



## KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P.O. BOX 996 • BENICIA, CA 94510  
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581

KEI-J91-0102.R2

March 7, 1991

Unocal Corporation  
2000 Crow Canyon Place, #400  
P.O. Box 5155  
San Ramon, California 94583

Attention: Mr. Ron Bock

RE: Stockpiled Soil Sampling for  
Unocal Service Station #3242  
15008 East 14th Street  
San Leandro, CA

Dear Mr. Bock:

This letter report summarizes the results of the stockpiled soil sampling and laboratory analyses for the referenced site. The soil analyses were conducted to comply with the County Health Department requirements for proper disposal of contaminated soil.

On January 17, 1991, soil samples from approximately 500 cubic yards of stockpiled soil excavated from the fuel tank pit were collected to determine proper disposal of the soil. Ten composite soil samples (designated as Comp A through Comp J) were taken. Each composite sample consisted of four individual grab samples taken at various locations and a depth of approximately 2 feet. The samples were collected in two-inch diameter, clean brass tubes, which were then sealed with aluminum foil, plastic caps and tape, and placed in a cooled ice chest for subsequent delivery to a certified laboratory for analysis. All samples were analyzed at Sequoia Analytical Laboratory in Concord, California, and were accompanied by properly executed Chain of Custody documentation. Sample point locations are as shown on the attached Site Plan, Figure 1.

On January 24, 1991, Kaprealian Engineering, Inc. (KEI) returned to the site to collect soil samples from approximately 225 cubic yards of additional stockpiled soil excavated from the fuel tank pit. Five composite samples (designated as Comp K through Comp O) were collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 2.

On February 13, 1991, soil samples from approximately 250 cubic yards of aerated stockpiled soil (previously sampled as Comp A, Comp C, Comp E, Comp I, and Comp J) were taken. Five composite soil samples (designated as Comp 1 through Comp 5) were taken.

Samples were collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 3.

Soil samples were analyzed to determine concentrations of total petroleum hydrocarbons (TPH) as gasoline using EPA method 5030 in conjunction with modified 8015 and benzene, toluene, xylenes and ethylbenzene using EPA method 8020. In addition, sample Comp J was analyzed for organic lead using the DHS LUFT method.

Analytical results of the soil samples (Comp B, Comp D, Comp F, Comp G, Comp H, Comp K and Comp L) representing soil excavated from the fuel tank pit, indicate levels of TPH as gasoline ranging from 2.1 ppm to 95 ppm.

Analytical results of the soil samples (Comp A, Comp C, Comp E, Comp I, Comp J, Comp M, Comp N and Comp O) also representing soil excavated from the fuel tank pit, indicate levels of TPH as gasoline ranging from 120 ppm to 260 ppm. Analytical results of the soil samples Comp 1 through Comp 5 (collected after aeration of the soil represented by samples Comp A, Comp C, Comp E, Comp I and Comp J) indicate levels of TPH as gasoline ranging from 2.7 ppm to 39 ppm. Results of the soil analyses are summarized in Table 1. Copies of the laboratory analyses, and the Chain of Custody documentation are attached to this report.

Based on the analytical results of the soil samples, approximately 575 cubic yards of stockpiled soil represented by samples Comp B, Comp D, Comp F, Comp G, Comp H, Comp K, Comp L, and Comp 1 through Comp 5 was disposed of at BFI Waste Systems in Livermore, California, an approved Class III disposal site by Dan Brenton Construction. However, prior to loading and off-hauling of the stockpiled soil, KEI recommended that when obvious isolated high contamination is detected within the stockpiled soil, that portion of the soil be separately stockpiled for further sampling and treatment.

Approximately 150 cubic yards of stockpiled soil represented by Comp M, Comp N and Comp O should remain on-site for treatment and further sampling.

#### DISTRIBUTION

A copy of this report should be sent to Mr. William Faulhaber of the Alameda County Department of Health, and to the Regional Water Quality Control Board, San Francisco Bay Region.

KEI-J91-0102.R2

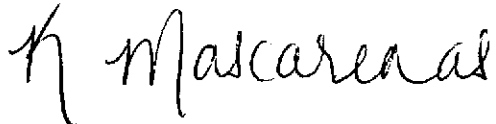
March 7, 1991

Page 3

Should you have any questions on this report, please do not hesitate to contact me at (707) 746-6915.

Sincerely,

Kaprealian Engineering, Inc.

A handwritten signature in cursive script that reads "K Mascarenas". The signature is written in black ink and is positioned below the typed name.

Kristin B. Mascarenas

\kbm

Attachments: Table 1  
Site Plans - Figures 1, 2 & 3  
Laboratory Results  
Chain of Custody documentation

TABLE 1  
SUMMARY OF LABORATORY ANALYSES  
(Collected on January 17 & 24,  
and February 14, 1991)

<u>Sample</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethylbenzene</u>
Comp A	120	0.035	0.24	4.5	1.0
Comp B	67	0.021	0.076	1.3	0.32
Comp C	200	0.057	0.60	7.9	1.4
Comp D	41	0.010	0.084	0.95	0.22
Comp E	200	0.010	0.39	5.9	1.1
Comp F*	95	0.013	0.16	3.7	0.21
Comp G	47	0.015	0.30	2.2	0.24
Comp H	28	0.010	0.16	0.80	0.14
Comp I	120	0.088	1.7	6.5	1.1
Comp J**	110	0.074	1.1	6.4	0.98
Comp K	2.1	0.0063	0.010	0.026	ND
Comp L	5.0	0.0067	0.011	0.0063	ND
Comp M	210	0.73	0.67	0.83	1.1
Comp N	260	1.0	0.93	1.9	1.7
Comp O	170	0.75	0.70	2.3	1.1
Comp 1	39	0.012	0.020	ND	ND
Comp 2	35	0.010	0.060	ND	0.040
Comp 3	2.7	0.016	ND	ND	0.029
Comp 4	26	0.014	0.034	0.040	0.029
Comp 5	8.8	ND	0.013	0.032	0.028
Detection Limits	1.0	0.0050	0.0050	0.0050	0.0050

\* Reactivity, Corrosivity and Ignitability test: See attached analyses; Soluble lead was 0.62 ppm.

\*\* Organic lead was non-detectable.

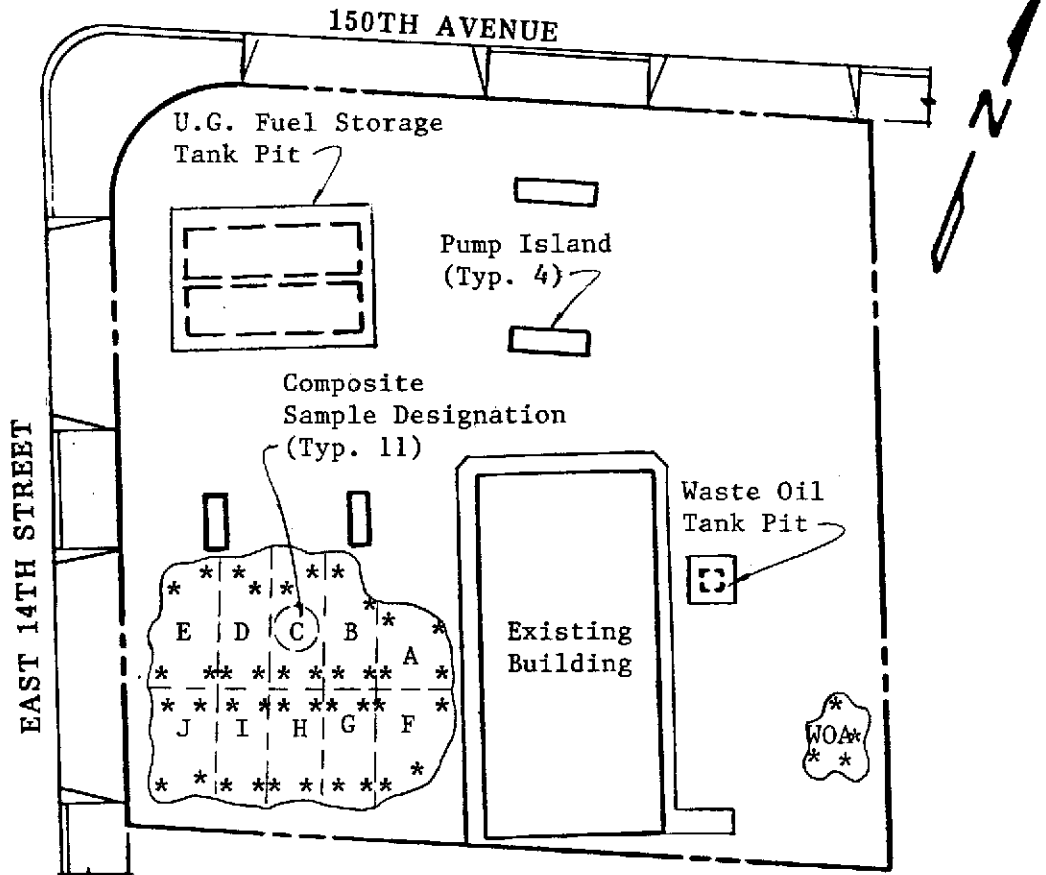
ND = Non-detectable.

Results in parts per million (ppm), unless otherwise indicated.



**KAPREALIAN ENGINEERING, INC.**  
*Consulting Engineers*

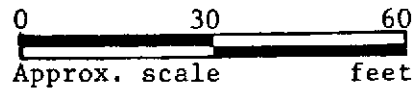
P.O. BOX 996 • BENICIA, CA 94510  
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581



SITE PLAN  
Figure 1

LEGEND

\* Sample Point Location



Unocal S/S #3292  
15008 E. 14th Street  
San Leandro, CA

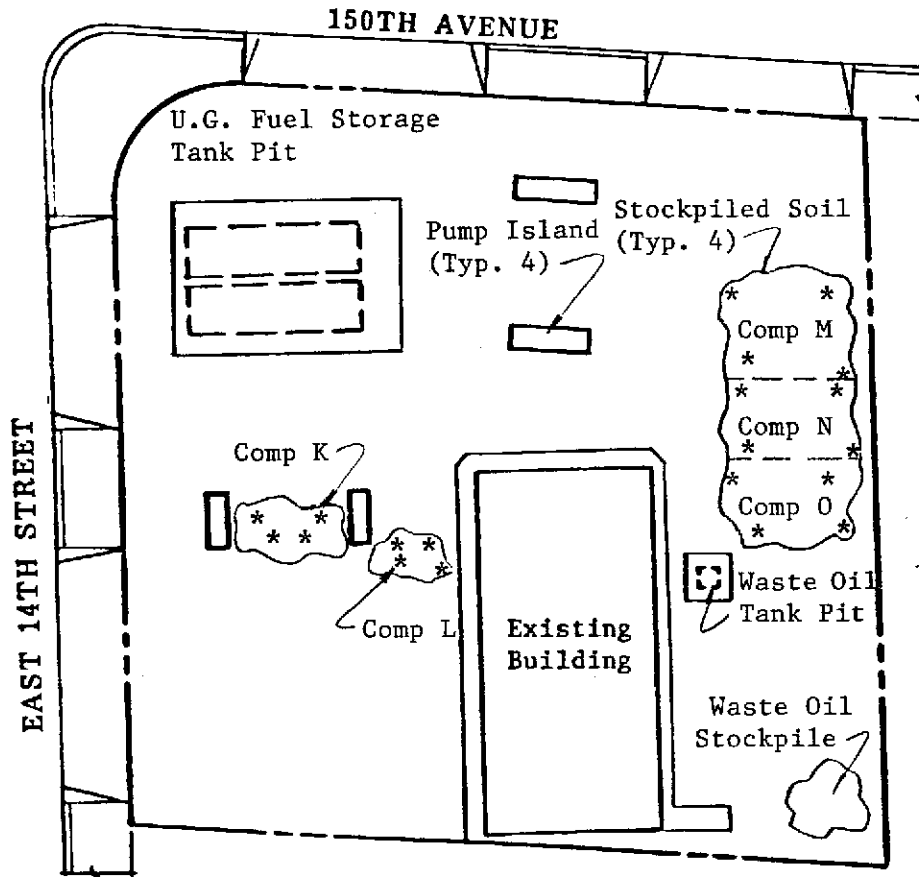


# KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P.O. BOX 996 • BENICIA, CA 94510

(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581

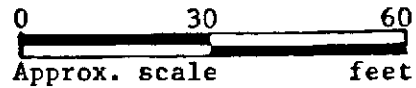


## SITE PLAN

Figure 2

### LEGEND

\* Sample Point Location



Unocal S/S #3292  
15008 E. 14th Street  
San Leandro, CA

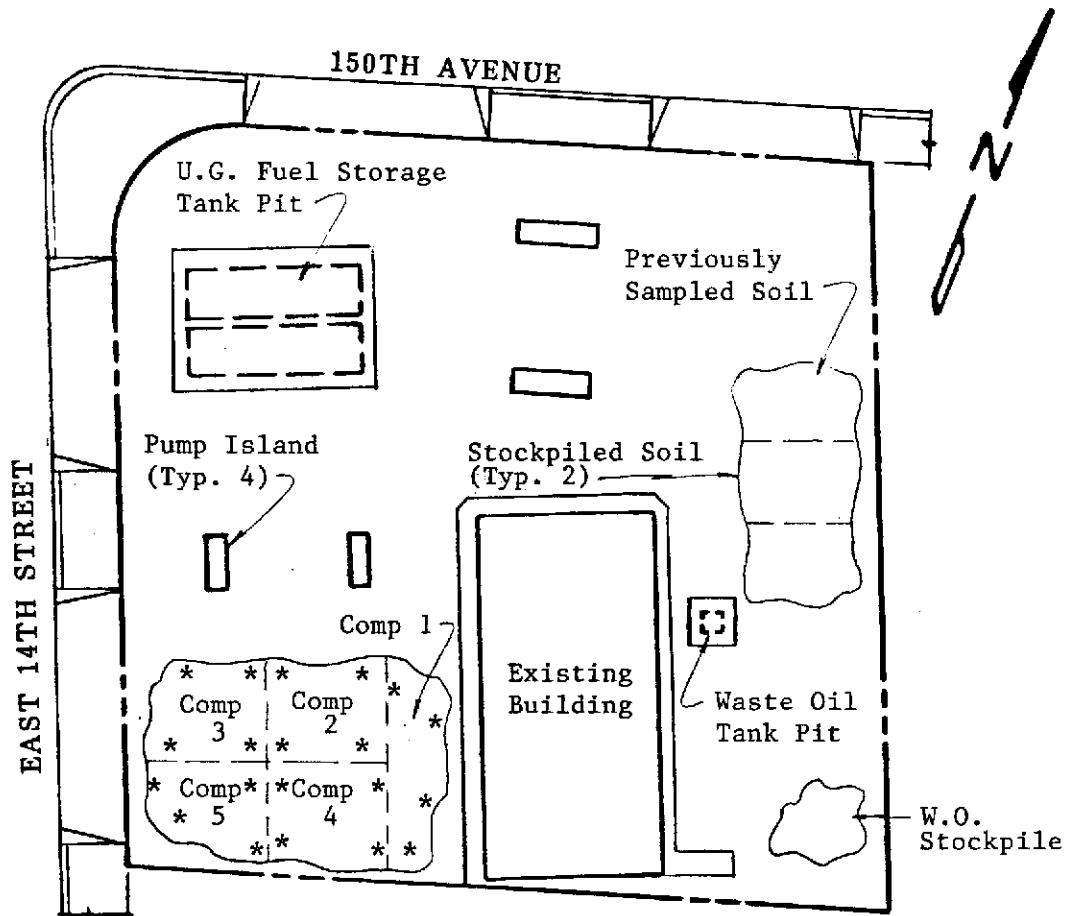


# KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P.O. BOX 996 • BENICIA, CA 94510

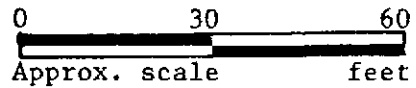
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581



SITE PLAN  
Figure 3

LEGEND

\* Sample Point Location



Unocal S/S #3292  
15008 E. 14th Street  
San Leandro, CA



# SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520  
(415) 686-9600 • FAX (415) 686-9689

Kaprealian Engineering, Inc.	Client Project ID: Unocal, 15008 E. 14th St., San Leandro	Sampled: Jan 17, 1991
P.O. Box 996	Matrix Descript: Soil	Received: Jan 18, 1991
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Jan 18, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #: 101-0372	Reported: Jan 22, 1991

## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P.	Benzene	Toluene	Ethyl	Xylenes
		Hydrocarbons			Benzene	
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
101-0372	Comp A	120	0.035	0.24	1.0	4.5
101-0373	Comp B	67	0.021	0.076	0.32	1.3
101-0374	Comp C	200	0.057	0.60	1.4	7.9
101-0375	Comp D	41	0.010	0.084	0.22	0.95
101-0376	Comp E	200	0.010	0.39	1.1	5.9
101-0377	Comp F	95	0.013	0.16	0.21	3.7
101-0378	Comp G	47	0.015	0.30	0.24	2.2
101-0379	Comp H	28	0.010	0.16	0.14	0.80
101-0380	Comp I	120	0.088	1.7	1.1	6.5

<b>Detection Limits:</b>	<b>1.0</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>
--------------------------	------------	---------------	---------------	---------------	---------------

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*Belinda C. Vega*  
Belinda C. Vega  
Laboratory Director

Please Note: The above samples appear to contain gasoline and HBPT.
--







# SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520  
(415) 686-9600 • FAX (415) 686-9689

Kaprealian Engineering, Inc.	Client Project ID: Unocal, 15008 E. 14th St., San Leandro	Sampled: Jan 24, 1991
P.O. Box 996	Matrix Descript: Soil	Received: Jan 25, 1991
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Jan 25, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #: 101-0580 A-D	Reported: Jan 28, 1991


## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P.	Ethyl			
		Hydrocarbons	Benzene	Toluene	Benzene	Xylenes
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
101-0580 A-D	Comp K	2.1	0.0063	0.010	N.D.	0.026
101-0581 A-D	Comp L	5.0	0.0067	0.011	N.D.	0.0063
101-0582 A-D	Comp M	210	0.73	0.67	1.1	0.83
101-0583 A-D	Comp N	260	1.0	0.93	1.7	1.9
101-0584 A-D	Comp O	170	0.75	0.70	1.1	2.3

<b>Detection Limits:</b>	<b>1.0</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>
--------------------------	------------	---------------	---------------	---------------	---------------

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

  
Belinda C. Vega  
Laboratory Director

1010580.KEI <1>



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

SAMPLER <i>Haig</i>		SITE NAME & ADDRESS <i>Unocal - San Leandro</i>					ANALYSES REQUESTED				TURN AROUND TIME: <i>24 Hrs</i>
WITNESSING AGENCY		<i>15008 E. 14th Street</i>					<i>TPH-C</i> <i>BTXE</i>				REMARKS
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	NO. OF COMP CONT.	SAMPLING LOCATION				
<i>✓ Comp K</i>	<i>1/24/91</i>		<i>✓</i>			<i>✓ 4</i>	<i>STOCKPILE</i>	<i>✓</i>	<i>✓</i>		<i>1010580A-D</i> <i>581</i> <i>582</i> <i>583</i> <i>584</i> ↓
<i>✓ Comp L</i>	<i>1/24/91</i>		<i>✓</i>			<i>✓ 4</i>		<i>✓</i>	<i>✓</i>		
<i>✓ Comp M</i>	<i>1/24/91</i>		<i>✓</i>			<i>✓ 4</i>		<i>✓</i>	<i>✓</i>		
<i>✓ Comp N</i>	<i>1/24/91</i>		<i>✓</i>			<i>✓ 4</i>		<i>✓</i>	<i>✓</i>		
<i>✓ Comp O</i>	<i>1/24/91</i>		<i>✓</i>			<i>✓ 4</i>		<i>✓</i>	<i>✓</i>		

Relinquished by: (Signature) <i>Healey R...</i>	Date/Time <i>1/25 9:30</i>	Received by: (Signature) <i>[Signature]</i>
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

- The following MUST BE completed by the laboratory accepting samples for analysis:
1. Have all samples received for analysis been stored in ice?
  2. Will samples remain refrigerated until analyzed?
  3. Did any samples received for analysis have head space? *NT*
  4. Were samples in appropriate containers and properly packaged?
- Signature: *[Signature]* Title: *SR* Date: *1/25*



# SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520  
(415) 686-9600 • FAX (415) 686-9689

Kaprealian Engineering, Inc.  
P.O. Box 996  
Benicia, CA 94510

Client Project ID: Unocal, 15008 E. 14th St., San Leandro  
Sample Descript: Soil, Comp F  
Lab Number: #1010377 A-D Comp

Sampled: Jan 17, 1991  
Relogged: Jan 22, 1991  
Extracted: Jan 22, 1991  
Analyzed: Jan 22, 1991  
Reported: Jan 25, 1991

## LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Ignitability.....	NA	> 100°C
Corrosivity.....	NA	8.5
Reactivity:		
Cyanide.....	0.5	N.D.
Sulfide.....	10	N.D.
Reaction with water.....	NA	None

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

SEQUOIA ANALYTICAL

Belinda C. Vega  
Laboratory Director

#1010377.KEI <1>



# SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520  
(415) 686-9600 • FAX (415) 686-9689

Kaprealian Engineering, Inc.  
P.O. Box 996  
Benicia, CA 94510

Client Project ID: Unocal, 15008 E. 14th St., San Leandro  
Sample Descript: Soil, Comp F  
Lab Number: 101-0377 A-D Comp

Sampled: Jan 17, 1991  
Relogged: Jan 22, 1991  
Extracted: Jan 25, 1991  
Analyzed: Jan 25, 1991  
Reported: Jan 25, 1991

## LABORATORY ANALYSIS

Analyte

Detection Limit  
mg/kg

Sample Results  
mg/kg

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Lead (STLC)	0.0050	0.62

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

SEQUOIA ANALYTICAL

Belinda C. Vega  
Laboratory Director

#1010377.KEI <2>



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

SAMPLER <u>TOM</u>		SITE NAME & ADDRESS					ANALYSES REQUESTED				TURN AROUND TIME:	
WITNESSING AGENCY		UNOCAL-San Leandro #3292 15008 E. 14 <sup>th</sup> Street									<u>24 hrs</u>	
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-G	BTEX	REMARKS	
Comp A	1-17-91		✓			✓	4	stockpile	✓	✓	1010372	
Comp B	"		✓			✓	4	"	✓	✓	373	
Comp C	"		✓			✓	4	"	✓	✓	374	
Comp D	"		✓			✓	4	"	✓	✓	375	
Comp E	"		✓			✓	4	"	✓	✓	376	
Comp F	"		✓			✓	4	"	✓	✓	377	
Comp G	"		✓			✓	4	"	✓	✓	378	
Comp H	"		✓			✓	4	"	✓	✓	379	
Comp I	"		✓			✓	4	"	✓	✓	380	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	The following MUST BE completed by the laboratory accepting samples for analysis: 1. Have all samples received for analysis been stored in ice? <u>Yes</u> 2. Will samples remain refrigerated until analyzed? <u>Yes</u> 3. Did any samples received for analysis have head space? <u>no</u> 4. Were samples in appropriate containers and properly packaged? <u>yes</u>
<u>Tom McFarland</u>	<u>1/17/91</u>	<u>Tom McFarland</u>	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
<u>Tom McFarland</u>	<u>1/17/91 6:25</u>	<u>Edo Henriquez</u>	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	

Signature	Title	Date
<u>Edo Henriquez</u>		<u>1-18-91</u>



# SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520  
(415) 686-9600 • FAX (415) 686-9689

Kaprealian Engineering, Inc.	Client Project ID: Unocal, 15008 E. 14th St., San Leandro	Sampled: Jan 17, 1991
P.O. Box 996	Sample Descript.: Soil, Comp J	Received: Jan 18, 1991
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Jan 18, 1991
Attention: Mardo Kaprealian, P.E.	Lab Number: 101-0368 A-D	Reported: Jan 22, 1991

## TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Low to Medium Boiling Point Hydrocarbons.....	1.0	110
Benzene.....	0.0050	0.074
Toluene.....	0.0050	1.1
Ethyl Benzene.....	0.0050	0.98
Xylenes.....	0.0050	6.4

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*Belinda Vega*  
Belinda C. Vega  
Laboratory Director



# SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520  
(415) 686-9600 • FAX (415) 686-9689

Kaprealian Engineering, Inc.

P.O. Box 996

Benicia, CA 94510

Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 15008 E. 14th St., San Leandro

Sample Descript: Soil

Analysis Method: California LUFT Manual, 12/87

First Sample #: 101-0368

Sampled: Jan 17, 1991

Received: Jan 18, 1991

Extracted: Jan 18, 1991

Analyzed: Jan 21, 1991

Reported: Jan 22, 1991

## ORGANIC LEAD

Sample Number	Sample Description	Sample Results mg/kg (ppm)
101-0368	Comp J	N.D.

Detection Limits:

0.050

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

SEQUOIA ANALYTICAL

Belinda C. Vega  
Laboratory Director

1010368.KEI <2>







# SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520  
(415) 686-9600 • FAX (415) 686-9689

Kapreallan Engineering, Inc.	Client Project ID: Unocal, 15008 E. 14th St., San Leandro	Sampled: Feb 14, 1991
P.O. Box 996	Matrix Descript: Soil	Received: Feb 15, 1991
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Feb 15, 1991
Attention: Mardo Kapreallan, P.E.	First Sample #: 102-0317 A-D	Reported: Feb 19, 1991

## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
102-0317 A-D	Comp 1	39	0.012	0.020	N.D.	N.D.
102-0318 A-D	Comp 2	35	0.010	0.060	0.040	N.D.
102-0319 A-D	Comp 3	2.7	0.016	N.D.	N.D.	N.D.
102-0320 A-D	Comp 4	26	0.014	0.034	0.029	0.040
102-0321 A-D	Comp 5	8.8	N.D.	0.013	0.028	0.032

<b>Detection Limits:</b>	<b>1.0</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>
--------------------------	------------	---------------	---------------	---------------	---------------

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard. Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*Julia R. Malerstein*  
Julia R. Malerstein  
Project Manager



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

SAMPLER <u>TOM</u>		SITE NAME & ADDRESS						ANALYSES REQUESTED				TURN AROUND TIME:	
WITNESSING AGENCY		UNOCAL - San Leandro #3292 1500 E. 14 <sup>th</sup> Street						<div style="display: flex; justify-content: space-around;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TAP-G</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX</div> </div>				24 hrs.	
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.					SAMPLING LOCATION	
✓ Comp 1	2-14-91		✓			✓	4	Fuel tank pit stockpile					
✓ Comp 2	"		✓			✓	4	"					
✓ Comp 3	"		✓			✓	4	"					
✓ Comp 4	"		✓			✓	4	"					
✓ Comp 5	"		✓			✓	4	"					
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		<p>The following MUST BE completed by the laboratory accepting samples for analysis:</p> <p>1. Have all samples received for analysis been stored in ice? <input checked="" type="checkbox"/></p> <p>2. Will samples remain refrigerated until analyzed? <input checked="" type="checkbox"/></p> <p>3. Did any samples received for analysis have head space? <u>NO</u></p> <p>4. Were samples in appropriate containers and properly packaged? <input checked="" type="checkbox"/></p>							
Tom Mascolena		2/15 9:15		[Signature]									
Relinquished by: (Signature)		Date/Time		Received by: (Signature)									
Relinquished by: (Signature)		Date/Time		Received by: (Signature)									
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Signature		Title		Date			