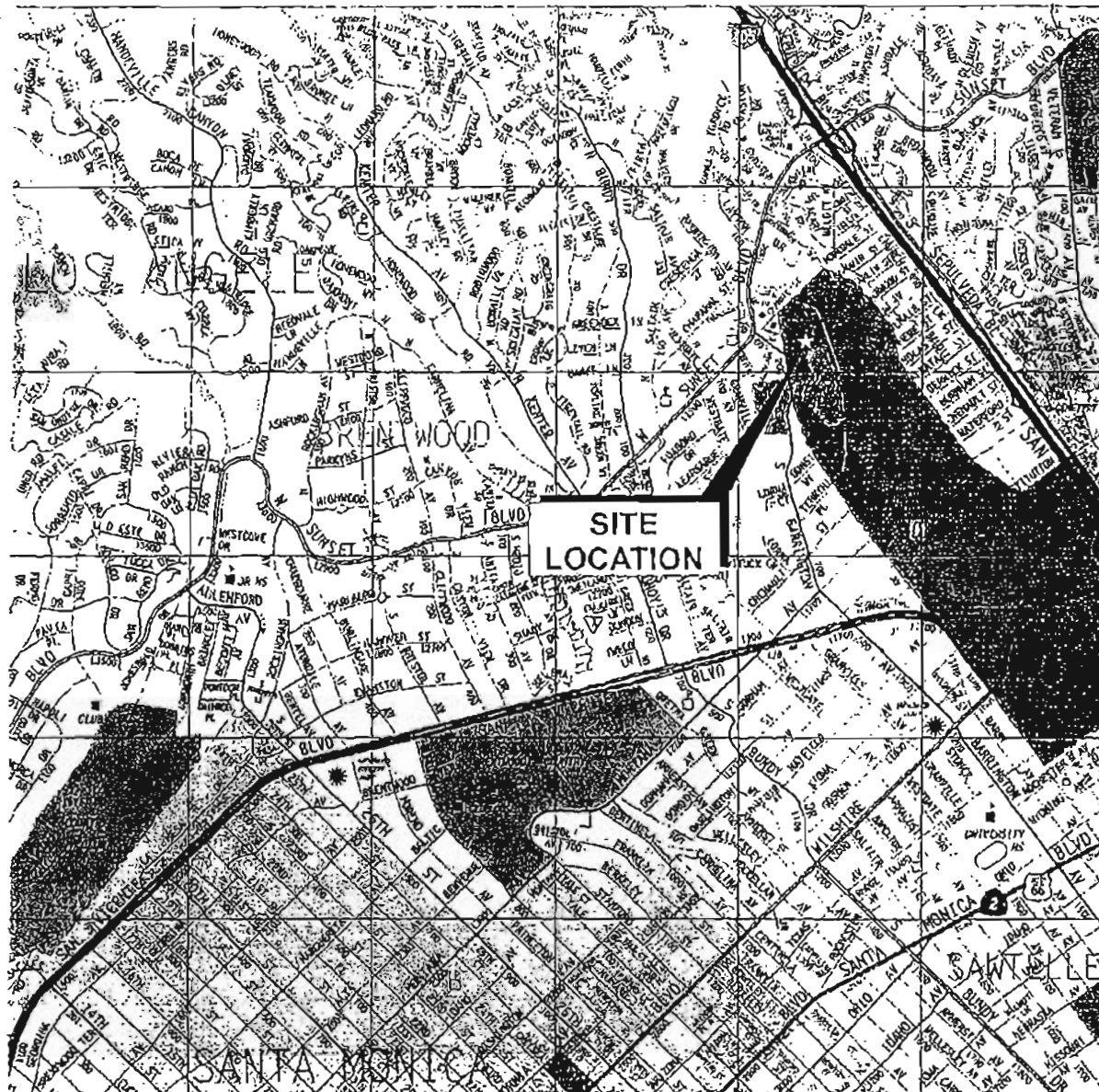
DP-3-5A' is a duplicate of DP-3-5'

Total Threshold Limit Concentration (TLC), California Code of Regulations, Title 22, Section 66261.24, February 16, 1996, for copper and lead is

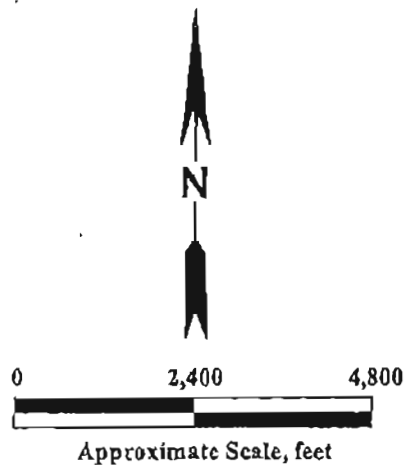
2,500 mg/kg and 1,000 mg/kg, respectively.

Soluble Threshold Limit Concentration (STLC), California Code of Regulations, Title 22, Section 66261.24, February 16, 1996, for copper and lead is

25 mg/kg and 5 mg/kg respectively.



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### SITE LOCATION MAP

Project No.: 5709970030.00	Date: OCTOBER 1999	Project: VA HOSPITAL	Fig. 1
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HADMMWASTE.CDR

URS Brainerd Woodward Clyde

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**Appendix A**

**Laboratory Analytical Data**

**Appendix A**  
**Laboratory Analytical Data**

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SW 815

**Precis**  
A Quanterra Product

Quanterra  
1721 South Grand Ave.  
Santa Ana, CA 92705

Tel (714) 258-8610  
Fax (714) 258-0921

October 4, 1999

QUANTERRA INCORPORATED LOT NUMBER: E91280216

Teri West  
URS Greiner Woodward-Clyde  
2020 East First Street  
Suite 400  
Santa Ana, CA 92705

Dear Ms. West,

This report contains the analytical results for the 13 samples received under chain of custody by Quanterra Incorporated on September 28, 1999. These samples are associated with your Los Angeles VA Hospital project.

All applicable quality control procedures met method-specified acceptance criteria.

This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions, please feel free to call me at 714-258-8610.

Sincerely,



Diane Suzuki  
Project Manager

cc: project file

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URS Greiner Woodward-Clyde

SHIPMENT NO.: \_\_\_\_\_

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NAME: VA HOSPITAL

DATE 9/28/99

PROJECT NO.: 57.09970030.01

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required*
		Material	Method		Temp	Chemical	
DP-1-5'	VA HOSP	SOIL	DIRECT ASH	1" x 1" ACETATE	ICED	NONE	(1)
DP-1-15'							
DP-1-30'							
DP-2-5'							
DP-2-15'							
DP-2-30'							
DP-3-5A							
DP-3-5'							
DP-3-15'							
DP-3-30'							
DP-4-5'							
DP-4-15'							
DP-4-30'	↓	↓	↓	↓	↓	↓	↓
END OF RECORD							

Total Number of Samples Shipped: 13 Sampler's Signature: [Signature]

Relinquished By: Signature: <u>[Signature]</u> Printed Name: <u>JEFF ENGELS</u> Company: <u>URSGWC</u> Reason: <u>SEND TO LAB FOR ANALYSIS</u>	Received By: Signature: <u>[Signature]</u> Printed Name: <u>JL MARTIN</u> Company: <u>GA-SA</u>	Date: <u>9/28/99</u> Time: <u>15:10</u>
--	--	--

Relinquished By: Signature: _____ Printed Name: _____ Company: _____ Reason: _____	Received By: Signature: _____ Printed Name: _____ Company: _____	Date: <u>1/1</u> Time: _____
--	---	---------------------------------

Relinquished By: Signature: _____ Printed Name: _____ Company: _____ Reason: _____	Received By: Signature: _____ Printed Name: _____ Company: _____	Date: <u>1/1</u> Time: _____
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Relinquished By: Signature: _____ Printed Name: _____ Company: _____ Reason: _____	Received By: Signature: _____ Printed Name: _____ Company: _____	Date: <u>1/1</u> Time: _____
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Special Shipment / Handling / Storage Requirements:  
PH-G + TPH-D (8015M), JTEX 8021, LEAD + COPPER (60DB)  
SEND/FAX RESULTS TO TERT WEST @ 714 667-7147  
NORMAL TURN TIME  
 \* Note - This does not constitute authorization to proceed with analysis

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## Laboratory/Client Sample Cross-Reference

Lab Sample ID	Client Sample ID	Date	Matrix
E91280216-001	DP-1-5'	09/28/99	Solid
E91280216-002	DP-1-15'	09/28/99	Solid
E91280216-003	DP-1-30'	09/28/99	Solid
E91280216-004	DP-2-5'	09/28/99	Solid
E91280216-005	DP-2-15'	09/28/99	Solid
E91280216-006	DP-2-30'	09/28/99	Solid
E91280216-007	DUP-DP-3-5A	09/28/99	Solid
E91280216-008	DP-3-5'	09/28/99	Solid
E91280216-009	DP-3-15'	09/28/99	Solid
E91280216-010	DP-3-30'	09/28/99	Solid
E91280216-011	DP-4-5'	09/28/99	Solid
E91280216-012	DP-4-15'	09/28/99	Solid
E91280216-013	DP-4-30'	09/28/99	Solid

**Table of Definitions**

<u>Qualifier</u>	<u>Area</u>	<u>Definition</u>
J.	GC Semivolatiles	Pattern is unknown hydrocarbon; carbon range is C14 to beyond C24. Estimated result. Result is less than RL.

Client: URS GREINER WOODWARD-CLYDE

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# GC Semivolatiles

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Client: **URS GREINER WOODWARD-CLYDE**

Client Sample ID: DP-1-5'  
Lab Sample ID: E9I280216-001

**Hydrocarbons, Extractable Petroleum (8015B)**  
*Auto-Shaker/Solid-Solvent Extraction*

Batch: 9272240  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1

Method: 8015B  
Preparation: AUTO-SHAKER

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	ND	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	88	60-140		

Client Sample ID: DP-1-15'  
Lab Sample ID: E9I280216-002

**Hydrocarbons, Extractable Petroleum (8015B)**  
*Auto-Shaker/Solid-Solvent Extraction*

Batch: 9272240  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1

Method: 8015B  
Preparation: AUTO-SHAKER

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	ND	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	78	60-140		

Client Sample ID: DP-1-30'  
Lab Sample ID: E9I280216-003

**Hydrocarbons, Extractable Petroleum (8015B)**  
*Auto-Shaker/Solid-Solvent Extraction*

Batch: 9272240  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1

Method: 8015B  
Preparation: AUTO-SHAKER

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	ND	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	97	60-140		

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# Analytical Data Report

Client: URS GREINER WOODWARD-CLYDE

Client Sample ID: DP-2-5'  
Lab Sample ID: E91280216-004

### Hydrocarbons, Extractable Petroleum (8015B) Auto-Shaker/Solid-Solvent Extraction

Batch: 9272240  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1  
Method: 8015B  
Preparation: AUTO-SHAKER  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	ND	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	92	60-140		

Client Sample ID: DP-2-15'  
Lab Sample ID: E91280216-005

### Hydrocarbons, Extractable Petroleum (8015B) Auto-Shaker/Solid-Solvent Extraction

Batch: 9272240  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1  
Method: 8015B  
Preparation: AUTO-SHAKER  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	28	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	96	60-140		

Client Sample ID: DP-2-30'  
Lab Sample ID: E91280216-006

### Hydrocarbons, Extractable Petroleum (8015B) Auto-Shaker/Solid-Solvent Extraction

Batch: 9272240  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1  
Method: 8015B  
Preparation: AUTO-SHAKER  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	ND	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	89	60-140		

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# Analytical Data Report

Client: URS GREINER WOODWARD-CLYDE

Client Sample ID: DUP-DP-3-5A  
Lab Sample ID: E91280216-007

## Hydrocarbons, Extractable Petroleum (8015B) Auto-Shaker/Solid-Solvent Extraction

Batch: 9272240  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1  
Method: 8015B  
Preparation: AUTO-SHAKER  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	ND	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	88	60-140		

Client Sample ID: DP-3-5  
Lab Sample ID: E91280216-008

## Hydrocarbons, Extractable Petroleum (8015B) Auto-Shaker/Solid-Solvent Extraction

Batch: 9272240  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1  
Method: 8015B  
Preparation: AUTO-SHAKER  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	ND	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	89	60-140		

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**Client:** URS GREINER WOODWARD-CLYDE

**Client Sample ID:** DP-3-15'  
**Lab Sample ID:** E9I280216-009

**Hydrocarbons, Extractable Petroleum (8015B)**  
**Auto-Shaker/Solid-Solvent Extraction**

**Batch:** 9272240  
**Matrix:** Solid  
**Units:** mg/kg  
**Dil. Factor:** 1  
**Method:** 8015B  
**Preparation:** AUTO-SHAKER  
**Date Sampled:** 09/28/99  
**Date Prepared:** 09/29/99  
**Date Analyzed:** 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	ND	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	91	60-140		

**Client Sample ID:** DP-3-30'  
**Lab Sample ID:** E9I280216-010

**Hydrocarbons, Extractable Petroleum (8015B)**  
**Auto-Shaker/Solid-Solvent Extraction**

**Batch:** 9272240  
**Matrix:** Solid  
**Units:** mg/kg  
**Dil. Factor:** 1  
**Method:** 8015B  
**Preparation:** AUTO-SHAKER  
**Date Sampled:** 09/28/99  
**Date Prepared:** 09/29/99  
**Date Analyzed:** 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	ND	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	91	60-140		

**Client Sample ID:** DP-4-5'  
**Lab Sample ID:** E9I280216-011

**Hydrocarbons, Extractable Petroleum (8015B)**  
**Auto-Shaker/Solid-Solvent Extraction**

**Batch:** 9272240  
**Matrix:** Solid  
**Units:** mg/kg  
**Dil. Factor:** 1  
**Method:** 8015B  
**Preparation:** AUTO-SHAKER  
**Date Sampled:** 09/28/99  
**Date Prepared:** 09/29/99  
**Date Analyzed:** 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	ND	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	93	60-140		

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# Analytical Data Report

Client: URS GREINER WOODWARD-CLYDE

Client Sample ID: DP-4-15'  
Lab Sample ID: E91280216-012

## Hydrocarbons, Extractable Petroleum (8015B) Auto-Shaker/Solid-Solvent Extraction

Batch: 9272240  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1  
Method: 8015B  
Preparation: AUTO-SHAKER  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	ND	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	91	60-140		

Client Sample ID: DP-4-30'  
Lab Sample ID: E91280216-013

## Hydrocarbons, Extractable Petroleum (8015B) Auto-Shaker/Solid-Solvent Extraction

Batch: 9272240  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1  
Method: 8015B  
Preparation: AUTO-SHAKER  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Diesel)	ND	10	5.0	
Unknown Hydrocarbon	ND	10	5.0	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	92	60-140		



Client: URS GREINER WOODWARD-CLYDE

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# GC Volatiles

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Client: **URS GREINER WOODWARD-CLYDE**

Client Sample ID: **DP-1-5'**

Lab Sample ID: **E91280216-001**

**BTEX + MTBE by 8021B**  
*Purge-and-Trap*

Batch: 9272234  
Matrix: Solid  
Units: ug/kg  
Dil. Factor: 1

Method: CA LUFT  
Preparation: CA LUFT

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	1.1	5.0	0.50	J
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	1.6	5.0	0.50	J
m-Xylene & p-Xylene	4.7	10	1.0	J
o-Xylene	ND	5.0	1.0	
Xylenes (total)	5.4	15	2.0	J
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	83	60-130		

Client Sample ID: **DP-1-5'**

Lab Sample ID: **E91280216-001**

**Hydrocarbons, Volatile Petroleum (8015B)**  
**PURGE AND TRAP**

Batch: 9272231  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1

Method: 8015B  
Preparation: 5030

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	78	60-130		

Client: **URS GREINER WOODWARD-CLYDE**

Client Sample ID: **DP-1-15'**  
Lab Sample ID: **E9I280216-002**

**BTEX + MTBE by 8021B**  
*Purge-and-Trap*

Batch: 9272234  
Matrix: Solid  
Units: ug/kg  
Dil. Factor: 1

Method: CA LUFT  
Preparation: CA LUFT

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	0.73	5.0	0.50	J
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	1.6	5.0	0.50	J
m-Xylene & p-Xylene	3.3	10	1.0	J
o-Xylene	ND	5.0	1.0	
Xylenes (total)	3.8	15	2.0	J
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	87	60-130		

Client Sample ID: **DP-1-15'**  
Lab Sample ID: **E9I280216-002**

**Hydrocarbons, Volatile Petroleum (8015B)**  
*PURGE AND TRAP*

Batch: 9272231  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1

Method: 8015B  
Preparation: 5030

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	76	60-130		



# Analytical Data Report

Client: URS GREINER WOODWARD-CLYDE

Client Sample ID: DP-1-30'  
Lab Sample ID: E91280216-003

## BTEX + MTBE by 8021B Purge-and-Trap

Batch: 9272234  
Matrix: Solid  
Units: ug/kg  
Dil. Factor: 1

Method: CA LUFT  
Preparation: CA LUFT

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	ND	5.0	0.50	
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	1.2	5.0	0.50	J
m-Xylene & p-Xylene	2.5	10	1.0	J
o-Xylene	ND	5.0	1.0	
Xylenes (total)	2.8	15	2.0	J
Surrogate	% Rec.	Acceptance Limit	Qualifier	
a,a,a-Trifluorotoluene (TFT)	82	60-130		

Client Sample ID: DP-1-30'  
Lab Sample ID: E91280216-003

## Hydrocarbons, Volatile Petroleum (8015B) PURGE AND TRAP

Batch: 9272231  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1

Method: 8015B  
Preparation: 5030

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
a,a,a-Trifluorotoluene (TFT)	80	60-130		

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Client: **URS GREINER WOODWARD-CLYDE**

Client Sample ID: **DP-2-5'**  
Lab Sample ID: **E91280216-004**

**BTEX + MTBE by 8021B**  
**Purge-and-Trap**

Batch: 9272234  
Matrix: Solid  
Units: ug/kg  
Dil. Factor: 1  
Method: CA LUFT  
Preparation: CA LUFT  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	0.90	5.0	0.50	J
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	1.2	5.0	0.50	J
m-Xylene & p-Xylene	4.5	10	1.0	J
o-Xylene	ND	5.0	1.0	
Xylenes (total)	5.1	15	2.0	J
Surrogate	% Rec.	Acceptance Limit	Qualifier	
a,a,a-Trifluorotoluene (TFT)	75	60-130		

Client Sample ID: **DP-2-5'**  
Lab Sample ID: **E91280216-004**

**Hydrocarbons, Volatile Petroleum (8015B)**  
**PURGE AND TRAP**

Batch: 9272231  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1  
Method: 8015B  
Preparation: 5030  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
a,a,a-Trifluorotoluene (TFT)	77	60-130		

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Client: **URS GREINER WOODWARD-CLYDE**

Client Sample ID: **DP-2-15'**  
Lab Sample ID: **E91280216-005**

**BTEX + MTBE by 8021B**  
*Purge-and-Trap*

Batch: 9272234  
Matrix: Solid  
Units: ug/kg  
Dil. Factor: 1  
Method: CA LUFT  
Preparation: CA LUFT  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	ND	5.0	0.50	
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	0.92	5.0	0.50	J
m-Xylene & p-Xylene	2.1	10	1.0	J
o-Xylene	ND	5.0	1.0	
Xylenes (total)	2.2	15	2.0	J
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	81	60-130		

Client Sample ID: **DP-2-15'**  
Lab Sample ID: **E91280216-005**

**Hydrocarbons, Volatile Petroleum (8015B)**  
**PURGE AND TRAP**

Batch: 9272231  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1  
Method: 8015B  
Preparation: 5030  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	73	60-130		

**Client:** URS GREINER WOODWARD-CLYDE

**Client Sample ID:** DP-2-30'  
**Lab Sample ID:** E9I280216-006

**BTEX + MTBE by 8021B**  
*Purge-and-Trap*

**Batch:** 9272234  
**Matrix:** Solid  
**Units:** ug/kg  
**Dil. Factor:** 1

**Method:** CA LUFT  
**Preparation:** CA LUFT

**Date Sampled:** 09/28/99  
**Date Prepared:** 09/29/99  
**Date Analyzed:** 09/29/99

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	ND	5.0	0.50	
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	1.2	5.0	0.50	J
m-Xylene & p-Xylene	2.2	10	1.0	J
o-Xylene	ND	5.0	1.0	
Xylenes (total)	2.4	15	2.0	J
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	85	60-130		

**Client Sample ID:** DP-2-30'  
**Lab Sample ID:** E9I280216-006

**Hydrocarbons, Volatile Petroleum (8015B)**  
**PURGE AND TRAP**

**Batch:** 9272231  
**Matrix:** Solid  
**Units:** mg/kg  
**Dil. Factor:** 1

**Method:** 8015B  
**Preparation:** 5030

**Date Sampled:** 09/28/99  
**Date Prepared:** 09/29/99  
**Date Analyzed:** 09/29/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	80	60-130		



# Analytical Data Report

Client: URS GREINER WOODWARD-CLYDE

Client Sample ID: DUP-DP-3-5A  
Lab Sample ID: E91280216-007

## BTEX + MTBE by 8021B Purge-and-Trap

Batch: 9272234  
Matrix: Solid  
Units: ug/kg  
Dil. Factor: 1

Method: CA LUFT  
Preparation: CA LUFT

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	ND	5.0	0.50	
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	0.88	5.0	0.50	J
m-Xylene & p-Xylene	2.4	10	1.0	J
o-Xylene	ND	5.0	1.0	
Xylenes (total)	2.7	15	2.0	J
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	79	60-130		

Client Sample ID: DUP-DP-3-5A  
Lab Sample ID: E91280216-007

## Hydrocarbons, Volatile Petroleum (8015B) PURGE AND TRAP

Batch: 9272231  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1

Method: 8015B  
Preparation: 5030

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	74	60-130		

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Client: **URS GREINER WOODWARD-CLYDE**

Client Sample ID: **DP-3-5'**  
Lab Sample ID: **E9I280216-008**

**BTEX + MTBE by 8021B**  
*Purge-and-Trap*

Batch: **9272234**  
Matrix: **Solid**  
Units: **ug/kg**  
Dil. Factor: **1**

Method: **CA LUFT**  
Preparation: **CA LUFT**

Date Sampled: **09/28/99**  
Date Prepared: **09/29/99**  
Date Analyzed: **09/30/99**

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	1.4	5.0	0.50	J
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	ND	5.0	0.50	
m-Xylene & p-Xylene	ND	10	1.0	
o-Xylene	2.9	5.0	1.0	J
Xylenes (total)	2.3	15	2.0	J
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	114	60-130		

Client Sample ID: **DP-3-5'**  
Lab Sample ID: **E9I280216-008**

**Hydrocarbons, Volatile Petroleum (8015B)**  
*PURGE AND TRAP*

Batch: **9272231**  
Matrix: **Solid**  
Units: **mg/kg**  
Dil. Factor: **1**

Method: **8015B**  
Preparation: **5030**

Date Sampled: **09/28/99**  
Date Prepared: **09/29/99**  
Date Analyzed: **09/29/99**

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	76	60-130		

Client: **URS GREINER WOODWARD-CLYDE**

Client Sample ID: **DP-3-15'**  
Lab Sample ID: **E91280216-009**

**BTEX + MTBE by 8021B**  
*Purge-and-Trap*

Batch: **9272234**  
Matrix: **Solid**  
Units: **ug/kg**  
Dil. Factor: **1**

Method: **CA LUFT**  
Preparation: **CA LUFT**

Date Sampled: **09/28/99**  
Date Prepared: **09/29/99**  
Date Analyzed: **09/30/99**

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	1.4	5.0	0.50	J
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	1.1	5.0	0.50	J
m-Xylene & p-Xylene	ND	10	1.0	
o-Xylene	2.9	5.0	1.0	J
Xylenes (total)	2.3	15	2.0	J
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	116	60-130		

Client Sample ID: **DP-3-15'**  
Lab Sample ID: **E91280216-009**

**Hydrocarbons, Volatile Petroleum (8015B)**  
*PURGE AND TRAP*

Batch: **9272231**  
Matrix: **Solid**  
Units: **mg/kg**  
Dil. Factor: **1**

Method: **8015B**  
Preparation: **5030**

Date Sampled: **09/28/99**  
Date Prepared: **09/29/99**  
Date Analyzed: **09/29/99**

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	79	60-130		

Client: URS GREINER WOODWARD-CLYDE

Client Sample ID: DP-3-30'  
Lab Sample ID: E9I280216-010

**BTEX + MTBE by 8021B**  
Purge-and-Trap

Batch: 9272234  
Matrix: Solid  
Units: ug/kg  
Dil. Factor: 1

Method: CA LUFT  
Preparation: CA LUFT

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	1.0	5.0	0.50	J
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	ND	5.0	0.50	
m-Xylene & p-Xylene	ND	10	1.0	
o-Xylene	2.8	5.0	1.0	J
Xylenes (total)	2.2	15	2.0	J
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	124	60-130		

Client Sample ID: DP-3-30'  
Lab Sample ID: E9I280216-010

**Hydrocarbons, Volatile Petroleum (8015B)**  
PURGE AND TRAP

Batch: 9272231  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1

Method: 8015B  
Preparation: 5030

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	83	60-130		

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# Analytical Data Report

Client: URS GREINER WOODWARD-CLYDE

Client Sample ID: DP-4-5'  
Lab Sample ID: E91280216-011

## BTEX + MTBE by 8021B Purge-and-Trap

Batch: 9272234  
Matrix: Solid  
Units: ug/kg  
Dil. Factor: 1

Method: CA LUFT  
Preparation: CA LUFT

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	ND	5.0	0.50	
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	ND	5.0	0.50	
m-Xylene & p-Xylene	1.4	10	1.0	J
o-Xylene	2.8	5.0	1.0	J
Xylenes (total)	3.7	15	2.0	J
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	122	60-130		

Client Sample ID: DP-4-5'  
Lab Sample ID: E91280216-011

## Hydrocarbons, Volatile Petroleum (8015B) PURGE AND TRAP

Batch: 9272231  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1

Method: 8015B  
Preparation: 5030

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	78	60-130		

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# Analytical Data Report

Client: URS GREINER WOODWARD-CLYDE

Client Sample ID: DP-4-15'  
Lab Sample ID: E9I280216-012

## BTEX + MTBE by 8021B Purge-and-Trap

Batch: 9272234  
Matrix: Solid  
Units: ug/kg  
Dil. Factor: 1

Method: CA LUFT  
Preparation: CA LUFT

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	ND	5.0	0.50	
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	ND	5.0	0.50	
m-Xylene & p-Xylene	1.4	10	1.0	J
o-Xylene	2.6	5.0	1.0	J
Xylenes (total)	3.8	15	2.0	J
Surrogate	% Rec.	Acceptance Limit	Qualifier	
a,a,a-Trifluorotoluene (TFT)	106	60-130		

Client Sample ID: DP-4-15'  
Lab Sample ID: E9I280216-012

## Hydrocarbons, Volatile Petroleum (8015B) PURGE AND TRAP

Batch: 9272234  
Matrix: Solid  
Units: mg/kg  
Dil. Factor: 1

Method: 8015B  
Preparation: 5030

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/29/99

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
Surrogate	% Rec.	Acceptance Limit	Qualifier	
a,a,a-Trifluorotoluene (TFT)	73	60-130		

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Client: **URS GREINER WOODWARD-CLYDE**

Client Sample ID: **DP-4-30'**  
Lab Sample ID: **E9I280216-013**

**BTEX + MTBE by 8021B**  
*Purge-and-Trap*

Batch: **9272234**  
Matrix: **Solid**  
Units: **ug/kg**  
Dil. Factor: **1**

Method: **CA LUFT**  
Preparation: **CA LUFT**

Date Sampled: **09/28/99**  
Date Prepared: **09/29/99**  
Date Analyzed: **09/30/99**

Analyte	Result	RL	MDL	Qualifier
Benzene	ND	5.0	0.50	
Ethylbenzene	0.98	5.0	0.50	J
Methyl tert-butyl ether	ND	5.0	1.0	
Toluene	ND	5.0	0.50	
m-Xylene & p-Xylene	ND	10	1.0	
o-Xylene	2.4	5.0	1.0	J
Xylenes (total)	ND	15	2.0	
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	119	60-130		

Client Sample ID: **DP-4-30'**  
Lab Sample ID: **E9I280216-013**

**Hydrocarbons, Volatile Petroleum (8015B)**  
*PURGE AND TRAP*

Batch: **9272231**  
Matrix: **Solid**  
Units: **mg/kg**  
Dil. Factor: **1**

Method: **8015B**  
Preparation: **5030**

Date Sampled: **09/28/99**  
Date Prepared: **09/29/99**  
Date Analyzed: **09/29/99**

Analyte	Result	RL	MDL	Qualifier
TPH (as Gasoline)	ND	1.0	0.10	
Unknown Hydrocarbon	ND	1.0	0.10	
<b>Surrogate</b>	<b>% Rec.</b>	<b>Acceptance Limit</b>	<b>Qualifier</b>	
a,a,a-Trifluorotoluene (TFT)	77	60-130		

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Client: URS GREINER WOODWARD-CLYDE

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# Metals

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# Analytical Data Report

Client: URS GREINER WOODWARD-CLYDE

Client Sample ID: DP-1-5'  
Lab Sample ID: E91280216-001

**Inductively Coupled Plasma (6010B)  
Acid Digestion of Sediments, Sludges, Soils**

Batch: 9272257  
Matrix: Solid  
Units: mg/kg

Method: 6010B  
Preparation: 3050B

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	28.9	2.5	0.40	1	
Lead	8.4	0.50	0.20	1	

Client Sample ID: DP-1-15'  
Lab Sample ID: E91280216-002

**Inductively Coupled Plasma (6010B)  
Acid Digestion of Sediments, Sludges, Soils**

Batch: 9272257  
Matrix: Solid  
Units: mg/kg

Method: 6010B  
Preparation: 3050B

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	32.3	2.5	0.40	1	
Lead	4.4	0.50	0.20	1	

Client Sample ID: DP-1-30'  
Lab Sample ID: E91280216-003

**Inductively Coupled Plasma (6010B)  
Acid Digestion of Sediments, Sludges, Soils**

Batch: 9272257  
Matrix: Solid  
Units: mg/kg

Method: 6010B  
Preparation: 3050B

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	33.3	2.5	0.40	1	
Lead	5.0	0.50	0.20	1	

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Client: **URS GREINER WOODWARD-CLYDE**

Client Sample ID: **DP-2-5'**  
Lab Sample ID: **E91280216-004**

**Inductively Coupled Plasma (6010B)**  
**Acid Digestion of Sediments, Sludges, Soils**

Batch: 9272257  
Matrix: Solid  
Units: mg/kg  
Method: 6010B  
Preparation: 3050B  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	34.3	2.5	0.40	1	
Lead	9.4	0.50	0.20	1	

Client Sample ID: **DP-2-15'**  
Lab Sample ID: **E91280216-005**

**Inductively Coupled Plasma (6010B)**  
**Acid Digestion of Sediments, Sludges, Soils**

Batch: 9272257  
Matrix: Solid  
Units: mg/kg  
Method: 6010B  
Preparation: 3050B  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	30.4	2.5	0.40	1	
Lead	17.9	0.50	0.20	1	

Client Sample ID: **DP-2-30'**  
Lab Sample ID: **E91280216-006**

**Inductively Coupled Plasma (6010B)**  
**Acid Digestion of Sediments, Sludges, Soils**

Batch: 9272257  
Matrix: Solid  
Units: mg/kg  
Method: 6010B  
Preparation: 3050B  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	23.1	2.5	0.40	1	
Lead	4.6	0.50	0.20	1	

Client: URS GREINER WOODWARD-CLYDE

Client Sample ID: DUP-DP-3-5A  
Lab Sample ID: E91280216-007

**Inductively Coupled Plasma (6010B)  
Acid Digestion of Sediments, Sludges, Soils**

Batch: 9272257  
Matrix: Solid  
Units: mg/kg

Method: 6010B  
Preparation: 3050B

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	30.8	2.5	0.40	1	
Lead	16.5	0.50	0.20	1	

Client Sample ID: DP-3-5'  
Lab Sample ID: E91280216-008

**Inductively Coupled Plasma (6010B)  
Acid Digestion of Sediments, Sludges, Soils**

Batch: 9272257  
Matrix: Solid  
Units: mg/kg

Method: 6010B  
Preparation: 3050B

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	47.7	2.5	0.40	1	
Lead	5.6	0.50	0.20	1	

Client Sample ID: DP-3-15'  
Lab Sample ID: E91280216-009

**Inductively Coupled Plasma (6010B)  
Acid Digestion of Sediments, Sludges, Soils**

Batch: 9272257  
Matrix: Solid  
Units: mg/kg

Method: 6010B  
Preparation: 3050B

Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	34.0	2.5	0.40	1	
Lead	5.3	0.50	0.20	1	

Client: **URS GREINER WOODWARD-CLYDE**

Client Sample ID: **DP-3-30'**  
Lab Sample ID: **E9I280216-010**

**Inductively Coupled Plasma (6010B)**  
**Acid Digestion of Sediments, Sludges, Soils**

Batch: 9272257  
Matrix: Solid  
Units: mg/kg  
Method: 6010B  
Preparation: 3050B  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	13.1	2.5	0.40	1	
Lead	3.5	0.50	0.20	1	

Client Sample ID: **DP-4-5'**  
Lab Sample ID: **E9I280216-011**

**Inductively Coupled Plasma (6010B)**  
**Acid Digestion of Sediments, Sludges, Soils**

Batch: 9272257  
Matrix: Solid  
Units: mg/kg  
Method: 6010B  
Preparation: 3050B  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	31.7	2.5	0.40	1	
Lead	4.9	0.50	0.20	1	

Client Sample ID: **DP-4-15'**  
Lab Sample ID: **E9I280216-012**

**Inductively Coupled Plasma (6010B)**  
**Acid Digestion of Sediments, Sludges, Soils**

Batch: 9272257  
Matrix: Solid  
Units: mg/kg  
Method: 6010B  
Preparation: 3050B  
Date Sampled: 09/28/99  
Date Prepared: 09/29/99  
Date Analyzed: 09/30/99

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	16.2	2.5	0.40	1	
Lead	4.1	0.50	0.20	1	

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# Analytical Data Report

Client: **URS GREINER WOODWARD-CLYDE**

Client Sample ID: **DP-4-30'**

Lab Sample ID: **E91280216-013**

**Inductively Coupled Plasma (6010B)  
Acid Digestion of Sediments, Sludges, Soils**

Batch: **9272257**

Matrix: **Solid**

Units: **mg/kg**

Method: **6010B**

Preparation: **3050B**

Date Sampled: **09/28/99**

Date Prepared: **09/29/99**

Date Analyzed: **09/30/99**

Analyte	Result	RL	MDL	Dil. Factor	Qualifier
Copper	19.5	2.5	0.40	1	
Lead	5.2	0.50	0.20	1	

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Quality Control Batch Assignment Report

<u>Lab Sample ID</u>	<u>Matrix</u>	<u>Method</u>	<u>Batch ID</u>	<u>MS Run Number</u>
<b>Metals</b>				
E91280216-001	SOLID	6010B	9272257	9272094
E91280216-002	SOLID	6010B	9272257	9272094
E91280216-003	SOLID	6010B	9272257	9272094
E91280216-004	SOLID	6010B	9272257	9272094
E91280216-005	SOLID	6010B	9272257	9272094
E91280216-006	SOLID	6010B	9272257	9272094
E91280216-007	SOLID	6010B	9272257	9272094
E91280216-008	SOLID	6010B	9272257	9272094
E91280216-009	SOLID	6010B	9272257	9272094
E91280216-010	SOLID	6010B	9272257	9272094
E91280216-011	SOLID	6010B	9272257	9272094
E91280216-012	SOLID	6010B	9272257	9272094
E91280216-013	SOLID	6010B	9272257	9272094

<b>C Semivolatiles</b>				
E91280216-001	SOLID	8015B	9272240	9272080
E91280216-002	SOLID	8015B	9272240	9272080
E91280216-003	SOLID	8015B	9272240	9272080
E91280216-004	SOLID	8015B	9272240	9272080
E91280216-005	SOLID	8015B	9272240	9272080
E91280216-006	SOLID	8015B	9272240	9272080
E91280216-007	SOLID	8015B	9272240	9272080
E91280216-008	SOLID	8015B	9272240	9272080
E91280216-009	SOLID	8015B	9272240	9272080
E91280216-010	SOLID	8015B	9272240	9272080
E91280216-011	SOLID	8015B	9272240	9272080
E91280216-012	SOLID	8015B	9272240	9272080
E91280216-013	SOLID	8015B	9272240	9272080

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Quality Control Batch Assignment Report

<u>Lab Sample ID</u>	<u>Matrix</u>	<u>Method</u>	<u>Batch ID</u>	<u>MS Run Number</u>
<b>GC Volatiles</b>				
E91280216-001	SOLID	8015B	9272231	9272105
E91280216-001		CA LUFT	9272234	9272087
E91280216-002	SOLID	8015B	9272231	9272105
E91280216-002		CA LUFT	9272234	9272087
E91280216-003	SOLID	8015B	9272231	9272105
E91280216-003		CA LUFT	9272234	9272087
E91280216-004	SOLID	8015B	9272231	9272105
E91280216-004		CA LUFT	9272234	9272087
E91280216-005	SOLID	8015B	9272231	9272105
E91280216-005		CA LUFT	9272234	9272087
E91280216-006	SOLID	8015B	9272231	9272105
E91280216-006		CA LUFT	9272234	9272087
E91280216-007	SOLID	8015B	9272231	9272105
E91280216-007		CA LUFT	9272234	9272087
E91280216-008	SOLID	8015B	9272231	9272105
E91280216-008		CA LUFT	9272234	9272087
E91280216-009	SOLID	8015B	9272231	9272105
E91280216-009		CA LUFT	9272234	9272087
E91280216-010	SOLID	8015B	9272231	9272105
E91280216-010		CA LUFT	9272234	9272087
E91280216-011	SOLID	8015B	9272231	9272105
E91280216-011		CA LUFT	9272234	9272087
E91280216-012	SOLID	8015B	9272231	9272105
E91280216-012		CA LUFT	9272234	9272087
E91280216-013	SOLID	8015B	9272231	9272105
E91280216-013		CA LUFT	9272234	9272087

**Table of Definitions**

<u>Qualfier</u>	<u>Area</u>	<u>Definitlon</u>
J	GC Volatiles	Estimated result, Result is less than RL.

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# Metals

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**Batch ID: 9272257**  
**Inductively Coupled Plasma (6010B)**

**Method Blank**

Lab Sample ID: E91290000-257B  
Matrix: Solid  
Units: mg/kg

Analyte	Result	RL	Qual.	Date Analyzed
Copper	ND	2.5		09/30/99
Lead	ND	0.50		09/30/99

**Laboratory Control Sample**

Lab Sample ID: E91290000-257C  
Matrix: Solid  
Units: mg/kg

Analyte	Spike Amount	Result	% Rec.	QC Limits	Qualifier
Copper	25.0	22.5	90	80-120	
Lead	50.0	46.8	93	80-120	

**Matrix Spike / Matrix Spike Duplicate**

Lab Sample ID: E91280216-003S  
Matrix: Solid  
Units: mg/kg

Analyte	Sample Result	Spike Amount	Result		% Rec.		Control Limits	RPD	Qualifier	
			MS	MSD	MS	MSD			MS	MSD
Copper	33.3	25.0	57.1	58.6	95	101	80-120	2.6		
Lead	5.0	50.0	51.3	52.0	93	94	80-120	1.3		

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# GC Semivolatiles

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Batch ID: 9272240

Hydrocarbons, Extractable Petroleum (8015B)

**Method Blank**

Lab Sample ID: E91290000-240B  
Matrix: Solid  
Units: mg/kg

Analyte	Result	RL	Qual.	Date Analyzed
TPH (as Diesel)	ND	10		09/30/99
Unknown Hydrocarbon	ND	10		09/30/99
Surrogate	% Rec.	Acceptance Limit	Qualifier	
Benzo(a)pyrene	92	60-140		

**Laboratory Control Sample**

Lab Sample ID: E91290000-240C  
Matrix: Solid  
Units: mg/kg

Analyte	Spike Amount	Result	% Rec.	QC Limits	Qualifier
TPH (as Diesel)	250	236	94	60-140	
Surrogate					
Benzo(a)pyrene	12.5	11.9	95	60-140	

**Matrix Spike / Matrix Spike Duplicate**

Lab Sample ID: E91280216-001S  
Matrix: Solid  
Units: mg/kg

Analyte	Sample Result	Spike Amount	Result		% Rec.		Control Limits	RPD	Qualifier	
			MS	MSD	MS	MSD			MS	MSD
TPH (as Diesel)	ND	250	179	235	72	94	60-140	27		
Surrogate										
Benzo(a)pyrene	11	12.5	9.23	11.7	74	93	60-140			

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# GC Volatiles

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# Quality Control Reports

**Batch ID: 9272234**  
**BTEX + MTBE by 8021B**

## Method Blank

Lab Sample ID: E91290000-234B  
Matrix: Solid  
Units: ug/kg

Analyte	Result	RL	Qual.	Date Analyzed
Benzene	ND	5.0		09/29/99
Ethylbenzene	1.1	5.0	J	09/29/99
Methyl tert-butyl ether	ND	5.0		09/29/99
Toluene	2.1	5.0	J	09/29/99
m-Xylene & p-Xylene	4.5	10	J	09/29/99
o-Xylene	ND	5.0		09/29/99
Xylenes (total)	5.2	15	J	09/29/99

Surrogate	% Rec.	Acceptance Limit	Qualifier
a,a,a-Trifluorotoluene (TFT)	89	60-130	

## Laboratory Control Sample

Lab Sample ID: E91290000-234C  
Matrix: Solid  
Units: ug/kg

Analyte	Spike Amount	Result	% Rec.	QC Limits	Qualifier
Benzene	50.0	37.1	74	60-130	
Ethylbenzene	50.0	38.8	78	60-130	
Toluene	50.0	40.7	81	60-130	
m-Xylene & p-Xylene	100	78.5	78	60-130	
o-Xylene	50.0	38.4	77	60-130	
Xylenes (total)	150	117	78	60-130	

Surrogate	% Rec.	Acceptance Limit	Qualifier
a,a,a-Trifluorotoluene (TFT)	83	60-130	

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Batch ID: 9272234  
BTEX + MTBE by 8021B

**Matrix Spike / Matrix Spike Duplicate**

Lab Sample ID E9J280216-001S  
Matrix: Solid  
Units: ug/kg

Analyte	Sample Result	Spike Amount	Result		% Rec.		Control Limits	RPD	Qualifier	
			MS	MSD	MS	MSD			MS	MSD
Benzene	ND	50.0	49.7	48.2	99	96	60-130	3.0		
Ethylbenzene	1.1	50.0	51.5	47.5	101	93	60-130	8.2		
Toluene	1.6	50.0	52.6	50.1	102	97	60-130	4.9		
m-Xylene & p-Xylene	4.7	100	105	95.6	100	91	60-130	9.0		
o-Xylene	ND	50.0	53.9	49.8	108	100	60-130	8.0		
Xylenes (total)	5.4	150	158	145	102	93	60-130	8.7		

**Surrogate**

a,a,a-Trifluorotoluene (TFT) 170 200 191 163 96 82 60-130



# Quality Control Reports

Batch ID: 9272231  
Hydrocarbons, Volatile Petroleum (8015B)

## Method Blank

Lab Sample ID: E91290000-231B  
Matrix: Solid  
Units: mg/kg

Analyte	Result	RL	Qual.	Date Analyzed
TPH (as Gasoline)	ND	1.0		09/29/99
Unknown Hydrocarbon	ND	1.0		09/29/99
Surrogate	% Rec.	Acceptance Limit	Qualifier	
a,a,a-Trifluorotoluene (TFT)	84	60-130		

## Laboratory Control Sample

Lab Sample ID: E91290000-231C  
Matrix: Solid  
Units: mg/kg

Analyte	Spike Amount	Result	% Rec.	QC Limits	Qualifier
TPH (as Gasoline)	5.00	4.56	91	60-130	
Surrogate					
a,a,a-Trifluorotoluene (TFT)	0.200	0.225	113	60-130	

## Matrix Spike / Matrix Spike Duplicate

Lab Sample ID: E91280216-004S  
Matrix: Solid  
Units: mg/kg

Analyte	Sample Spike Result	Spike Amount	Result		% Rec.		Control Limits	RPD	Qualifier	
			MS	MSD	MS	MSD			MS	MSD
TPH (as Gasoline)	ND	5.00	4.06	4.11	81	82	60-130	1.2		
Surrogate										
a,a,a-Trifluorotoluene (TFT)	0.15	0.200	0.214	0.215	107	108	60-130			

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**Appendix B**

**Boring Logs and Equipment Calibration Forms**

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**Appendix B**  
**Boring Logs and Equipment Calibration Forms**

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<b>Project:</b> WA HOUSING <b>Project Location:</b> 11301 WELLS AVE BLVD., LA, CA <b>Project Number:</b> 55000000000000000000	<h2 style="margin: 0;">Log of Boring</h2> <p style="margin: 0;">Sheet 1 of 1</p>
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Date(s) Drilled: 7/22/05	Logged By: S. ENGBEL	Checked By:
Drilling Method: DIRECT PUSH	Drill Bit Size/Type: 2" LARGE EDGE	Approx. Surface Elevation (feet):
Drill Rig Type: LAG - CORE LOG	Drilled By: GREGG MILLER	Total Depth Drilled (feet): 30
Groundwater Level (feet, bgs):	Competition: 24 Hours	Number of Samples: Disturbed: Undisturbed: 3
Diameter of Hole (inches):	Diameter of Well (inches):	Sampler Type: LARGE CORE
Type of Sand Pack:	Type/Thickness of Seals: BENTONITE - 2" GAP BACKFILL (MED)	Screen Perforation:
Comments:		

Depth, feet	Elevation, feet	SAMPLES				MATERIAL DESCRIPTION	Well Completion Log	OVA (ppm)			REMARKS
		Type	Number	Blows/foot	Graphic Log			Headspace	Background	Drilling Rate (l/min)	
0											EXPOSED TO AIR
5		R1				MOIST, LIGHT BROWN, FINE SAND, SILTY CLAY WITH TRACE SILT AND CLAY. SILENT TO COARSE GRAINED, GROUND. SLIGHT ORGANIC ODOR		210	0	0510	
15		R2				DRY, DARK BROWN, MEDIUM SAND (SILT) WITH TRACE SILT AND CLAY. SILENT TO COARSE GRAINED, GROUND. 1/4" TRACE WOOD DEBRIS (BACKFILL MATERIAL)		120	0	0512	
30		R3				DRY, DARK BROWN CLAY, MEDIUM SAND WITH TRACE SILT AND CLAY. SILENT TO COARSE GRAINED, TRACE GRAVEL TO 1/4"					

Project: 14-10000  
 Project Location: 1130 WILSHIRE BLVD, LA, CA  
 Project Number: 27-997-0000, 0'

Log of Boring 3-5  
 Sheet 1 of 1

Date(s) Drilled: 6/26/00	Logged By: J. ENGELS	Checked By:
Drilling Method: DIRECT DRIVE	Drill Bit Size/Type: 4.5" PIPE - 3"	Approx. Surface Elevation (feet):
Drill Rig Type: EAP - DIRECT DRIVE	Drilled By: S. H. BENTONITE	Total Depth Drilled (feet): 30
Groundwater Level (feet, bgs):	Completion: 24 Hours	Number of Samples: Disturbed: Undisturbed: 2
Diameter of Hole (inches): 2"	Diameter of Well (inches):	Type of Well Casing: Screen Perforation
Type of Sand Pack:	Type/Thickness of Seal(s): BENTONITE (HIP-BACKELL (MED))	
Comments:		

Depth, feet	Elevation, feet	SAMPLES		MATERIAL DESCRIPTION	Well Completion Log	OVA (ppm)			REMARKS
		Type	Number			Blows/foot	Graphic Log	Headspace	
0									DRILLING IN PROGRESS
5		R	1			10	0	1025	
15		R	2			22	0	1025	
30		R	3			7	0	1025	

Project: # 11301 WILSHIRE BLVD., LA, CA  
 Project Location: 11301 WILSHIRE BLVD., LA, CA  
 Project Number: 57-09970050-01

Log of Boring  
 Sheet 1 of 1

Date(s) Drilled: 9/28/94	Logged By: J. ENBELS	Checked By:
Drilling Method: DIRECT PUSH	Drill Bit Size/Type: 2" LARGE BORE	Approx. Surface Elevation (feet):
Drill Rig Type: AR-DIRECT PUSH	Drilled By: GREGG	Total Depth Drilled (feet): 30
Groundwater Level (feet, bgs): First Completion: 24 Hours	Number of Samples: Disturbed: Undisturbed: 3	Sampler Type: LARGE BORE
Diameter of Hole (inches): 2" Diameter of Well (inches):	Type of Well Casing:	Screen Perforation:
Type of Sand Pack:	Type/Thickness of Seal: BENTONITE CHIT BACKFILL (MED.)	
Comments:		

Depth, feet	Elevation, feet	SAMPLES			MATERIAL DESCRIPTION	Well Completion Log	OVA (ppm)			REMARKS
		Type	Number	Blows/foot			Graphic Log	Headspace	Background	
0										DEPTH IN CHECKED
5		R	1		FINEST, BROWN, SANDY CLAY (CL) FINE GRAINED, WITH TRACE FINE SAND, AND GRAVEL TO 1/4" WOOD DEBRIS, CONCRETE AND SHALE FRAGMENTS (BACKFILL MATERIAL)		10	0	1053	TAKE DUPLICATE SAMPLE "DP-3-5" "DUP-DP-3-5"
		R	2				15	0	1057	
15		R			↓ SAME, LESS GRAVEL (BACKFILL MATERIAL)		8	0	1110	
30		R			SOME LITTLE GRAVEL, DEBRIS FRAGMENTS (BACKFILL MATERIAL)		200	0	1145	



Project: 17 UNOSTAL  
 Project Location: 11001 WATSON RD. LA CA  
 Project Number: 57.09970035

Log of Boring 20

Sheet 1 of     

Date(s) Drilled	<u>01/21/90</u>	Logged By	<u>J. ENGELS</u>	Checked By	
Drilling Method	<u>DIRECT PUSH</u>	Drill Bit Size/Type	<u>2" LARGE BIT</u>	Approx. Surface Elevation (feet)	
Drill Rig Type	<u>LAR - DIRECT PUSH</u>	Drilled By	<u>GREGG DRILLING</u>	Total Depth Drilled (feet)	<u>30</u>
Groundwater Level (feet, bgs)	First Completion: <u>24 Hours</u>	Number of Samples	Disturbed: <u>-</u> Undisturbed: <u>-</u>	Sampler Type	<u>LARGE BIT</u>
Diameter of Hole (inches)	<u>2"</u>	Diameter of Well Casing	Type of Well Casing	Screen Perforation	
Type of Sand Pack		Type/Thickness of Seals	<u>BENTONITE CAFF BACKFILL (MED.)</u>		
Comments					

Depth, feet	Elevation, feet	SAMPLES			MATERIAL DESCRIPTION	Well Completion Log	OVA (ppm)			REMARKS
		Type	Number	Blows/foot			Graphic Log	Headspace	Background	
0										DRILLING END CHECKED
5		R	1		MOIST BROWN, SANDY CLAY (CL) MED TO FINE GRAINED WITH TRACE COARSE SAND, TRACE GRAVEL TO 1/4" WOOD DEBRIS, BRICK FRAGMENTS, SHALE FRAGMENTS, (BACKFILL MATERIAL)		13	0	1203	
15		R	2		↓ SAME		19	0	1215	
30		R	3		MOIST, SANDY, POORLY GRADED SAND (SF) WITH PEBBLES AND GRAVEL TO 1/4" SHALE FRAGMENTS		0	0	1225	



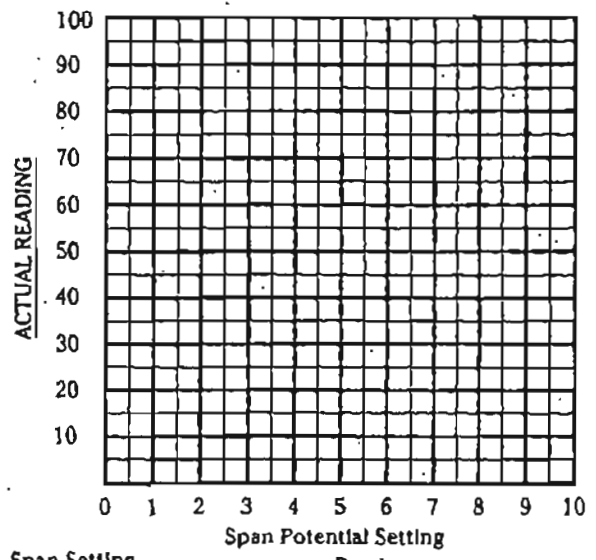
Instrument Description OVA 12E

Mfg. Serial # \_\_\_\_\_ Calibration Date 9-27-99

HAZCO Serial # 2395 Technician M

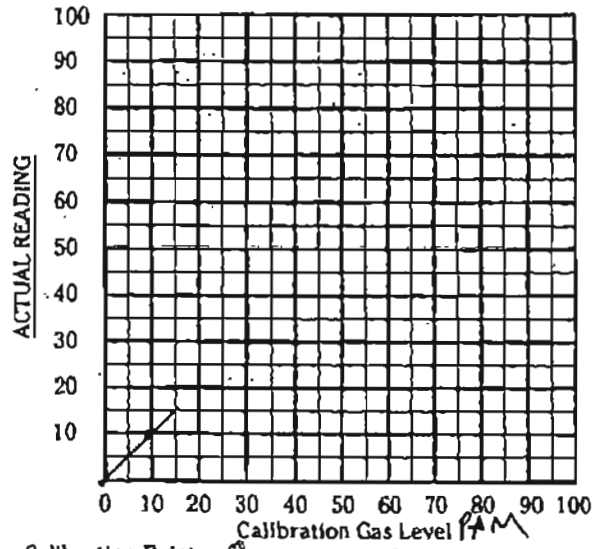
Temperature 71 Humidity 51 Barometric Pressure \_\_\_\_\_

SPAN POTENTIOMETER LINEARITY



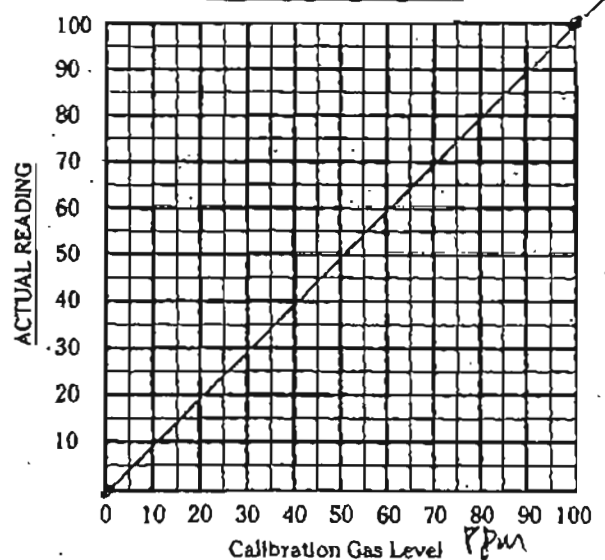
Span Setting \_\_\_\_\_ Reader \_\_\_\_\_  
Span Setting \_\_\_\_\_ Reader \_\_\_\_\_  
Span Setting \_\_\_\_\_ Reader \_\_\_\_\_  
Lot # \_\_\_\_\_ Gas Applied \_\_\_\_\_

STANDARD CALIBRATION



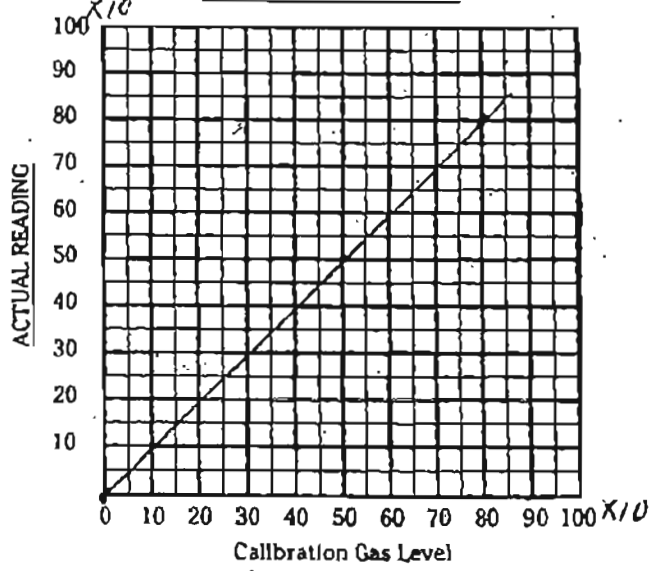
Calibration Point 0 Lot # \_\_\_\_\_  
Calibration Point 0-10 Lot # \_\_\_\_\_  
Calibration Point 10 Lot # \_\_\_\_\_  
Gas Applied METHANE

STANDARD CALIBRATION



Calibration Point 0 Lot # \_\_\_\_\_  
Calibration Point 0-100 Lot # \_\_\_\_\_  
Calibration Point 100 Lot # \_\_\_\_\_  
Gas Applied METHANE

STANDARD CALIBRATION



Calibration Point 0 Lot # \_\_\_\_\_  
Calibration Point 0-800 Lot # \_\_\_\_\_  
Calibration Point 800 Lot # \_\_\_\_\_  
Gas Applied METHANE

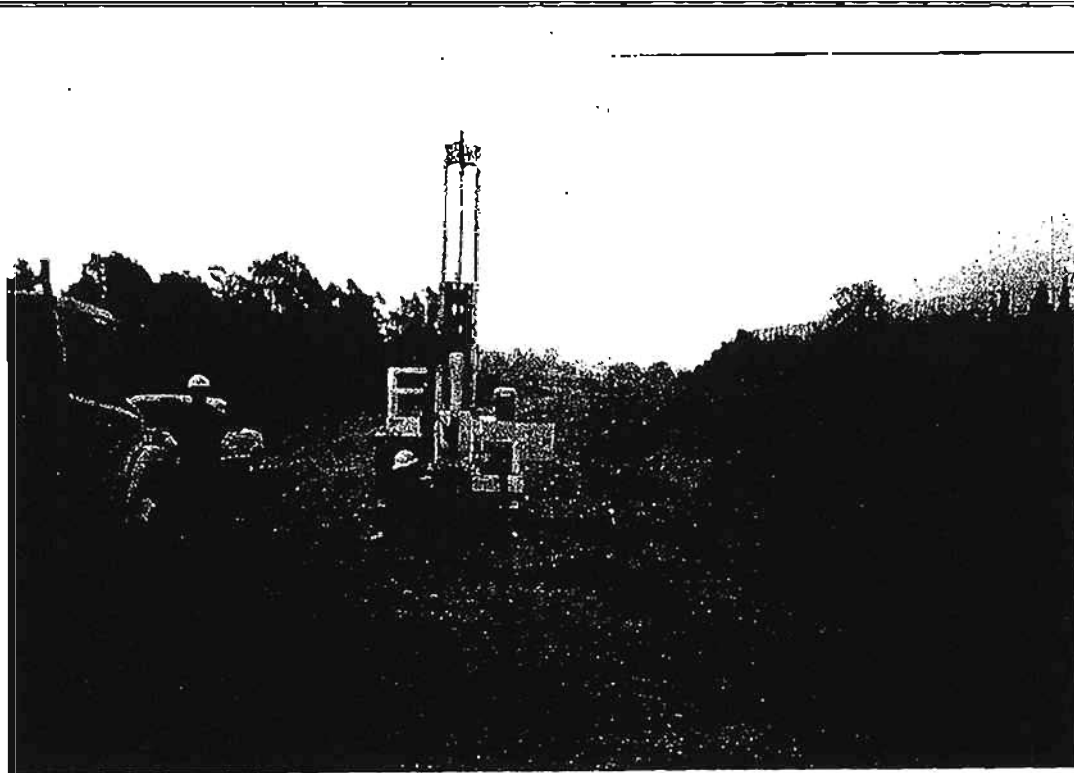


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**Appendix C**  
**Photo Documentation**

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**Photo Documentation**

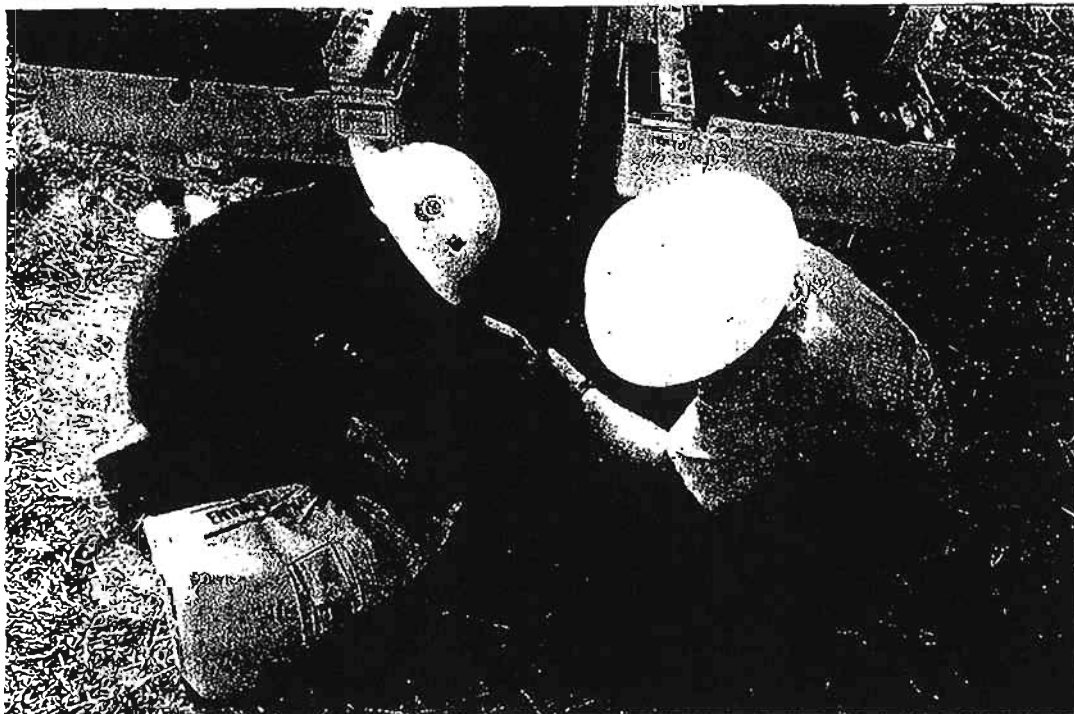
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Date: 9/28/99

Photograph: 1

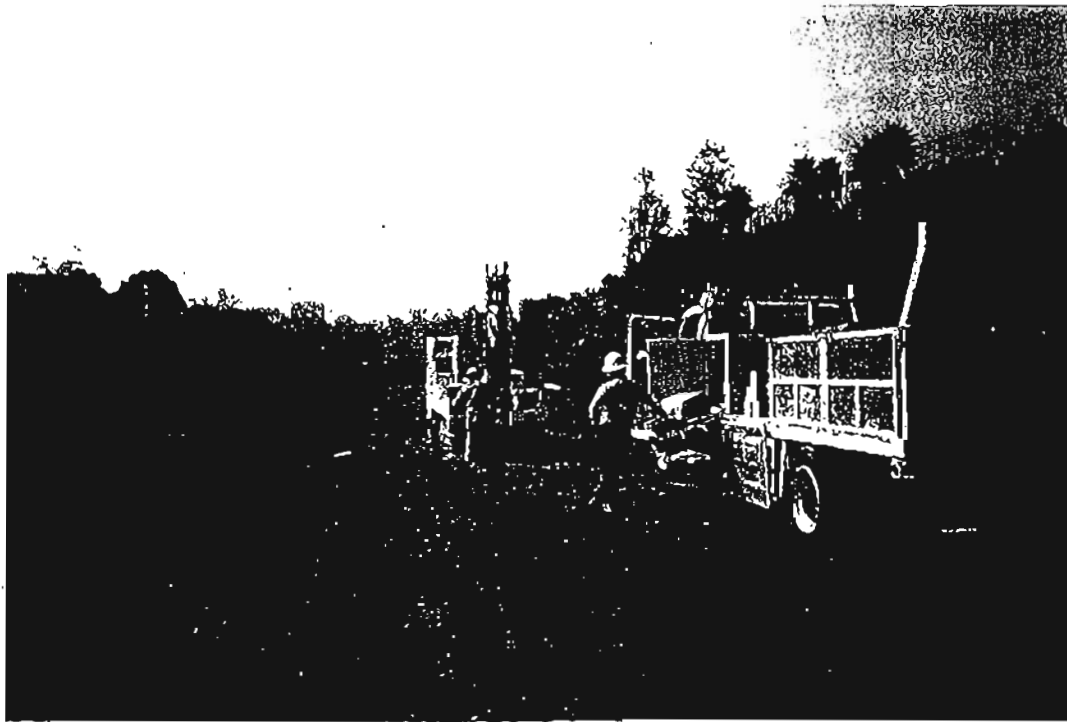
Comments:  
Collecting soil  
samples at DP-1  
boring location  
with the direct  
push rig.



Date: 9/28/99

Photograph: 2

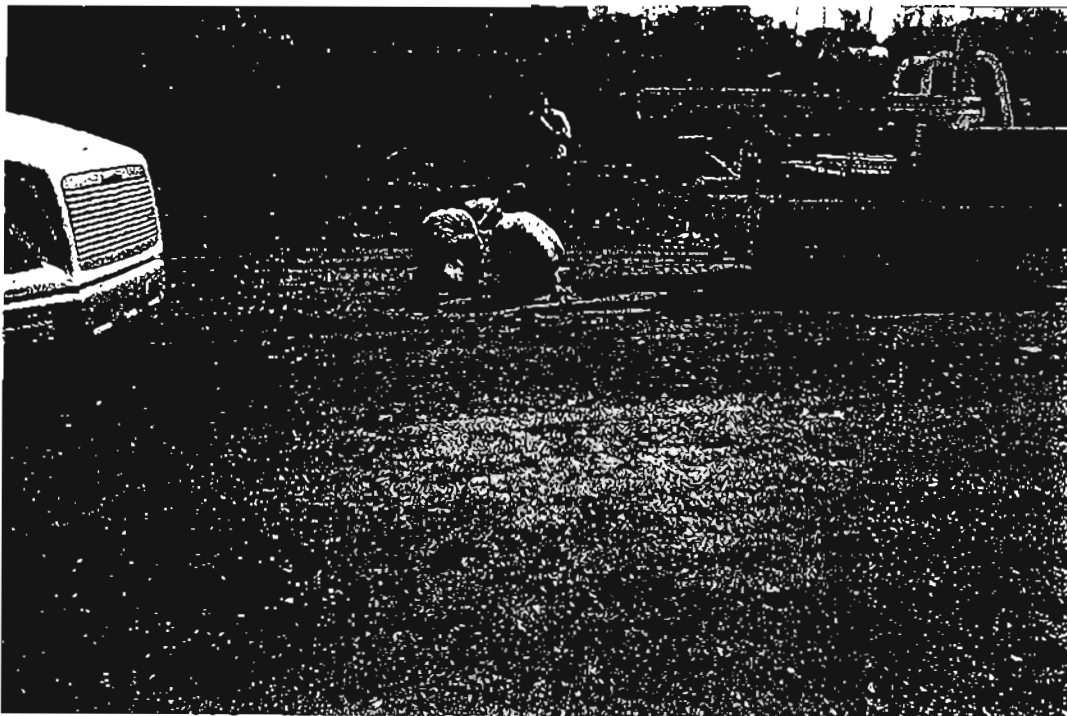
Comments:  
Backfilling DP-1  
boring location  
with hydrated  
bentonite chips.



Date: 9/28/99

Photograph: 3

Comments:  
Collecting soil  
samples at DP-2  
boring location  
with the direct  
push rig.



Date: 9/28/99

Photograph: 4

Comments:  
Backfilling DP-2  
boring location  
with hydrated  
bentonite chips.

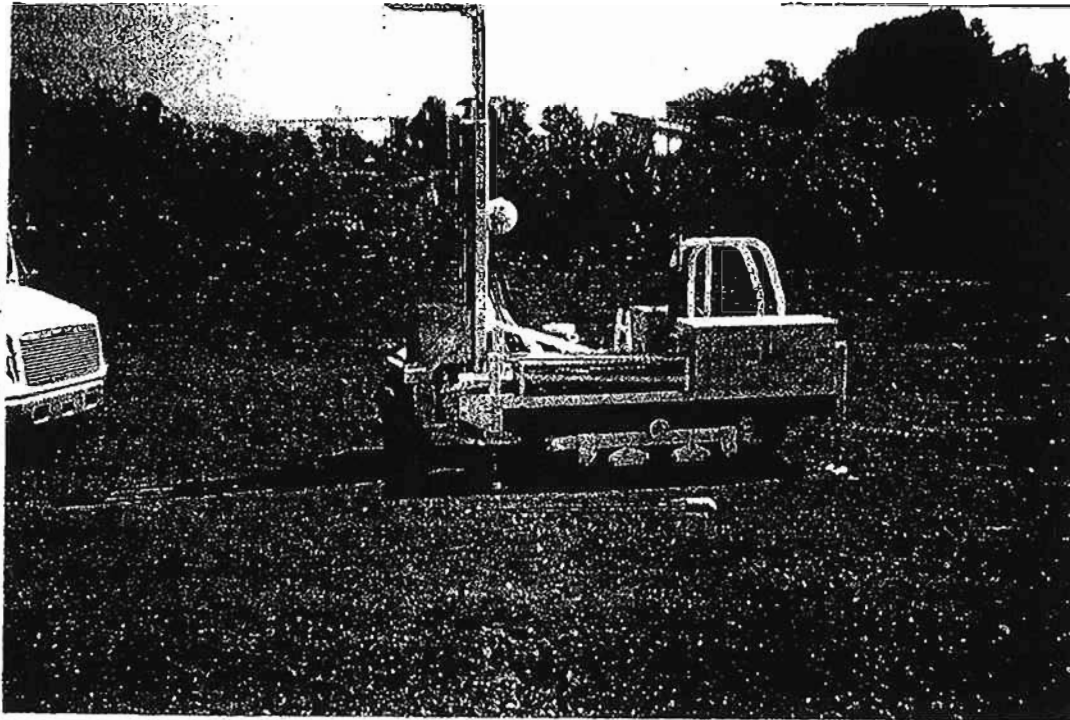


Date: 9/28/99

Photograph: 5

Comments:  
Collecting soil  
samples at DP-3  
boring location  
with the direct  
push rig.





Date: 9/28/99

Photograph: 6

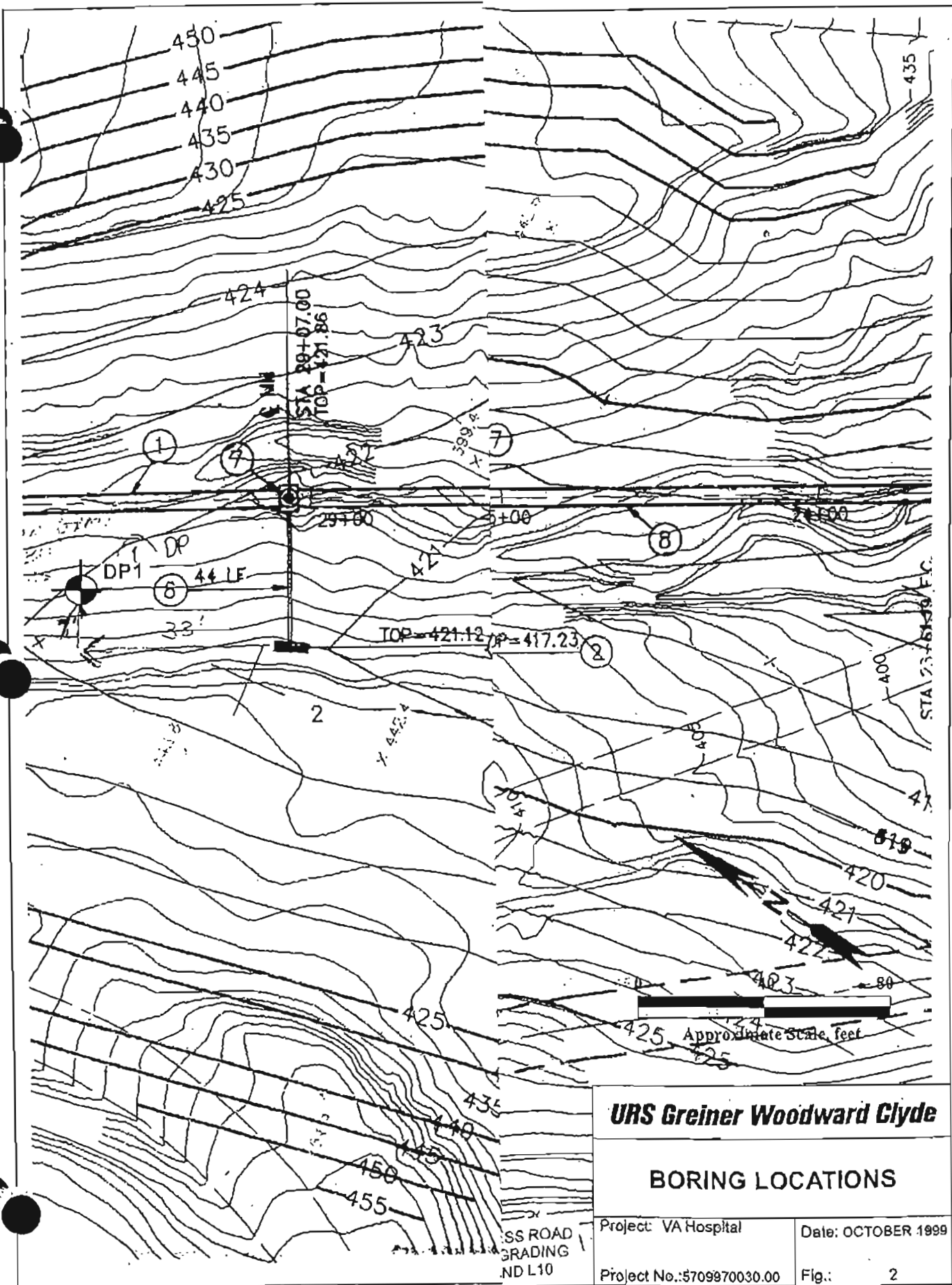
Comments:  
Collecting soil  
samples at DP-4  
boring location  
with the direct  
push rig.

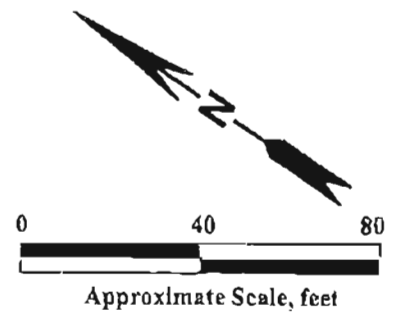
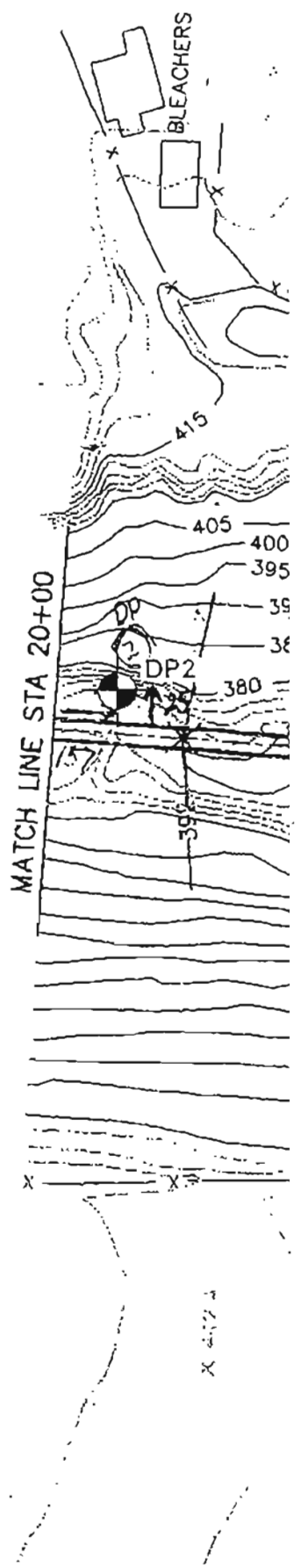


Date: 9/28/99

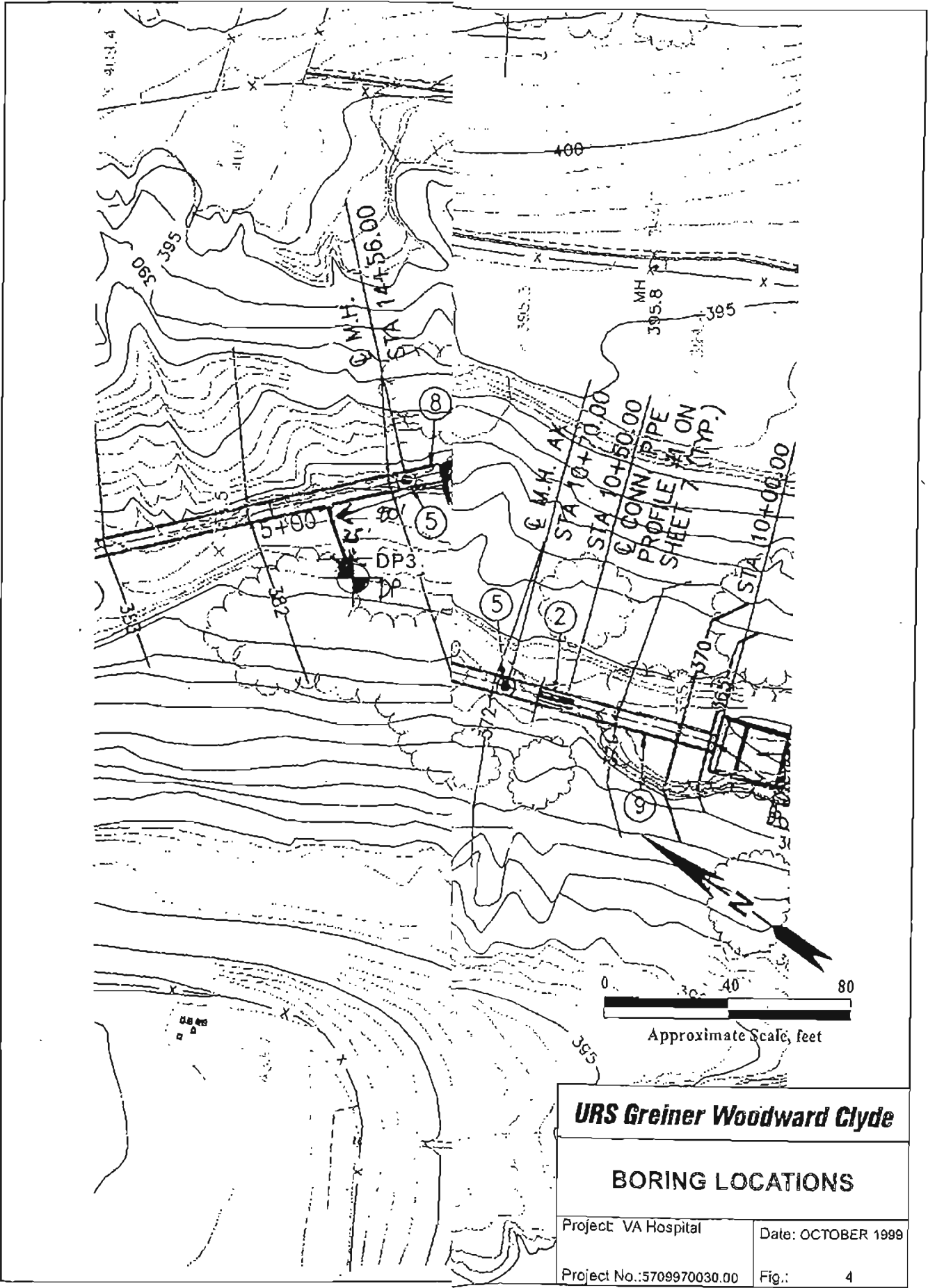
Photograph: 7

Comments:  
Preparing soil  
samples for  
laboratory  
analysis.





<b>URS Greiner Woodward Clyde</b>	
<b>BORING LOCATIONS</b>	
Project: VA Hospital	Date: OCTOBER 1999
Project No.: 5709970030.00	Fig.: 3



<b>URS Greiner Woodward Clyde</b>	
<b>BORING LOCATIONS</b>	
Project: VA Hospital	Date: OCTOBER 1999
Project No.: 5709970030.00	Fig.: 4