

**CLOSURE REPORT  
PRODUCT LINE REPLACEMENT  
UNOCAL SERVICE STATION NO. 3770  
3020 GROVE WAY  
CASTRO VALLEY, CALIFORNIA**

prepared for

**UNOCAL CORPORATE ENVIRONMENTAL  
REMEDICATION AND TECHNOLOGY**  
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January 4, 1995  
9580601300

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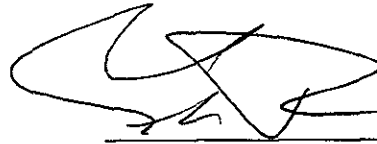
**STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION**

The information provided in this report is intended exclusively for the Unocal Corporate Remediation and Technology (Unocal) for the evaluation of petroleum hydrocarbon occurrence as it pertains to the property at 3020 Grove Way in Castro Valley, California, at the time the data were collected. The professional services provided have been performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted will identify any or all sources or locations of contamination.

This report is issued with the understanding that Unocal is responsible for ensuring that the information contained in this report is brought to the attention of the appropriate regulatory agency. The enclosed report has been reviewed by a Engineering Geologist, certified in the State of California, whose signature and certification number appear below.



Michael Guy  
Senior Staff Geologist



Frank Poss  
Regional Manager



Warren W. Gross, C.E.G. # 1528  
Associate Geologist



## 1.0 INTRODUCTION

This report summarizes the work associated with the replacement of the product lines at Unocal Service Station Number 3770 (site) at 3020 Grove Way in Castro Valley, California (Figure 1). The work was conducted at the request of Unocal Corporate Environmental Remediation and Technology (Unocal) in accordance with the scope of work presented in the GeoResearch proposal dated October 17, 1994 and the Regional Water Quality Control Board's Tri-Regional Guidelines for Underground Storage Tank (UST) Investigations dated August 1990.

## 2.0 BACKGROUND

The site is an active Unocal service station consisting of two dispenser islands, a cashiers booth, and three USTs. The Unocal service station is currently being remodeled and upgraded. As part of the remodeling, the product lines, vent lines, dispenser islands and pumps are being replaced. In addition, a car wash is currently under construction at the site. The remodeling work is being conducted by Holmes & Narver of Orange, California.

## 3.0 OBJECTIVES

The objectives of the work conducted at the site by GeoResearch were to assess the extent (if any) of petroleum hydrocarbons in the vicinity of the product piping and dispenser islands; and characterize the potential presence of contaminants that may be found in soil excavated from various areas at the site.

## 4.0 SCOPE OF WORK

The scope of work for the investigation included the following:

- o Preparation of a health and safety plan;
- o Collection and chemical analyses of soil samples from beneath the old product piping and dispensers islands and from soil stockpiles; and
- o Preparation of a closure report.

## 5.0 SOIL SAMPLING ACTIVITIES

On October 31, 1994, GeoResearch personnel collected 13 soil samples beneath the old dispenser islands, product lines, and vent lines at the site. Prior to sample collection, a backhoe was used to remove the lines and islands. Soil samples were collected from the backhoe bucket from soil exposed at depths of approximately 3 feet below ground surface (bgs) beneath the product lines (PL1 through PL6) and vent lines (VL1 and VL2) and at 5 feet bgs beneath the old dispenser islands (PIS1, PIS2, PIN1, and PIN2). Based on laboratory results, one additional soil sample designated as PIS2-7 was collected at 7 feet bgs from beneath the old southeastern most dispenser island in the same location as PIS2-5. The soil samples were collected in accordance with the field procedures presented in Appendix A.

The lithology observed at the site consisted of dark yellowish brown clay grading into dark yellowish brown silt with some clay and minor fine sand below 5 feet bgs. The percentage of clay and silt decreases with depth at the site to the maximum depth explored of 10 feet bgs. Petroleum hydrocarbon vapors were detected between 1 and 10 parts per million using a Century 128 organic vapor analyzer (OVA) in some of the soil found in the vicinity of the dispenser islands.

### 5.1 LABORATORY ANALYSES AND RESULTS

Soil samples collected at the site were submitted for analyses to Sequoia Analytical of Redwood City, California (Sequoia), a state-certified analytical laboratory. The soil samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-G) and total petroleum hydrocarbons as diesel (TPH-D) in accordance with California Department of Health Services (DOHS) Methods; and for benzene, toluene, ethylbenzene, and total xylenes (BTEX) in accordance with the United States Environmental Protection Agency (EPA) Method 8020. A summary of the laboratory analyses for soil samples collected beneath the old dispenser islands, product piping, and vent lines are presented in Table 1. Laboratory reports and chain-of-custody forms are presented in Attachment B.

Laboratory analyses indicate that TPH-G and BTEX concentrations were not detected above laboratory detection limits in any of the soil samples collected except PIS2-5. TPH-G and benzene concentrations of 610 and 1.3 milligrams per kilogram (mg/kg), respectively, were reported in the 5 foot soil sample collected at sample location PIS2. The soil sample collected at 7 feet bgs at sample location PIS2 was not reported to contain TPH-G or BTEX concentrations above laboratory detection limits. The soil excavated from this area was stockpiled separately from the remainder of the soil on site.

## 6.0 STOCKPILE CHARACTERIZATION

Several areas of the site were excavated for construction purposes. Approximately 650 cubic yards of soil were excavated at the site and placed into six stockpiles designated as SP1 through SP6. Stockpile SP6, approximately 5 cubic yards, consisted of the soil removed from the area of soil samples PIS-2-5 and PIS-2-7. On November 30, 1994, 17 stockpile soil samples were collected from the various stockpiles at the site to characterize the soil for disposal purposes. The soil samples were collected in accordance with the field procedures presented in Appendix A.

### 6.1 LABORATORY ANALYSES AND RESULTS

The stockpile soil samples collected were submitted to Sequoia for analysis. The four soil samples from stockpile SP6 were composited by the laboratory into stockpile sample SP6. All other samples were analyzed discretely. The stockpile soil samples were analyzed for TPH-G, TPH-D, and BTEX in accordance with the methods presented in Section 4.2.

Laboratory reports indicate that TPH-G and BTEX concentrations were not detected above laboratory detection limits in any of the soil stockpile soil collected. TPH-D concentrations ranged from non detect to 23 mg/kg.

### 6.2 STOCKPILE DISPOSAL

Upon consultation with Mr. Scott Seerey of the County of Alameda, Department of Environmental Health, stockpiles SP1, SP4 and SP6 were utilized as backfill at the site. Soil stockpiles SP2, SP3 and SP5 were utilized as backfill by Caltrans for a retaining wall on Interstate I-580 in Hayward, California.

TABLES

**TABLE 1**

**ANALYTICAL RESULTS FOR SOIL SAMPLES  
PRODUCT PIPING AND DISPENSER ISLANDS  
UNOCAL SERVICE STATION #3770  
CASTRO VALLEY, CALIFORNIA**

SAMPLE DESIGNATION	DEPTH	TPH-G	TPH-D	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
PL1-3	3	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
PL2-3	3	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
PL3-3	3	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
PL4-3	3	<1.0	NA	<0.005	<0.005	<0.005	<0.005
PL5-3	3	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
PL6-3	3	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
PL7-3	3	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
VL1-3	3	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
VL2-3	3	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
PIS1-5	5	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
PIS2-5	5	610	5.1	1.3	35	12	74
PIS2-7	7	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
PIN1-5	5	<1.0	NA	<0.005	<0.005	<0.005	<0.005
PIN2-5	5	<1.0	NA	<0.005	<0.005	<0.005	<0.005

**NOTES:**

1. All values are reported in milligrams per kilograms (mg/kg).
2. Depth measured in feet below ground surface.
3. <1.0 = Not detected above the indicated laboratory detection limit.
4. TPH-G = Total petroleum hydrocarbons as gasoline.
5. TPH-D = Total petroleum hydrocarbons as diesel.
6. NA = Not analyzed



**TABLE 2**

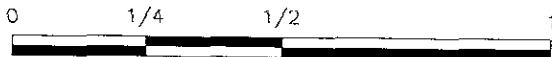
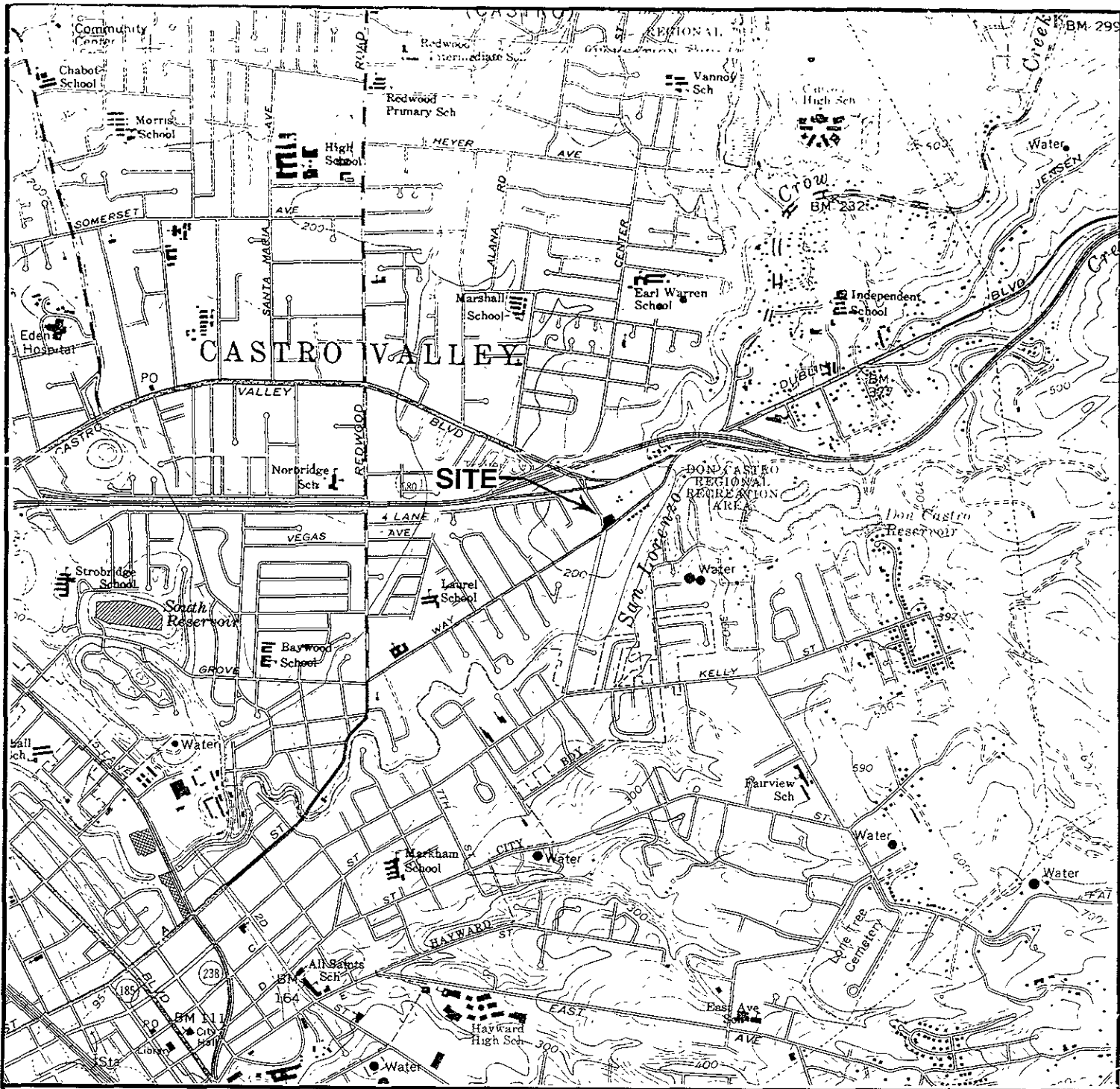
**ANALYTICAL RESULTS FOR  
STOCKPILE SOIL SAMPLES  
UNOCAL SERVICE STATION #3770  
CASTRO VALLEY, CALIFORNIA**

SAMPLE DESIGNATION	TPH-D	TPH-G	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
SP1-1	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
SP1-2	1.1	<1.0	<0.005	<0.005	<0.005	<0.005
SP2-1	4.8	<1.0	<0.005	<0.005	<0.005	<0.005
SP3-1	9	<1.0	<0.005	<0.005	<0.005	<0.005
SP3-2	15	<1.0	<0.005	<0.005	<0.005	<0.005
SP3-3	7.3	<1.0	<0.005	<0.005	<0.005	<0.005
SP3-4	2.2	<1.0	<0.005	<0.005	<0.005	<0.005
SP3-5	0.11	<1.0	<0.005	<0.005	<0.005	<0.005
SP3-6	1.3	<1.0	<0.005	<0.005	<0.005	<0.005
SP4-1	2.4	<1.0	<0.005	<0.005	<0.005	<0.005
SP4-2	23	<1.0	<0.005	<0.005	<0.005	<0.005
SP4-3	6.2	<1.0	<0.005	<0.005	<0.005	<0.005
SP5-1	10	<1.0	<0.005	<0.005	<0.005	<0.005
SP6*	1.7	<1.0	<0.005	<0.005	<0.005	<0.005

**NOTES:**

1. All values are reported in milligrams per kilograms (mg/kg).
2. <1.0 = Not detected above the indicated laboratory detection limit.
3. TPH-G = Total petroleum hydrocarbons as gasoline.
4. TPH-D = Total petroleum hydrocarbons as diesel.
5. SP6 = Composite samples of SP6-1 through SP6-4

FIGURES



SCALE IN MILES

REFERENCE  
 US GEOLOGICAL SURVEY, 1959  
 HAYWARD, CALIFORNIA, QUADRANGLE,  
 PHOTOREVISED 1980

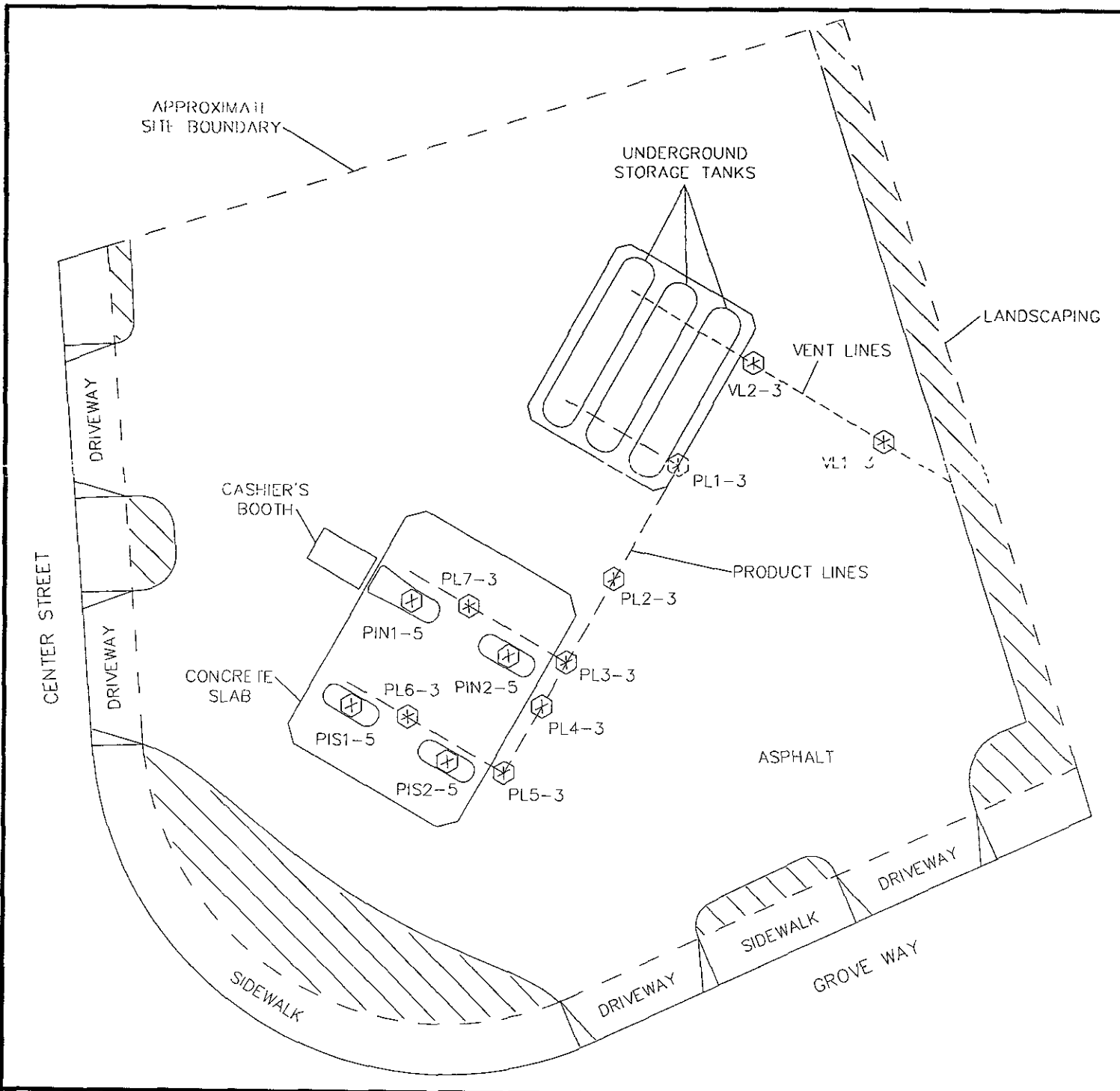
NORTH



GeoResearch

SITE LOCATION  
 UNOCAL SERVICE STATION 3770  
 3020 GROVE STREET  
 CASTRO VALLEY, CALIFORNIA  
 PROJECT NO 9580601300

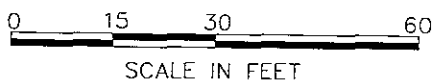
DATE. 11/16/94	CKD BY:	FIGURE NO.: 1
FILE NO SITE01300		DRAWN BY: L KOC-AN



LEGEND

(X) GRAB SAMPLE LOCATION AND DESIGNATION  
 PL1-3

(O) DISPENSER ISLAND



GeoResearch

SITE PLAN  
 UNOCAL SERVICE STATION 3770  
 3020 GROVE STREET  
 CASTRO VALLEY, CALIFORNIA  
 9580601300

DATE: 11/17/94

CKD BY:

FIGURE NO.: 2

FILE NO: 601300

DRAWN BY: L. KOCH:AN

**APPENDIX A**

**FIELD PROCEDURES**

## APPENDIX A

### FIELD PROCEDURES

#### I. GRAB SOIL SAMPLES

The following procedures were used for the collection of grab samples from the beneath the old product piping and dispenser islands.

1. Soil samples were collected using a backhoe. The soil were collected from the backhoe bucket containing soil from the area to be sampled. The sample was obtained by manually forcing a brass sampling tube into the soil contained in the bucket. The soil was compacted into the tube to minimize headspace and volatilization.
2. The ends of the samples collected were covered with teflon sheets and capped with polyvinyl chlorinated (PVC) end caps. The sample was then labeled and placed in a zip-lock bag in a chilled cooler prior to delivery to the laboratory for analysis.
3. Soil samples were assigned identification numbers such as PL1-3, where PL1 indicates the sample location and -3 indicates that the sample was collected at 3 feet bgs. The samples were labeled with the sampling designation, depth, date, client name, and project number.
4. Chain-of-custody procedures using chain-of-custody forms were used for the sample handling and transportation of the samples.

#### II. STOCKPILE SOIL SAMPLING

The following procedures were used for the collection of stockpile soil samples.

1. Stockpile sample locations were arbitrarily selected on each stockpile. The top 1 to 3 feet of soil was removed from the sampling area prior to sample collection.
2. Soil samples were obtained by manually forcing the brass sampling tube into the area in which to be sampled. Each soil sample was compacted into the tube to minimize headspace and volatilization.
3. The samples were prepared and submitted to be laboratory in accordance with the procedures previously outline in Section I.

**APPENDIX E**

LABORATORY REPORTS AND  
CHAIN-OF-CUSTODY RECORDS



**Sequoia  
Analytical**

680 Chesapeake Drive  
1900 Bates Avenue, Suite L  
819 Striker Avenue, Suite 8

Redwood City CA 94063  
Concord, CA 94520  
Sacramento, CA 95834

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(510) 686-9600  
(916) 921-9600

FAX (415) 364-2233  
FAX (510) 686-9689  
FAX (916) 921-0100

Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Attention: Michael Guy

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: VL1-3  
Matrx: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411003-01

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/07/94  
Analyzed: 11/08/94  
Reported: 11/10/94

Instrument ID: GCHP5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	105

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

*Andrea Fulcher*  
Project Manager







**Sequoia Analytical**

680 Chesapeake Drive	Redwood City, CA 94063	(415) 364-9600	FAX (415) 364-9233
1900 Bates Avenue, Suite L	Concord, CA 94520	(510) 686-9600	FAX (510) 686-9689
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<b>Geo Research</b> 3777 Depot Road Suite 418 Hayward, CA 94545	<b>Client Proj. ID:</b> Unocal Castro Valley #3770 <b>Sample Descript:</b> VL1-3 <b>Matrix:</b> SOLID <b>Analysis Method:</b> 8015Mod/8020 <b>Lab Number:</b> 9411003-01	<b>Sampled:</b> 10/31/94 <b>Received:</b> 11/01/94 <b>Extracted:</b> 11/01/94 <b>Analyzed:</b> 11/01/94 <b>Reported:</b> 11/10/94
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QC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-07

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**


Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70                      130	95

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
\_\_\_\_\_  
Andrea Fulcher  
Project Manager





**Sequoia  
Analytical**

520 Chesapeake Drive	Redwood City, CA 94063	(415) 964-9600	FAX (415) 964-9633
1900 Bates Avenue, Suite L	Concord, CA 94520	(510) 686-9600	FAX (510) 686-9689
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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545	Client Proj. ID: Unocal Castro Valley #3770 Sample Descript: VL2-3 Matrix: SOLID Analysis Method: EPA 8015 Mod Lab Number: 9411003-02	Sampled: 10/31/94 Received: 11/01/94 Extracted: 11/07/94 Analyzed: 11/08/94 Reported: 11/10/94
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Instrument ID: GCHP5B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	87

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
\_\_\_\_\_  
Andrea Fulcher  
Project Manager



**Sequoia  
Analytical**

680 Chesapeake Drive	Redwood City, CA 94062	(415) 564-5000	FAX (415) 564-9233
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819 Striker Avenue, Suite B	Sacramento, CA 95834	(916) 921-9600	FAX (916) 921-0100

Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545	Client Proj. ID: Unocal Castro Valley #3770 Sample Descript: VL2-3 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411003-02	Sampled: 10/31/94 Received: 11/01/94 Extracted: 11/01/94 Analyzed: 11/01/94 Reported: 11/10/94
Attention: Michael Guy		
GC Batch Number: GC110194BTEXEXA		
Instrument ID: GCHP-06		

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	71

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
Project Manager





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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL1-3  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411003-03

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/07/94  
Analyzed: 11/08/94  
Reported: 11/10/94

Attention: Michael Guy

Instrument ID: GCHP5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50                      150	86

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fulcher  
Project Manager





**Sequoia Analytical**

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FAX (415) 364-9633  
FAX (510) 686-9689  
FAX (916) 921-0100

Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545	Client Proj. ID: Unocal Castro Valley #3770 Sample Descript: PL1-3 Matrx: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411003-03	Sampled: 10/31/94 Received: 11/01/94 Extracted: 11/01/94 Analyzed: 11/01/94 Reported: 11/10/94
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GC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-18

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	91

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
Andrea Fulcher  
Project Manager





**Sequoia Analytical**

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL2-3  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411003-04

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/07/94  
Analyzed: 11/08/94  
Reported: 11/10/94

Attention: Michael Guy

Instrument ID: GCHP5B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50                      150	83

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fischer  
Project Manager





**Sequoia Analytical**

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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545	Client Proj. ID: Unocal Castro Valley #3770 Sample Descript: PL2-3 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411003-04	Sampled: 10/31/94 Received: 11/01/94 Extracted: 11/01/94 Analyzed: 11/01/94 Reported: 11/10/94
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QC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	105

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Andrea Fulcher  
Project Manager



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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal Castro Valley #3770 Sample Descript: PL3-3 Matrix: SOLID Analysis Method: EPA 8015 Mod Lab Number: 9411003-05	Sampled: 10/31/94 Received: 11/01/94 Extracted: 11/07/94 Analyzed: 11/08/94 Reported: 11/10/94
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Instrument ID: GCHP5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50                      150	101

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
 Andrea Fulcher  
 Project Manager







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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL3-3  
Matrix: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 9411003-05

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/10/94

QC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	105

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fischer  
Project Manager





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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL4-3  
Matrix: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 9411003-14

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/10/94

GC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	93

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
Project Manager



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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Attention: Michael Guy

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL5-3  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411003-06

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/07/94  
Analyzed: 11/08/94  
Reported: 11/10/94

Instrument ID: GCHP5B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	88

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Project Manager





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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL5-3  
Matrx: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 9411003-06

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/10/94

GC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-18

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	83

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
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**Sequoia Analytical**

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<b>Geo Research</b> 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	<b>Client Proj. ID:</b> Unocal Castro Valley #3770 <b>Sample Descript:</b> PL6-3 <b>Matrix:</b> SOLID <b>Analysis Method:</b> EPA 8015 Mod <b>Lab Number:</b> 9411003-07	<b>Sampled:</b> 10/31/94 <b>Received:</b> 11/01/94 <b>Extracted:</b> 11/07/94 <b>Analyzed:</b> 11/08/94 <b>Reported:</b> 11/10/94
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Instrument ID: GCHP5A


**Total Extractable Petroleum Hydrocarbons (TEPH)**

<b>Analyte</b>	<b>Detection Limit mg/Kg</b>	<b>Sample Results mg/Kg</b>
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.

<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	95

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
Project Manager



**Sequoia Analytical**

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL6-3  
Matrix: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 9411003-07

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/10/94

Attention: Michael Guy

QC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	96

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Andrea Fischer  
Project Manager





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<b>Geo Research</b>	<b>Client Proj. ID: Unocal Castro Valley #3770</b>	<b>Sampled: 10/31/94</b>
<b>3777 Depot Road Suite 418</b>	<b>Sample Descript: PL7-3</b>	<b>Received: 11/01/94</b>
<b>Hayward, CA 94545</b>	<b>Matrix: SOLID</b>	<b>Extracted: 11/07/94</b>
<b>Attention: Michael Guy</b>	<b>Analysis Method: EPA 8015 Mod</b>	<b>Analyzed: 11/08/94</b>
	<b>Lab Number: 9411003-08</b>	<b>Reported: 11/10/94</b>

Instrument ID: GCHP5B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50 150	84

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

*Andreas Fulcher*  
 \_\_\_\_\_  
 Andreas Fulcher  
 Project Manager



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Geo Research	Client Proj. ID: Unocal Castro Valley #3770	Sampled: 10/31/94
3777 Depot Road Suite 418	Sample Descript: PL7-3	Received: 11/01/94
Hayward, CA 94545	Matrx: SOLID	Extracted: 11/01/94
Attention: Michael Guy	Analysis Method: 8015Mod/8020	Analyzed: 11/01/94
	Lab Number: 9411003-08	Reported: 11/10/94

QC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-18


**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	81

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
Project Manager







**Sequoia Analytical**

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Attention: Michael Guy

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PIS1-5  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411003-09

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/07/94  
Analyzed: 11/08/94  
Reported: 11/10/94

Instrument ID: GCHP5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	96

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fulcher  
Project Manager



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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal Castro Valley #3770 Sample Descript: PIS1-5 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411003-09	Sampled: 10/31/94 Received: 11/01/94 Extracted: 11/01/94 Analyzed: 11/01/94 Reported: 11/10/94
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QC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-18

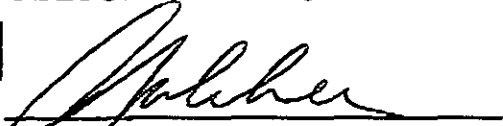
**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/kg	Sample Results mg/kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	84

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
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Project Manager



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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PIS2-5  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411003-10

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/03/94  
Analyzed: 11/04/94  
Reported: 11/10/94

Attention: Michael Guy

Instrument ID: GCHP-5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	5.2
Chromatogram Pattern: Non Diesel Mix		<C14

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	84

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fulcher  
Project Manager



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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal Castro Valley #3770 Sample Descript: VL2-3 Matrix: SOLID Analysis Method: EPA 8015 Mod Lab Number: 9411003-02	Sampled: 10/31/94 Received: 11/01/94 Extracted: 11/07/94 Analyzed: 11/08/94 Reported: 11/10/94
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Instrument ID: GCHP5B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	87

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210



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Andrea Fulcher  
Project Manager





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<b>Geo Research</b> 3777 Depot Road Suite 418 Hayward, CA 94545	<b>Client Proj. ID:</b> Unocal Castro Valley #3770 <b>Sample Descript:</b> VL2-3 <b>Matrix:</b> SOLID <b>Analysis Method:</b> 8015Mod/8020 <b>Lab Number:</b> 9411003-02	<b>Sampled:</b> 10/31/94 <b>Received:</b> 11/01/94 <b>Extracted:</b> 11/01/94 <b>Analyzed:</b> 11/01/94 <b>Reported:</b> 11/10/94
<b>Attention:</b> Michael Guy		
<b>QC Batch Number:</b> GC110194BTEXEXA		
<b>Instrument ID:</b> GCHP-06		

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	71

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
\_\_\_\_\_  
Andrea Fulcher  
Project Manager





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Geo Research  
3777 Depot Road Suite 418  
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Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL1-3  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411003-03

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/07/94  
Analyzed: 11/08/94  
Reported: 11/10/94

Attention: Michael Guy

Instrument ID: GCHP5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	86

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fulcher  
Project Manager





**Sequoia Analytical**

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Geo Research  
3777 Depot Road Suite 418  
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Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL1-3  
Matrix: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 9411003-03

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/10/94

Attention: Michael Guy

QC Batch Number: GC1101945TEXEXA  
Instrument ID: GCHP-18


**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	91

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
Andrea Fuicher  
Project Manager





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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL2-3  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411003-04

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/07/94  
Analyzed: 11/08/94  
Reported: 11/10/94

Attention: Michael Guy

Instrument ID: GCHP5B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50                      150	83

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fischer  
Project Manager







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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545	Client Proj. ID: Unocal Castro Valley #3770 Sample Descript: PL2-3 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411003-04	Sampled: 10/31/94 Received: 11/01/94 Extracted: 11/01/94 Analyzed: 11/01/94 Reported: 11/10/94
Attention: Michael Guy		
QC Batch Number: GC110194BTEXEXA		
Instrument ID: GCHP-01		

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	105

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

Andrea Fulcher  
Project Manager



**Sequoia Analytical**

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545  
Attention: Michael Guy

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL3-3  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411003-05

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/07/94  
Analyzed: 11/08/94  
Reported: 11/10/94

Instrument ID: GCHP5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.
Surrogates n-Pentacosane (C25)	Control Limits % 50 150	% Recovery 101

Analyses reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Andrea Fulcher  
Project Manager





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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL3-3  
Matrix: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 9411003-05

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/10/94

Attention: Michael Guy

QC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	105

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fuicher  
Project Manager





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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL4-3  
Matrix: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 9411003-14

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/10/94

Attention: Michael Guy

QC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	93

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fulcher  
Project Manager



# Sequoia Analytical

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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal Castro Valley #3770 Sample Descript: PL5-3 Matrix: SOLID Analysis Method: EPA 8015 Mod Lab Number: 9411003-06	Sampled: 10/31/94 Received: 11/01/94 Extracted: 11/07/94 Analyzed: 11/08/94 Reported: 11/10/94
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Instrument ID: GCHP58

## Total Extractable Petroleum Hydrocarbons (TEPH)


Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50                      150	88

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
 Andrea Fulcher  
 Project Manager





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Geo Research Client Proj. ID: Unocal Castro Valley #3770 Sampled: 10/31/94  
 3777 Depot Road Suite 418 Sample Descript: PL5-3 Received: 11/01/94  
 Hayward, CA 94545 Matrix: SOLID Extracted: 11/01/94  
 Attention: Michael Guy Analysis Method: 8015Mod/8020 Analyzed: 11/01/94  
 Lab Number: 9411003-06 Reported: 11/10/94  
 GC Batch Number: GC1101948TEXEXA  
 Instrument ID: GCHP-18

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	83

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Andrea Fulcher  
 Project Manager





**Sequoia Analytical**

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<b>Geo Research</b> 3777 Depot Road Suite 418 Hayward, CA 94545	<b>Client Proj. ID:</b> Unocal Castro Valley #3770 <b>Sample Descript:</b> PL6-3 <b>Matrix:</b> SOLID <b>Analysis Method:</b> EPA 8015 Mod <b>Lab Number:</b> 9411003-07	<b>Sampled:</b> 10/31/94 <b>Received:</b> 11/01/94 <b>Extracted:</b> 11/07/94 <b>Analyzed:</b> 11/08/94 <b>Reported:</b> 11/10/94
<b>Attention: Michael Guy</b>		

Instrument ID: GCHP5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**


Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50                      150	95

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
 Andrea Fulcher  
 Project Manager



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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal Castro Valley #3770 Sample Descript: PL6-3 Matrx: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411003-07	Sampled: 10/31/94 Received: 11/01/94 Extracted: 11/01/94 Analyzed: 11/01/94 Reported: 11/10/94
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GC Batch Number: GC110194BTEXEXA  
 Instrument ID: GCHP-01


**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	96

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
 Andrea Falcher  
 Project Manager







**Sequoia Analytical**

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL7-3  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411003-08

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/07/94  
Analyzed: 11/08/94  
Reported: 11/10/94

Attention: Michael Guy

Instrument ID: GCHP5B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	84

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fuicher  
Project Manager



**Sequoia Analytical**

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PL7-3  
Matrx: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 9411003-08

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/10/94

GC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-18


**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	81

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
Andrea Fulcher  
Project Manager





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<b>Geo Research</b> 3777 Depot Road Suite 418 Hayward, CA 94545  Attention: Michael Guy	<b>Client Proj. ID:</b> Unocal Castro Valley #3770 <b>Sample Descript:</b> PIS1-6 <b>Matrix:</b> SOLID <b>Analysis Method:</b> EPA 8015 Mod <b>Lab Number:</b> 9411003-09	<b>Sampled:</b> 10/31/94 <b>Received:</b> 11/01/94 <b>Extracted:</b> 11/07/94 <b>Analyzed:</b> 11/08/94 <b>Reported:</b> 11/10/94
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Instrument ID: GCHP5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50 150	96

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
 \_\_\_\_\_  
 Andrea Fulcher  
 Project Manager



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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PIS1-5  
Matrix: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 9411003-09

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/10/94

Attention: Michael Guy

GC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-18

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	84

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fulcher  
Project Manager



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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Castro Valley #3770  
Sample Descript: PIS2-5  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411003-10

Sampled: 10/31/94  
Received: 11/01/94  
Extracted: 11/03/94  
Analyzed: 11/04/94  
Reported: 11/10/94

Attention: Michael Guy

Instrument ID: GCHP-5A

### Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	5.2
Chromatogram Pattern: Non Diesel Mix		<C14

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	84

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Pulcher  
Project Manager





**Sequoia Analytical**

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Geo Research	Client Proj. ID: Unocal Castro Valley #3770	Sampled: 10/31/94
3777 Depot Road Suite 418	Sample Descript: PIS2-5	Received: 11/01/94
Hayward, CA 94545	Matrx: SOLID	Extracted: 11/01/94
Attention: Michael Guy	Analysis Method: 8015Mod/8020	Analyzed: 11/01/94
	Lab Number: 9411003-10	Reported: 11/10/94

GC Batch Number: GC110194BTEXEXA  
Instrument ID: GCHP-06

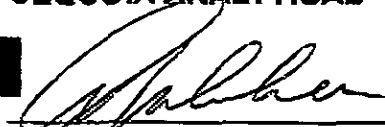
**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	100	610
Benzene	0.50	1.3
Toluene	0.50	35
Ethyl Benzene	0.50	12
Xylenes (Total)	0.50	74
Chromatogram Pattern:		Gas

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	92

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
 \_\_\_\_\_  
 Andrea Fulcher  
 Project Manager





**Sequoia  
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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545	Client Proj. ID: Unocal Castro Valley #3770 Sample Descript: PIN1-5 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411003-11	Sampled: 10/31/94 Received: 11/01/94 Extracted: 11/01/94 Analyzed: 11/01/94 Reported: 11/10/94
Attention: Michael Guy		
GC Batch Number: GC110194BTEXEXA		
Instrument ID: GCHP-01		

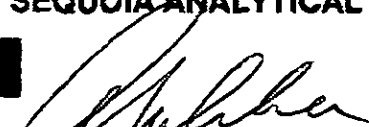
**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	100

Analyses reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
Project Manager



**Sequoia Analytical**

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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal Castro Valley #3770 Sample Descript: PIN2-5 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411003-12	Sampled: 10/31/94 Received: 11/01/94 Extracted: 11/01/94 Analyzed: 11/01/94 Reported: 11/10/94
QC Batch Number: GC110194BTEXEXA Instrument ID: GCHP-18		

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	84

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
Project Manager







Geo Research Client Proj. ID: Unocal Castro Valley Sampled: 11/07/94
3777 Depot Road Suite 418 Sample Descript: PIS2-7 Received: 11/07/94
Hayward, CA 94545 Matrix: SOLID Extracted: 11/08/94
Attention: Michael Guy Analysis Method: 8015Mod/8020 Analyzed: 11/08/94
Lab Number: 9411380-01 Reported: 11/09/94

QC Batch Number: GC110894BTEXEXA
Instrument ID: GCHP-01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Table with 3 columns: Analyte, Detection Limit mg/Kg, Sample Results mg/Kg. Rows include TPHH as Gas, Benzene, Toluene, Ethyl Benzene, Xylenes (Total), and Chromatogram Pattern.

Table with 3 columns: Surrogates, Control Limits %, % Recovery. Row includes Trifluorotoluene.

analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Signature of Andrea Fulcher
Andrea Fulcher
Project Manager



Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545  
  
Attention: Michael Guy

Client Proj. ID: Unocal Castro Valley  
Sample Descript: PIS2-7  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411380-01

Sampled: 11/07/94  
Received: 11/07/94  
Extracted: 11/08/94  
Analyzed: 11/08/94  
Reported: 11/09/94

Instrument ID: GCHP5B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	88

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Andrea Fulcher  
Project Manager



Sequoia  
Analytical

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545  
Attention: Michael Guy

Client Proj. ID: Unocal Castro Valley

Received: 11/07/94

Lab Proj. ID: 9411380

Reported: 11/09/94

### LABORATORY NARRATIVE

NOT APPLICABLE.

SEQUOIA ANALYTICAL

Andrea Fulcher  
Project Manager



Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545  
Attention: Michael Guy

Client Project ID: Unocal Castro Valley  
Matrix: Solid

Work Order #: 9411380 -01

Reported: Nov 21, 1994

QUALITY CONTROL DATA REPORT

<b>Analyte:</b>	Diesel
<b>QC Batch#:</b>	C1107940HBPTX8
<b>Analy. Method:</b>	EPA 8015 Mod.
<b>Prep. Method:</b>	EPA 3550

**Analyst:** B.Ali  
**MS/MSD #:** 9411003-9  
**Sample Conc.:** N.D.  
**Prepared Date:** 11/7/94  
**Analyzed Date:** 11/8/94  
**Instrument I.D.#:** GCHP5A  
**Conc. Spiked:** 15 mg/kg

**Result:** 11  
**MS % Recovery:** 73

**Dup. Result:** 11  
**MSD % Recov.:** 76

**RPD:** 4.5  
**RPD Limit:** 0-50

**LCS #:** -  
**Prepared Date:** -  
**Analyzed Date:** -  
**Instrument I.D.#:** -  
**Conc. Spiked:** -  
**LCS Result:** -  
**LCS % Recov.:** -

<b>MS/MSD</b>	
<b>LCS</b>	28-122
<b>Control Limits</b>	

SEQUOIA ANALYTICAL

Andrea Fulcher  
 Project Manager

Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.



# Sequoia Analytical

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Geo Research  
 3777 Depot Road Suite 418  
 Hayward, CA 94545  
 Attention: Michael Guy

Client Project ID: Unocal Castro Valley  
 Matrix: Solid

Work Order #: 9411380 -01

Reported: Nov 21, 1994

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC110894BTEXEXA	GC110894BTEXEXA	GC110894BTEXEXA	GC110894BTEXEXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	C.Donohue	C.Donohue	C.Donohue	C.Donohue
MS/MSD #:	9411365-01	9411365-01	9411365-01	9411365-01
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	11/8/94	11/8/94	11/8/94	11/8/94
Analyzed Date:	11/8/94	11/8/94	11/8/94	11/8/94
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	0.20 mg/kg	0.20 mg/kg	0.20 mg/kg	0.60 mg/kg

Result:	0.21	0.21	0.22	0.66
MS % Recovery:	105	105	110	110
Dup. Result:	0.20	0.20	0.21	0.62
MSD % Recov.:	100	100	105	103
RPD:	4.9	4.9	4.7	6.3
RPD Limit:	50	50	50	50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL

  
 Andrea Fulcher  
 Project Manager

Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9411380.GGG <2>

# UNOCAL 76

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  18939 120th Ave., N.E., Suite 101 • Bothell, WA 98011 • (206) 481-8200  
 619 Sinker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600   
  East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-8200  
 1900 Bates Ave., Suite LM • Concord, CA 94520 • (510) 566-8600   
  15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-8900

P.5

Company Name: <u>GeoResearch</u>		Project Name: <u>Unocal Cortez Valley</u>	
Address: <u>3777 Depot Rd, Ste 418</u>		UNOCAL Project Manager: <u>Bob Baus</u>	
City: <u>Hayward</u>	State: <u>Ca</u>	Zip Code: <u>94541</u>	Release #:
Telephone: <u>(510) 785-1111</u>		FAX #: <u>(510) 785-1192</u>	
Report To: <u>Michael Guy</u>		QC Data: <input checked="" type="checkbox"/> Level D (Standard) <input type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A	
Sampler: <u>Michael Guy</u>		Site #: <u>3770</u>	

Turnaround  10 Work Days     5 Work Days     3 Work Days     Drinking Water  
 Time:  2 Work Days     1 Work Day     2-8 Hours     Waste Water  
 CODE:  Misc.     Detect.     Eval.     Remed.     Demol.     Closure     Other

**Analyses Requested**

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	TPH-6/BTEX				TPH-0				9411380				Comments
1. P152-7	11/7/94/9:00	Soil	1	Tube		X	X											
2. P152-10	↓	↓	↓	↓														Hold
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		17.0

Relinquished By: <u>[Signature]</u>	Date: <u>11/7/94</u>	Time: <u>3:00</u>	Received By: <u>Steve Fu</u>	Date: <u>11-7-94</u>	Time: <u>3:00</u>
Relinquished By: <u>Steve Fu</u>	Date: <u>11-7-94</u>	Time: <u>      </u>	Received By: <u>      </u>	Date: <u>      </u>	Time: <u>      </u>
Relinquished By: <u>      </u>	Date: <u>      </u>	Time: <u>      </u>	Received By Lab: <u>[Signature]</u>	Date: <u>11-7-94</u>	Time: <u>11:00</u>

Were Samples Received in Good Condition?  Yes  No   
 Samples on Ice?  Yes  No   
 Method of Shipment          
 Page     of    

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported?  Yes  No    If no, what analyses are still needed?         
 2) Was the report issued within the requested turnaround time?  Yes  No    If no, what was the turnaround time?       

Approved by: Frank Bass    Signature: [Signature]    Company: GeoResearch    Date: 11/7/94

NOV 09 '94 10:56AM SEQUOIA ANALYTICAL

Pink - Client

Yellow - Laboratory

White - Laboratory

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal 3770 Grove  
Sample Descript: SP1-1  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411133-01

Sampled: 11/30/94  
Received: 11/30/94  
Extracted: 12/01/94  
Analyzed: 12/03/94  
Reported:

Attention: Michael Guy

QC Batch Number: GC1201940HBPEXB  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	99

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
Project Manager



**Sequoia  
Analytical**

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal 3770 Grove  
Sample Descript: SP1-1  
Matrix: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 9411133-01

Sampled: 11/30/94  
Received: 11/30/94  
Extracted: 12/01/94  
Analyzed: 12/02/94  
Reported:

Attention: Michael Guy

QC Batch Number: GC120194BTEXEXB  
Instrument ID: GCHP-07

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70                      130	102

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
Project Manager





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Analytical**

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal 3770 Grove  
Sample Descript: SP1-2  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411133-02

Sampled: 11/30/94  
Received: 11/30/94  
Extracted: 12/01/94  
Analyzed: 12/03/94  
Reported:

Attention: Michael Guy

QC Batch Number: GC1201940HBPEXB  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern: Non Diesel Mix	1.0	1.1 C9-C24

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50      150	96

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

Andrea Fulcher  
Project Manager



**Sequoia  
Analytical**

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal 3770 Grove  
Sample Descript: SP1-2  
Matrix: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 9411133-02

Sampled: 11/30/94  
Received: 11/30/94  
Extracted: 12/01/94  
Analyzed: 12/01/94  
Reported:

Attention: Michael Guy

QC Batch Number: GC120194BTEXEXB  
Instrument ID: GCHP-01

### Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	81

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fletcher  
Project Manager



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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal Grove Sample Descript: SP2-1 Matrx: SOLID Analysis Method: EPA 8015 Mod Lab Number: 9411123-01	Sampled: 11/30/94 Received: 11/30/94 Extracted: 11/30/94 Analyzed: 12/01/94 Reported: 12/02/94
--	--	--

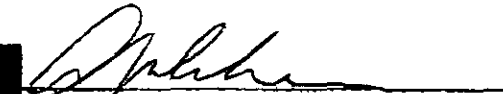
QC Batch Number: GC1128940HBPEXA  
Instrument ID: GCHP6B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	4.8 C9-C24
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	102

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
Project Manager



**Sequoia Analytical**

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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal Grove Sample Descript: SP2-1 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411123-01	Sampled: 11/30/94 Received: 11/30/94 Extracted: 11/30/94 Analyzed: 11/30/94 Reported: 12/02/94
--	---	--

QC Batch Number: GC113094BTEXEXA  
Instrument ID: GCHP-01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.

Chromatogram Pattern:

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70                      130	88

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
Project Manager



**Sequoia Analytical**

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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545	Client Proj. ID: Unocal Grove Sample Descript: SP3-1 Matrix: SOLID Analysis Method: EPA 8015 Mod Lab Number: 9411123-02	Sampled: 11/30/94 Received: 11/30/94 Extracted: 11/30/94 Analyzed: 12/01/94 Reported: 12/02/94
--	---	--

QC Batch Number: GC1126640HEPEXA  
Instrument ID: GCHP5A


**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	9.0 C9-C24

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50                      150	183 Q

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
Project Manager



Sequoia  
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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545	Client Proj. ID: Unocal Grove Sample Descript: SP3-1 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411123-02	Sampled: 11/30/94 Received: 11/30/94 Extracted: 11/30/94 Analyzed: 11/30/94 Reported: 12/02/94
--	---	--

QC Batch Number: GC113094BTEXEXC  
Instrument ID: GCHP-01

### Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	104

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
Andrea Fulcher  
Project Manager



**Sequoia  
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<b>Geo Research</b> 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	<b>Client Proj. ID:</b> Unocal Grove <b>Sample Descript:</b> SP3-2 <b>Matrix:</b> SOLID <b>Analysis Method:</b> EPA 8015 Mod <b>Lab Number:</b> 9411123-03	<b>Sampled:</b> 11/30/94 <b>Received:</b> 11/30/94 <b>Extracted:</b> 11/30/94 <b>Analyzed:</b> 12/01/94 <b>Reported:</b> 12/02/94
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QC Batch Number: GC1128940HBPEXA  
Instrument ID: GCHP5B

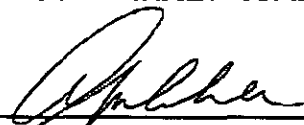
**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	15 C9-C24

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50                      150	176 Q

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
\_\_\_\_\_  
Andrea Fulcher  
Project Manager



**Sequoia Analytical**

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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545	Client Proj. ID: Unocal Grove Sample Descript: SP3-2 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411123-03	Sampled: 11/30/94 Received: 11/30/94 Extracted: 11/30/94 Analyzed: 11/30/94 Reported: 12/02/94
--	---	--

QC Batch Number: GC113094BTEXEXA  
Instrument ID: GCHP-01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0060	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	104

\*Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
Andrea Fulcher  
Project Manager





**Sequoia Analytical**

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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545	Client Proj. ID: Unocal Grove Sample Descript: SP3-3 Matrix: SOLID Analysis Method: EPA 8015 Mod Lab Number: 941123-04	Sampled: 11/30/94 Received: 11/30/94 Extracted: 11/30/94 Analyzed: 12/01/94 Reported: 12/02/94
--	--	--

QC Batch Number: GC1128940HBPEXA  
Instrument ID: GCHP5B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	7.3 C9-C24
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50 150	117

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fulcher  
Project Manager



**Sequoia  
Analytical**

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FAX (916) 921-0100

Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal Grove Sample Descript: SP3-3 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411123-04	Sampled: 11/30/94 Received: 11/30/94 Extracted: 11/30/94 Analyzed: 11/30/94 Reported: 12/02/94
--	---	--

QC Batch Number: GC113094BTEXEXA  
Instrument ID: GCHP-01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	93

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

*Andrea Fulcher*  
Andrea Fulcher  
Project Manager



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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Grove  
Sample Descript: SP3-4  
Matrx: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 941123-05

Sampled: 11/30/94  
Received: 11/30/94  
Extracted: 11/30/94  
Analyzed: 12/01/94  
Reported: 12/02/94

Attention: Michael Guy

QC Batch Number: GC1128940HBPEXA  
Instrument ID: GCHP5B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	2.2 C9-C24

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	172 Q

analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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<b>Geo Research</b> 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	<b>Client Proj. ID:</b> Original Grove <b>Sample Descript:</b> SP3-4 <b>Matrix:</b> SOLID <b>Analysis Method:</b> 8015Mod/8020 <b>Lab Number:</b> 941123-05	<b>Sampled:</b> 11/30/94 <b>Received:</b> 11/30/94 <b>Extracted:</b> 11/30/94 <b>Analyzed:</b> 11/30/94 <b>Reported:</b> 12/02/94
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QC Batch Number: GC113094BTEXEXA  
Instrument ID: GCHP-01

### Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	96

analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Grove  
Sample Descript: SP3-5  
Matrx: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411123-06

Sampled: 11/30/94  
Received: 11/30/94  
Extracted: 11/30/94  
Analyzed: 12/01/94  
Reported: 12/02/94

Attention: Michael Guy


QC Batch Number: GC1128940HBPEXA  
Instrument ID: GCHP5B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	11 C9-C24
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50 150	135

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
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Project Manager



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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal Grove Sample Descript: SP3-5 Matrx: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411123-06	Sampled: 11/30/94 Received: 11/30/94 Extracted: 11/30/94 Analyzed: 11/30/94 Reported: 12/02/94
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QC Batch Number: GC113094BTEXEXA  
Instrument ID: GCHP-01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	97

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal Grove  
Sample Descript: SP3-6  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411123-07

Sampled: 11/30/94  
Received: 11/30/94  
Extracted: 11/30/94  
Analyzed: 12/01/94  
Reported: 12/02/94

Attention: Michael Guy

QC Batch Number: GC1128940HBPEXA  
Instrument ID: GCHP5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	1.3 C9-C24

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	111

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

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Project Manager



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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal Grove Sample Descript: SP3-6 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 941123-07	Sampled: 11/30/94 Received: 11/30/94 Extracted: 11/30/94 Analyzed: 11/30/94 Reported: 12/02/94
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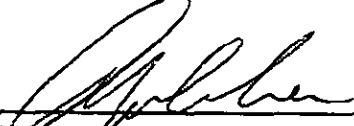
QC Batch Number: GC113094BTEXEXA  
Instrument ID: GCHP-01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	83

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Andrea Fulcher  
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<b>Geo Research</b>	<b>Client Proj. ID: Unocal 3770 Grove</b>	<b>Sampled: 11/30/94</b>
<b>3777 Depot Road Suite 418</b>	<b>Sample Descript: SP4-1</b>	<b>Received: 11/30/94</b>
<b>Hayward, CA 94545</b>	<b>Matrix: SOLID</b>	<b>Extracted: 12/01/94</b>
<b>Attention: Michael Guy</b>	<b>Analysis Method: EPA 8015 Mod</b>	<b>Analyzed: 12/03/94</b>
	<b>Lab Number: 9411133-03</b>	<b>Reported:</b>

QC Batch Number: GC1201940HBPEXB  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	2.4
Chromatogram Pattern:		
Non Diesel Mix		C9-C24

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	99

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal 3770 Grove  
Sample Descript: SP4-1  
Matrix: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 9411133-03

Sampled: 11/30/94  
Received: 11/30/94  
Extracted: 12/01/94  
Analyzed: 12/01/94  
Reported:

Attention: Michael Guy

QC Batch Number: GC120194BTEXEXB  
Instrument ID: GCHP-07

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	91

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal 3770 Grove  
Sample Descript: SP4-2  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411133-04

Sampled: 11/30/94  
Received: 11/30/94  
Extracted: 12/01/94  
Analyzed: 12/03/94  
Reported:

Attention: Michael Guy

QC Batch Number: GC1201940HBPEXB  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern: Non Diesel Mix	1.0	23 C9-C24
Surrogates n-Pentacosane (C25)	Control Limits % 50                      150	% Recovery 192 Q

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

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Project Manager



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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal 3770 Grove Sample Descript: SP4-2 Matrx: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411133-04	Sampled: 11/30/94 Received: 11/30/94 Extracted: 12/01/94 Analyzed: 12/01/94 Reported:
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QC Batch Number: GC120194BTEXEXB  
Instrument ID: GCHP-07

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	99

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

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<b>Geo Research</b>	<b>Client Proj. ID: Unocal 3770 Grove</b>	<b>Sampled: 11/30/94</b>
3777 Depot Road Suite 418	<b>Sample Descript: SP4-3</b>	<b>Received: 11/30/94</b>
Hayward, CA 94545	<b>Matrix: SOLID</b>	<b>Extracted: 12/01/94</b>
<b>Attention: Michael Guy</b>	<b>Analysis Method: EPA 8015 Mod</b>	<b>Analyzed: 12/03/94</b>
	<b>Lab Number: 9411133-05</b>	<b>Reported:</b>

QC Batch Number: GC1201940HBPEXB  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	8.2
Chromatogram Pattern: Non Diesel Mix		C9-C24
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	107

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fulcher  
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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal 3770 Grove  
Sample Descript: SP4-3  
Matrix: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 941133-05

Sampled: 11/30/94  
Received: 11/30/94  
Extracted: 12/01/94  
Analyzed: 12/01/94  
Reported:

Attention: Michael Guy

QC Batch Number: GC120194BTEXEXB  
Instrument ID: GCHP-07

### Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	92

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545	Client Proj. ID: Unocal Grove Sample Descript: SP5-1 Matrix: SOLID Analysis Method: EPA 8015 Mod Lab Number: 9411123-08	Sampled: 11/30/94 Received: 11/30/94 Extracted: 11/30/94 Analyzed: 12/01/94 Reported: 12/02/94
Attention: Michael Guy		

QC Batch Number: GC1128940HBPEXA  
Instrument ID: GCHP5A

### Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern:	1.0	10 C9-C24
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	162 Q

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Andrea Fulcher  
Project Manager



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Geo Research 3777 Depot Road Suite 418 Hayward, CA 94545 Attention: Michael Guy	Client Proj. ID: Unocal Grove Sample Descript: SP5-1 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9411123-08	Sampled: 11/30/94 Received: 11/30/94 Extracted: 11/30/94 Analyzed: 11/30/94 Reported: 12/02/94
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QC Batch Number: GC113094BTEXEXA  
Instrument ID: GCHP-01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	89

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal 3770 Grove  
Sample Descript: SP8-1 (Comp 1-4)  
Matrix: SOLID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9411133-06

Sampled: 11/30/94  
Received: 11/30/94  
Extracted: 12/01/94  
Analyzed: 12/03/94  
Reported:

Attention: Michael Guy

QC Batch Number: GC1201940HBPEXB  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel Chromatogram Pattern: Non Diesel Mix	1.0	1.7  C9-C24

Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50                      150	105

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

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3777 Depot Road Suite 418  
Hayward, CA 94545Client Proj. ID: Unocal 3770 Grove  
Sample Descript: SP6-1 (Comp 1-4)  
Matrix: SOLID  
Analysis Method: 8015Mod/8020  
Lab Number: 8411133-06Sampled: 11/30/94  
Received: 11/30/94  
Extracted: 12/01/94  
Analyzed: 12/02/94  
Reported:

Attention: Michael Guy

QC Batch Number: GC120194BTEXEXB  
Instrument ID: GCHP-07**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.

Chromatogram Pattern:

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	89

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
 Andrea Fulcher  
Project Manager



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Geo Research  
3777 Depot Road Suite 418  
Hayward, CA 94545

Client Proj. ID: Unocal 3770 Grove  
Lab Proj. ID: 9411133

Sampled: 11/30/94  
Received: 11/30/94  
Analyzed: see below

Attention: Michael Guy

Reported:

### LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9411133-06				
Sample Desc : SOLID,SP6-1 (Comp 1-4)				
Lead	mg/Kg	12/01/94	5.0	53

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
Andrea Fulcher



Company Name: GeoResearch Project Name: Unocal Grove (500 Grove)  
 Address: 3777 Depot Rd #418 UNOCAL Project Manager: Bob Boust  
 City: Hayward State: Ca Zip Code: 94545 Release #:  
 Telephone: 510-785-1111 FAX #: 785-1192 Site #: 3770  
 Report To: F. Poss Sampler: F. Poss QC Data:  Level D (Standard)  Level C  Level B  Level A

Turnaround  10 Work Days  5 Work Days  3 Work Days  
 Time:  2 Work Days  1 Work Day  2-8 Hours  
 CODE:  Misc.  Detect.  Eval.  Remed.  Demol.  Closure

Analyses Requested  
 Drinking Water  
 Waste Water  
 Other

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	Comments
1. SP1-1	13:45	S	1	Ring		48 Hour
2. SP1-2	" "	S	"			48 Hour
3. SP2-2	14:00	S	"			24 Hour *
4. SP3-1	14:15	S	"			24 Hour *
5. SP3-2	" "	S	"			*
6. SP3-3	" "	S	"			*
7. SP3-4	" "	S	"			*
8. SP3-5	" "	S	"			*
9. SP3-6	" "	S	"			*
10. SP4-1	14:30	S	"			48 Hour

\* Need by 12/1 at 4:00 PM \*

Relinquished By: [Signature] Date: 11/30/94 Time: \_\_\_\_\_ Received By: [Signature] Date: 11/30/94 Time: 9:35  
 Relinquished By: [Signature] Date: 11/30/94 Time: 5:10 Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By Lab: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Were Samples Received in Good Condition?  Yes  No Samples on Ice?  Yes  No Method of Shipment \_\_\_\_\_ Page \_\_\_ of \_\_\_

Be completed upon receipt of report:  
 Were the analyses requested on the Chain of Custody reported?  Yes  No If no, what analyses are still needed? \_\_\_\_\_  
 Was the report issued within the requested turnaround time?  Yes  No If no, what was the turnaround time? \_\_\_\_\_  
 Signature: \_\_\_\_\_ Company: \_\_\_\_\_ Date: \_\_\_\_\_

SENI BY: XEROX Telecopier 7017:12-2-94 : 14:37 : 4153649233- 510 785 1192: #18  
 Pink - Client  
 Yellow - Laboratory  
 White - Laboratory

Company Name: Geo Research Project Name: Unocal Grove (500 Grove)  
 Address: 3777 Depot Rd #418 UNOCAL Project Manager: Bob Boust  
 City: Hayward State: Ca Zip Code: 94545 Release #:  
 Telephone: 510-785-1111 FAX #: 785-1192 Site #: 3770  
 Report To: F. Poss Sampler: F. Poss QC Data:  Level D (Standard)  Level C  Level B  Level A

Turnaround  10 Work Days  5 Work Days  3 Work Days  
 Time:  2 Work Days  1 Work Day  2-8 Hours  
 CODE:  Misc.  Detect.  Eval.  Remed.  Demol.  Closure

Analyses Requested  
 Drinking Water  
 Waste Water  
 Other

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	Comments
1. SP4-2	14:30	S	1	Eng	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">BOLD TPH-G TPH-D Lead</p> </div>	48 Hour
2. SP4-3	14:30					24-HOUR
<del>3. SP4-4</del>	<del>14:30</del>					
4. SP5-1	14:45					
5. SP6-1	15:00					Composite
6. SP6-2	15:00					48 Hour
7. SP6-3	15:00					
8. SP6-4	15:00					
9.						
10.						

*\* Need by 12/1 at 4:00 P.M. \**

Relinquished By: <u>[Signature]</u>	Date: <u>11/30/89</u> Time: <u>4:35</u>	Received By: <u>[Signature]</u>	Date: <u>11/30/89</u> Time: <u>4:35</u>
Relinquished By: <u>[Signature]</u>	Date: <u>11/30/89</u> Time: <u>5:10</u>	Received By:	Date: Time:
	Date: Time:	Received By Lab:	Date: Time:

Is in Good Condition?  Yes  No      Samples on Ice?  Yes  No      Method of Shipment \_\_\_\_\_      Page \_\_\_ of \_\_\_

Signature: \_\_\_\_\_ Company: \_\_\_\_\_ Date: \_\_\_\_\_  
 Is on the Chain of Custody reported?  Yes  No If no, what analyses are still needed? \_\_\_\_\_  
 Is requested turnaround time?  Yes  No If no, what was the turnaround time? \_\_\_\_\_

SENT BY: XEROX Telecopier 7017:12-2-94 : 14:37 : 4153649233- 510 785 1192: #19  
 Client - JHM Laboratory - JHM Laboratory - JHM Laboratory

# UNOCAL 76

680 Chesapeake Drive • Redwood City, CA 94083 • (415) 364-9600   
  18939 120th Ave., N.E., Suite 101 • Bothell, WA 98011 • (206) 481-9200  
 819 Striker Ave., Suite B • Sacramento, CA 95834 • (916) 921-9600   
  East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200  
 1900 Bates Ave., Suite LM • Concord, CA 94520 • (510) 686-9600   
  15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-9800

Company Name: <u>Geo Research</u>		Project Name: <u>Unocal Castro Valley</u>	
Address: <u>3777 Depot Rd</u>		UNOCAL Project Manager: <u>Bob Boust</u>	
City: <u>Hayward</u> State: <u>Ca</u> Zip Code: <u>94541</u>	Release #: <u>3770</u>		
Telephone: <u>(510) 785-1111</u> FAX #: <u>(510) 785-1112</u>	Site #: <u>3770</u>		
Report To: <u>Mike Guy</u>	Sampler: <u>[Signature]</u>	QC Data: <input checked="" type="checkbox"/> Level D (Standard) <input type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A	

Turnaround  10 Work Days  5 Work Days  3 Work Days   
  Drinking Water  
 Time:  2 Work Days  1 Work Day  2-8 Hours   
  Waste Water  
 Other

CODE:  Misc.  Detect.  Eval.  Remed.  Demol.  Closure

Analyses Requested: 9411003

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	Analyses Requested										Comments				
1. VL1-3	10/31/94 2:30	Soil	1	Steel tube		X	X													
2. VL2-3						X														
3. PL1-3						X														
4. PL2-3						X														
5. PL3-3						X														
6. PL4-3						X														
7. PL5-3						X														
8. PL6-3						X														
9. PL7-3						X														
10. PIS1-5						X														

Relinquished By: <u>[Signature]</u>	Date: <u>11/1/94</u>	Time: <u>9:30</u>	Received By: <u>[Signature]</u>	Date: <u>11/1/94</u>	Time: <u>08:45</u>
Relinquished By: <u>[Signature]</u>	Date: <u>11/1/94</u>	Time: <u>09:28</u>	Received By: _____	Date: _____	Time: <u>09:28</u>
Relinquished By: _____	Date: _____	Time: _____	Received By Lab: <u>[Signature]</u>	Date: <u>11/1/94</u>	Time: <u>09:28</u>

Were Samples Received in Good Condition?  Yes  No   
 Samples on Ice?  Yes  No   
 Method of Shipment: COURIER   
 Page \_\_\_ of \_\_\_

To be completed upon receipt of report:  
 1) Were the analyses requested on the Chain of Custody reported?  Yes  No If no, what analyses are still needed? \_\_\_\_\_  
 2) Was the report issued within the requested turnaround time?  Yes  No If no, what was the turnaround time? \_\_\_\_\_  
 Approved by: \_\_\_\_\_ Signature: \_\_\_\_\_ Company: \_\_\_\_\_ Date: \_\_\_\_\_

Pink - Client  
 Yellow - Laboratory  
 White - Laboratory

# UNOCAL 76

690 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600

18939 120th Ave., N.E., Suite 101 • Bothell, WA 98011 • (206) 481-9200

819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600

East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200

1900 Bates Ave., Suite LM • Concord, CA 94520 • (510) 696-9800

15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-0800

Company Name: <u>GeoResearch</u>		Project Name: <u>Unocal Castro Valley</u>	
Address: <u>3777 Depot Rd</u>		UNOCAL Project Manager: <u>Bob Brust</u>	
City: <u>Hayward</u>	State: <u>Ca</u>	Zip Code: <u>94545</u>	Release #:
Telephone: <u>(510) 785-1111</u>		FAX #: <u>(510) 785-1192</u>	
Report To: <u>Mike Guy</u>		Sampler: <u>MLG</u>	
Turnaround <input type="checkbox"/> 10 Work Days <input type="checkbox"/> 5 Work Days <input type="checkbox"/> 3 Work Days		QC Data: <input checked="" type="checkbox"/> Level D (Standard) <input type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A	

Time: <input type="checkbox"/> 2 Work Days <input checked="" type="checkbox"/> 1 Work Day <input type="checkbox"/> 2-8 Hours	<input type="checkbox"/> Drinking Water	Analyses Requested: <u>9411003</u>
CODE: <input type="checkbox"/> Misc. <input checked="" type="checkbox"/> Detect. <input type="checkbox"/> Eval. <input type="checkbox"/> Remed. <input type="checkbox"/> Demol. <input type="checkbox"/> Closure	<input type="checkbox"/> Waste Water	
		<input type="checkbox"/> Other

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	TPH-G / BTEX										Comments				
1. PJS2-5	11/1/94 2:30	Soil	1	Steel tube	9411003-	X														
2. PIN1-5	↓	↓	↓	↓		X														
3. PIN2-5	↓	↓	↓	↓		X														
4.																				
5. BSP	11/1/94 2:30	Soil	1	Steel tube																hold
6.																				
7.																				
8.																				
9.																				
10.																				

Relinquished By: <u>MLG</u>	Date: <u>11/1/94</u>	Time: <u>2:30</u>	Received By: <u>[Signature]</u>	Date: <u>11/1/94</u>	Time: <u>0846</u>
Relinquished By: <u>[Signature]</u>	Date: <u>11/1/94</u>	Time: <u>0928</u>	Received By: _____	Date: _____	Time: _____
Relinquished By: _____	Date: _____	Time: _____	Received By Lab: <u>[Signature]</u>	Date: <u>11/1/94</u>	Time: <u>0928</u>

Were Samples Received in Good Condition?  Yes  No      Samples on Ice?  Yes  No      Method of Shipment \_\_\_\_\_      Page \_\_\_ of \_\_\_

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported?  Yes  No If no, what analyses are still needed? \_\_\_\_\_

2) Was the report issued within the requested turnaround time?  Yes  No If no, what was the turnaround time? \_\_\_\_\_

Approved by: \_\_\_\_\_ Signature: \_\_\_\_\_ Company: \_\_\_\_\_ Date: \_\_\_\_\_

Pink - Client

Yellow - Laboratory

White - Laboratory

**DO NOT WRITE**

# UNOCAL 76

880 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600   
  18939 120th Ave., N.E., Suite 101 • Bothell, WA 98011 • (206) 481-9200  
 819 Sinker Ave., Suite 6 • Sacramento, CA 95834 • (916) 921-9600   
  East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200  
 1900 Balms Ave., Suite LM • Concord, CA 94520 • (510) 686-9600   
  15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-6800

P.5

Company Name: <u>Geo Research</u>		Project Name: <u>Unocal Cortez Valley</u>	
Address: <u>3777 Depot Rd, Ste 418</u>		UNOCAL Project Manager: <u>Bob Austin</u>	
City: <u>Hayward</u>	State: <u>Ca</u>	Zip Code: <u>94541</u>	Release #:
Telephone: <u>(510) 785-1111</u>		FAX #: <u>(510) 785-1192</u>	
Report To: <u>Michael Gmy</u>		Sampler: <u>Michael Gmy</u>	
Turnaround <input type="checkbox"/> 10 Work Days <input type="checkbox"/> 5 Work Days <input type="checkbox"/> 3 Work Days		QC Data: <input checked="" type="checkbox"/> Level D (Standard) <input type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A	
Time: <input checked="" type="checkbox"/> 2 Work Days <input type="checkbox"/> 1 Work Day <input type="checkbox"/> 2-8 Hours		Site #: <u>3770</u>	

CODE:  Misc.  Detect.  Eval.  Remed.  Demol.  Closure

Drinking Water     Waste Water     Other

10 Work Days     5 Work Days     3 Work Days     2-8 Hours

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	Analyses Requested				Comments
1. <u>PISZ-7</u>	<u>11/7/94/9:00</u>	<u>Soil</u>	<u>1</u>	<u>Tube</u>		<u>TPH-6/STET</u>	<u>TPH-0</u>	<u>9411380</u>	<u>FOL</u>	
2. <u>PISZ-10</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>						<u>Hold</u>
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										<u>W.C.</u>

Relinquished By: <u>[Signature]</u>	Date: <u>11/7/94</u>	Time: <u>3:00</u>	Received By: <u>[Signature]</u>	Date: <u>11-7-94</u>	Time: <u>3:00</u>
Relinquished By: <u>[Signature]</u>	Date: <u>11-7-94</u>	Time: <u>---</u>	Received By: <u>[Signature]</u>	Date: <u>---</u>	Time: <u>---</u>
Relinquished By: <u>[Signature]</u>	Date: <u>---</u>	Time: <u>---</u>	Received By Lab: <u>[Signature]</u>	Date: <u>11-19-94</u>	Time: <u>10:00</u>

Were Samples Received in Good Condition?  Yes  No   
 Samples on Ice?  Yes  No   
 Method of Shipment \_\_\_\_\_   
 Page \_\_\_ of \_\_\_

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported?  Yes  No If no, what analyses are still needed? \_\_\_\_\_  
 2) Was the report issued within the requested turnaround time?  Yes  No If no, what was the turnaround time? \_\_\_\_\_

Approved by: Frank Ross    Signature: [Signature]    Company: Geo Research    Date: 11/14/94

NOV 09 '94 10:56AM SEQUOIA ANALYTICAL

Pink - Client

Yellow - Laboratory

White - Laboratory

11/09/94 WED 12:35 FAX 510 765 1192

GEO RESEARCH