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

KEI-J90-1103.R2
February 4, 1991

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

Attention: Mr. Rick Sisk

RE: Stockpiled Soil Sampling for
Unocal Service Station #0752
800 Harrison Street
Oakland, California

Dear Mr. Sisk:

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 November 12, 1990, soil samples from approximately 300 cubic yards of stockpiled soil excavated from the former fuel tank pit were collected to determine proper disposal of the soil. Six composite soil samples (designated as Comp A, Comp B, Comp C, Comp D, Comp E and Comp F) were taken. Each composite sample consisted of four individual grab samples taken at various locations and depths ranging from 1 to 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 November 20, 1990, soil samples from approximately 100 cubic yards of aerated stockpiled soil (previously sampled as Comp E and Comp F) at the referenced site were collected to determine proper disposal of the soil. Two composite soil samples (designated as Comp 1 and Comp 2) were taken. Samples were collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 2.

On December 3, 1990, soil samples from approximately 100 cubic yards of aerated stockpiled soil (previously sampled as Comp C and Comp D) at the referenced site were collected to determine proper disposal of the soil. Two composite soil samples (designated as Comp 3 and Comp 4) were taken. Samples were collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 3.

On December 7, 1990, soil samples were collected from approximately 180 cubic yards of soil excavated from the new fuel tank pit to ensure that the soil was suitable as backfill material. Nine samples (designated as G through O) were collected from bulk material excavated by backhoe as the soil was being removed from the new fuel tank pit and being placed in the old fuel tank pit. Each sample consisted of one individual grab sample for every 20 cubic yards of soil excavated, per the requirements of the Regional Water Quality Control Board. The samples were stored as described above.

On December 13, 1990, KEI returned to the site to collect soil samples from approximately 60 cubic yards of soil excavated from the new fuel tank pit to ensure suitability as backfill material. Three soil samples, labeled P, Q and R, were collected from bulk material excavated by backhoe, again as the soil was being excavated from the new tank pit and being placed in the old fuel tank pit. Samples were handled and stored as previously described.

Also on this date, soil samples were collected from an additional 100 cubic yards of stockpiled soil excavated from the new tank pit to determine proper disposal of the soil. Two composite samples, labeled Comp G and Comp H, were collected. Each composite sample consisted of four individual grab samples taken at various locations and depths ranging from 1 to 2 feet. The samples were handled and stored as previously described. Sample point locations are shown on the attached Site Plan, Figure 4.

On December 20, 1990, KEI again returned to the site to collect soil samples from approximately 45 cubic yards of additional stockpiled soil excavated from the piping trenches. One composite sample (designated as Comp I) was collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 5.

All 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 (BTX&E) using EPA method 8020. In addition, sample Comp D was analyzed for organic lead using the DHS LUFT method. In addition to TPH as gasoline and BTX&E, Comp 1 was analyzed for Reactivity, Corrosivity and Ignitability.

Analytical results of the initial soil samples collected from the old fuel tank pit stockpile (Comp A through Comp F) indicate levels of TPH as gasoline at 51 ppm and 43 ppm for samples Comp A and Comp B, respectively, with levels of TPH as gasoline ranging from 150 ppm to 270 ppm for Comp C through Comp F. However, laboratory analyses of samples Comp 1 through Comp 4, collected following the aeration of soil represented by Comp C through Comp F, indicate levels of TPH as gasoline ranging from 1.4 ppm to 12 ppm. Laboratory analyses of samples Comp G through Comp I indicate levels of TPH as gasoline ranging from non-detectable to 26 ppm.

Analytical results of grab samples collected from soil excavated from the new fuel tank pit (i.e., samples G through R) indicate non-detectable levels of TPH as gasoline and BTX&E for all 12 samples. 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, stockpiled soil represented by samples Comp A, Comp B, Comp 1 through Comp 4 and Comp G through Comp I, was disposed of at BFI Waste Systems in Livermore, California by Dan Brenton Construction, an approved Class III disposal site. Prior to disposal, KEI recommended that during hauling, when obvious isolated high contamination is detected within the stockpiled soil, that portion of the soil be separately stockpiled for further sampling and treatment.

Based on the analytical results of the soil samples, soil represented by grab samples G through R can be used on-site as backfill material.

DISTRIBUTION

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

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

Sincerely,

Kaprealian Engineering, Inc.

KBMascarenas

Kristin B. Mascarenas

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Attachments: Table 1
Site Plans - Figures 1 through 5
Laboratory Results
Chain of Custody documentation

KEI-J90-1103.R2
February 4, 1991

TABLE 1

SUMMARY OF LABORATORY ANALYSES

(Collected on November 12 & 20, December 3, 7, 13 & 20, 1990)

Sample	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethylbenzene
Comp A	51	ND	ND	0.19	0.022
Comp B	43	ND	ND	0.13	0.012
Comp C	270	0.10	1.3	34	2.7
Comp D*	200	0.026	0.66	17	1.5
Comp E	150	0.022	0.45	12	0.96
Comp F	160	0.018	0.50	14	1.3
Comp 1**	12	ND	ND	0.065	0.0087
Comp 2	5.3	ND	0.013	0.043	0.011
Comp 3	1.4	0.0078	0.015	0.026	0.0064
Comp 4	7.4	0.0056	0.0078	0.022	ND
G	ND	ND	ND	ND	ND
H	ND	ND	ND	ND	ND
I	ND	ND	ND	ND	ND
J	ND	ND	ND	ND	ND
K	ND	ND	ND	ND	ND
L	ND	ND	ND	ND	ND
M	ND	ND	ND	ND	ND
N	ND	ND	ND	ND	ND
O	ND	ND	ND	ND	ND
P	ND	ND	ND	ND	ND
Q	ND	ND	ND	ND	ND
R	ND	ND	ND	ND	ND
Comp G	ND	ND	ND	ND	ND
Comp H	26	ND	0.012	0.010	0.014
Comp I	7.7	ND	0.068	0.57	0.037
Detection Limits	1.0	0.0050	0.0050	0.0050	0.0050

ND = Non-detectable.

* Organic lead was non-detectable.

** Reactivity, Corrosivity and Ignitability test: See attached laboratory results.

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

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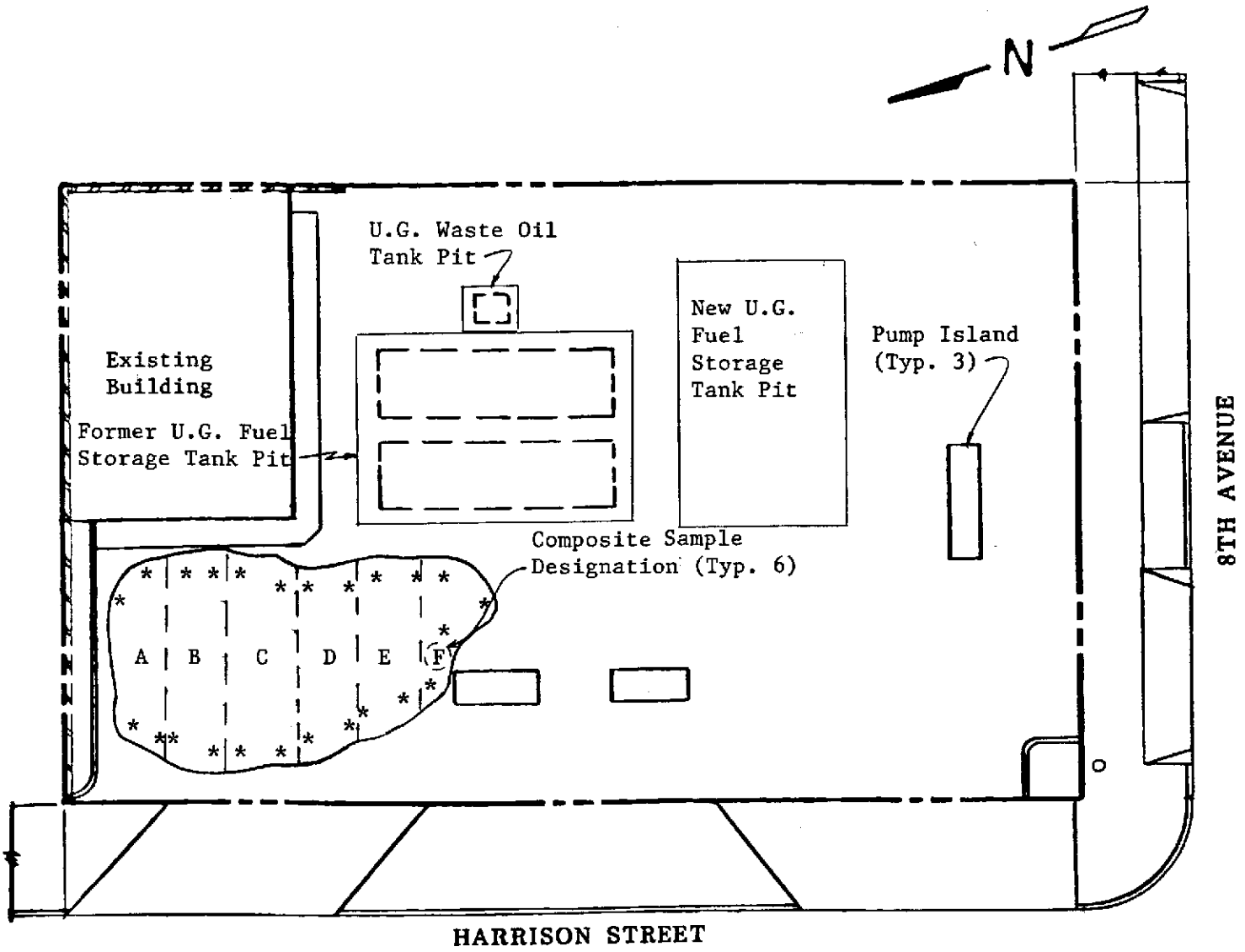

SITE PLAN
Figure 1

0 20 40
Approx. scale feet

LEGEND

* Sample Point Location

Unocal S/S #0752
800 Harrison Street
Oakland, CA

KAPREALIAN ENGINEERING, INC.
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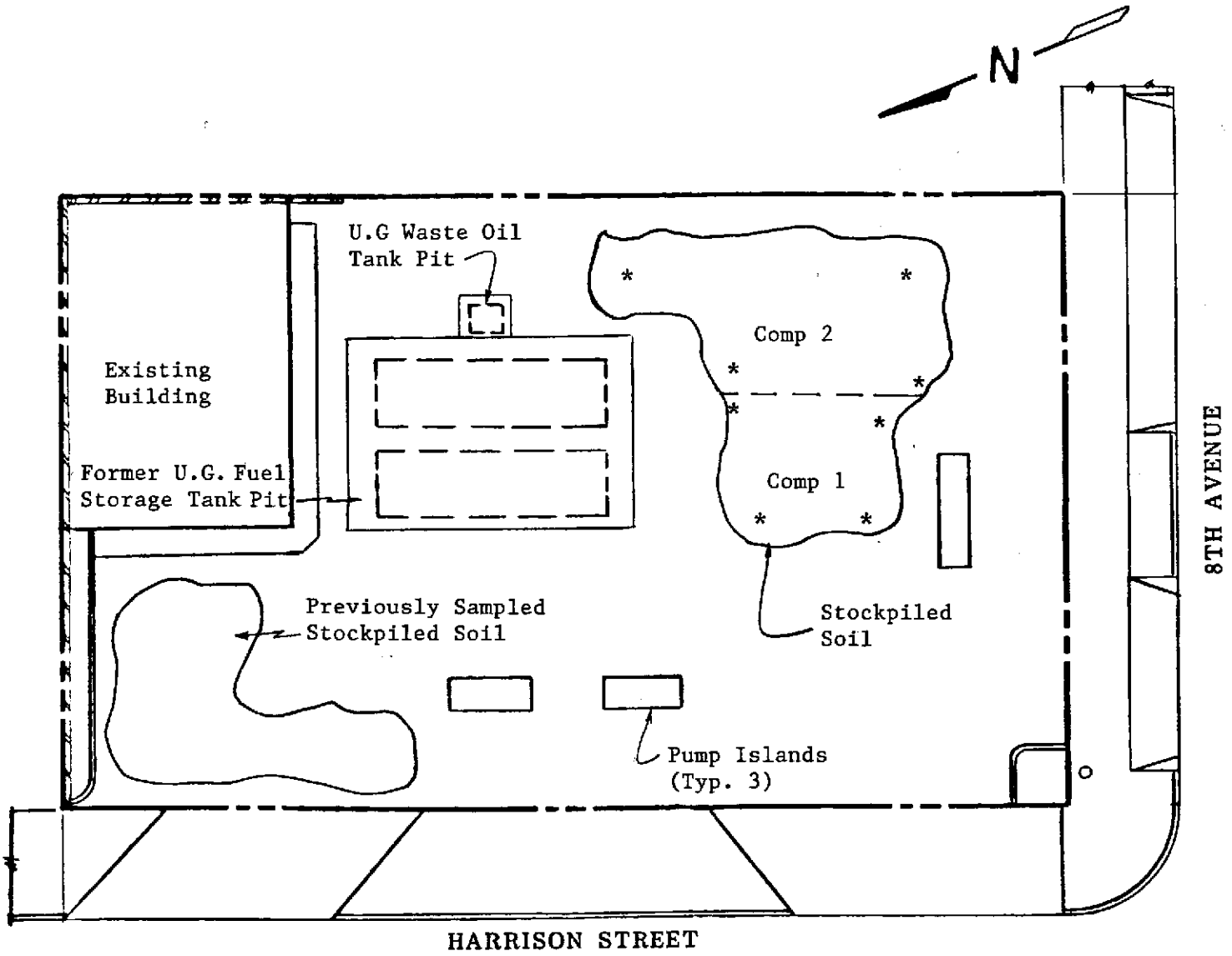

SITE PLAN
Figure 2

0 20 40
Approx. scale feet

LEGEND

* Sample Point Location

Unocal S/S #0752
800 Harrison Street
Oakland, CA

KAPREALIAN ENGINEERING, INC.
Consulting Engineers
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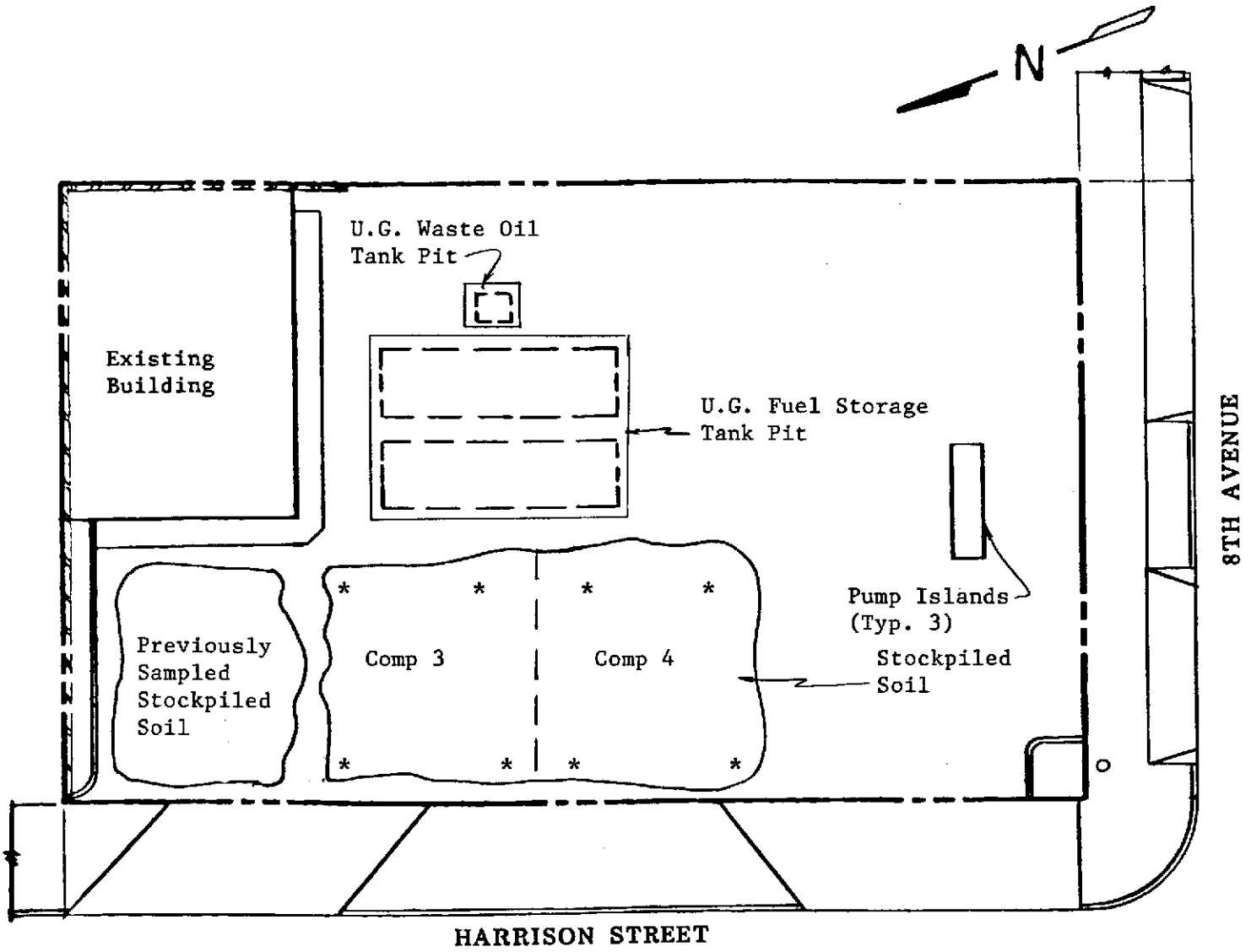


SITE PLAN
Figure 3

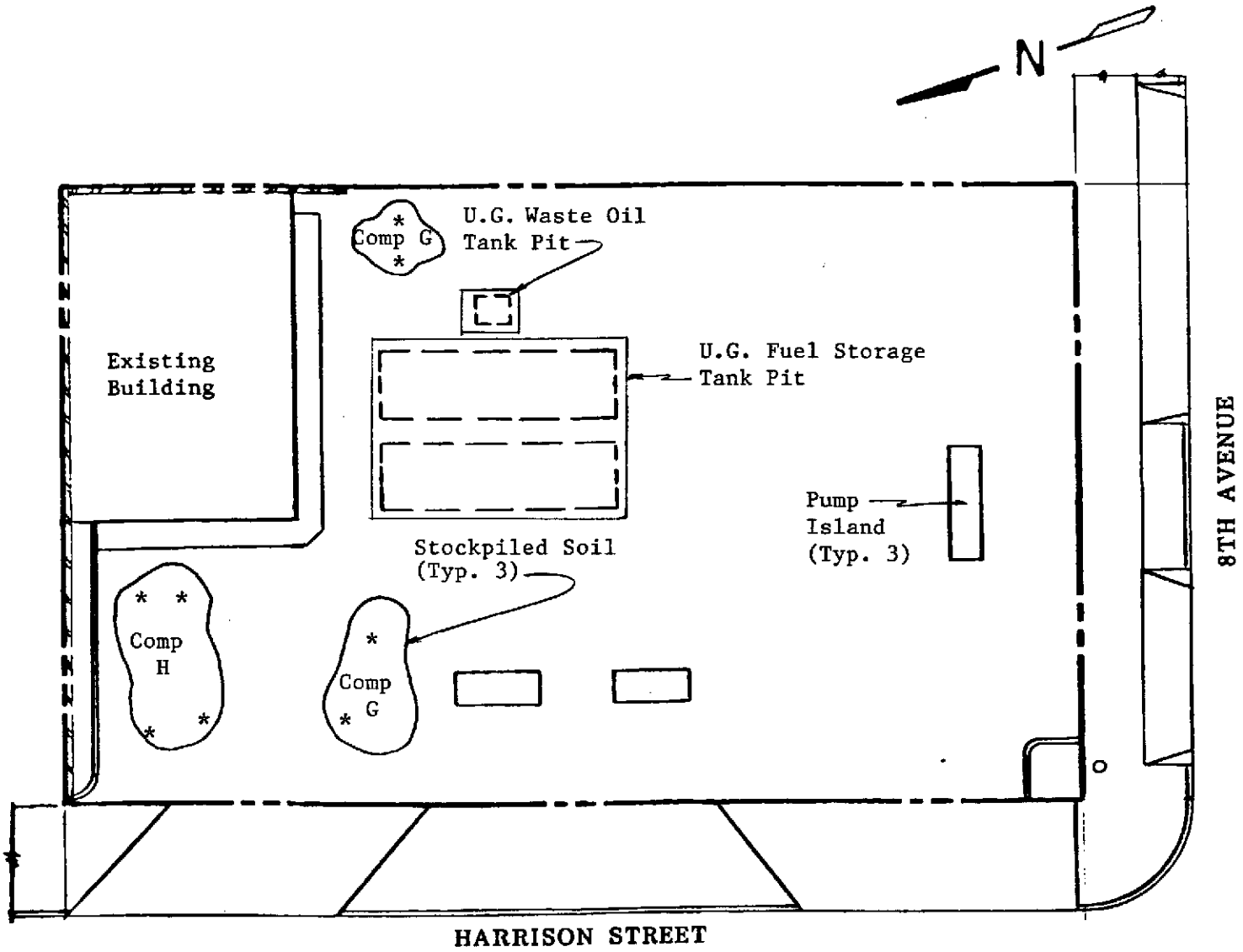
0 20 40
Approx. scale feet

LEGEND

* Sample Point Location

Unocal S/S #0752
800 Harrison Street
Oakland, 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 4

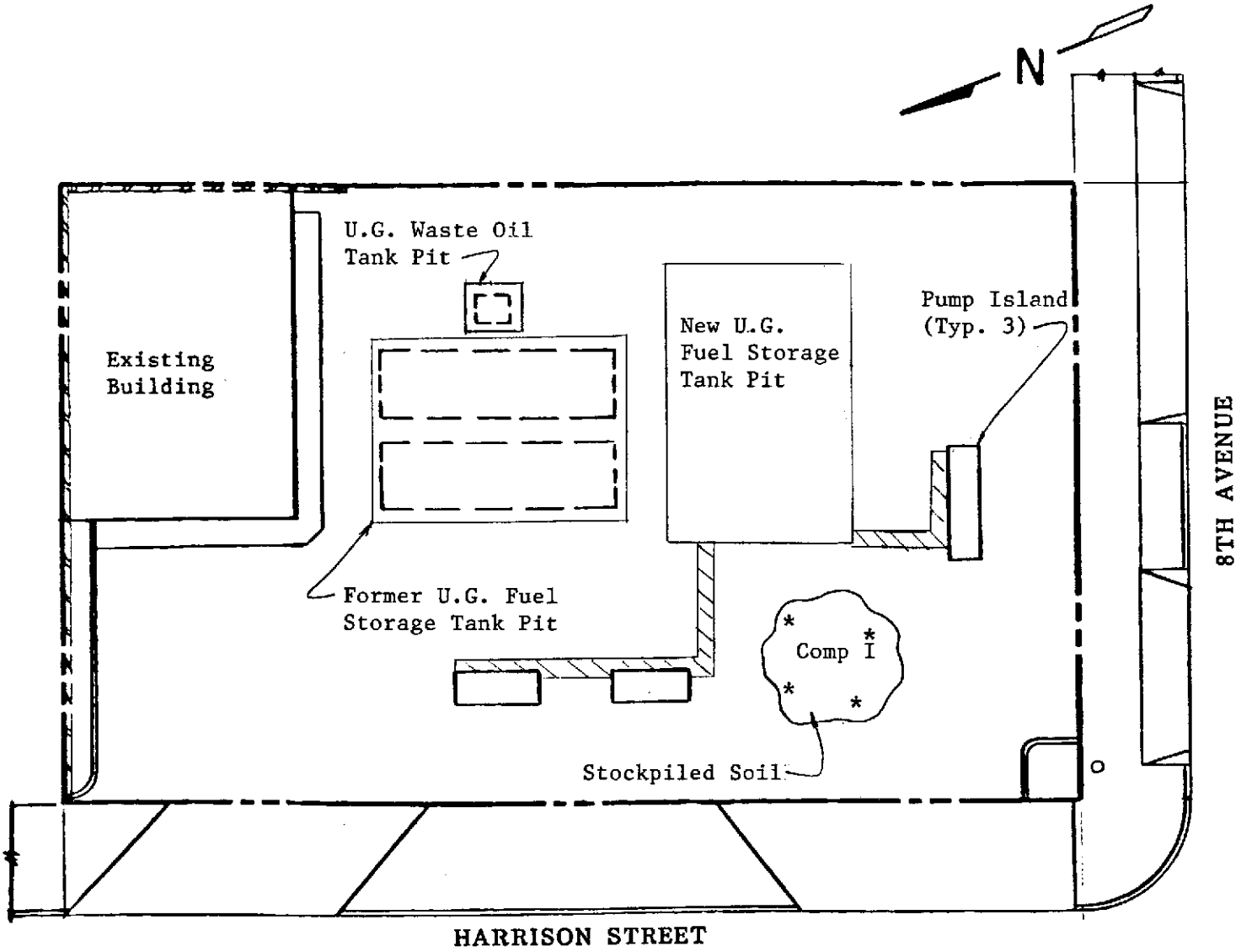
0 20 40
Approx. scale feet

LEGEND

* Sample Point Location

Unocal S/S #0752
800 Harrison Street
Oakland, 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 5

0 20 40
Approx. scale feet

LEGEND

* Sample Point Location

Unocal S/S #0752
800 Harrison Street
Oakland, 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, 800 Harrison St., Oakland	Sampled:	Nov 12, 1990
P.O. Box 996	Matrix Descript:	Soil	Received:	Nov 12, 1990
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Nov 12, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #:	011-0388 A-B	Reported:	Nov 13, 1990

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)
011-0388 AB	Comp A	51	N.D.	N.D.	0.022	0.19
011-0389 AB	Comp B	43	N.D.	N.D.	0.012	0.13
011-0390 AB	Comp C	270	0.10	1.3	2.7	34
011-0391 AB	Comp D	200	0.026	0.66	1.5	17
011-0392 AB	Comp E	150	0.022	0.45	0.96	12
011-0393 AB	Comp F	160	0.018	0.50	1.3	14
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

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

110388.KEI <1>

SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 800 Harrison St., Oakland	Sampled:	Nov 12, 1990
P.O. Box 996	Sample Descript:	Soil	Received:	Nov 12, 1990
Benicia, CA 94510	Analysis Method:	California LUFT Manual, 12/87	Extracted:	Nov 12, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #:	011-0391 AB	Analyzed:	Nov 12, 1990
			Reported:	Nov 13, 1990

ORGANIC LEAD

Sample Number	Sample Description	Sample Results mg/kg (ppm)
011-0391 AB	Comp D	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

110388.KEI <2>

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Haig

WITNESSING AGENCY:

SITE NAME & ADDRESS: Unocal - Oakland, 800 Harrison St

ANALYSES REQUESTED: TPH-G; BTXE; Organic Lead

TURN AROUND TIME: 24 Hrs PRIORITY

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-G	BTXE	Organic Lead
CompA	11/12		✓			✓	2	STOCKPILE	✓	✓	
CompB	11/12		✓			✓	2		✓	✓	
CompC	11/12		✓			✓	2		✓	✓	
CompD	11/12		✓			✓	2		✓	✓	✓
CompE	11/12		✓			✓	2		✓	✓	
CompF	11/12		✓			✓	2		✓	✓	

REMARKS: Please Fax the results

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Haig Kapreal	11 12 15:35	
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? NO
4. Were samples in appropriate containers and properly packaged? ✓

Signature	Title	Date
	SR	11/12

SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 800 Harrison St., Oakland	Sampled:	Nov 20, 1990
P.O. Box 996	Matrix Descript:	Soil	Received:	Nov 21, 1990
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Nov 21, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #:	011-0726 A-B	Reported:	Nov 21, 1990

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)
011-0726 A-B	Comp 1	12	N.D.	N.D.	0.0087	0.065
011-0727 A-B	Comp 2	5.3	N.D.	0.013	0.011	0.043
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

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

110726.KEI <1>

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Tom S. Kaprealian

WITNESSING AGENCY:

SITE NAME & ADDRESS: Unocal - Oakland
800 Harrison St

ANALYSES REQUESTED: TPH-G; BTXE; 8015/8020

TURN AROUND TIME: 24 hrs.

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-G	BTXE	8015/8020	REMARKS
Comp. 1	11-20-90		✓			✓	2	Stockpile	✓	✓	011107R1AB	Please results by 4:30 P.M. on 11-21
Comp. 2	11-20-90		✓			✓	2	Stockpile	✓	✓	011107R7AB	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tom S. Kaprealian	11-4-90	
Tom Murphy	11/21/90 855	

The following MUST BE completed by the laboratory accepting samples for analysis:

1. Have all samples received for analysis been stored in ice? yes
2. Will samples remain refrigerated until analyzed? yes
3. Did any samples received for analysis have head space? no
4. Were samples in appropriate containers and properly packaged? yes

B. M. — Signature; VP — Title; 11/21 — Date

SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 800 Harrison St., Oakland	Sampled:	Nov 20, 1990
P.O. Box 996	Sample Descript:	Soil, Comp 1	Relogged:	Nov 28, 1990
Benicia, CA 94510			Extracted:	
Attention: Mardo Kaprealian, P.E.	Lab Number:	#0110726 A-B	Analyzed:	Nov 28, 1990
			Reported:	Nov 29, 1990

LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
REACTIVITY		
Cyanide	1.0	N.D.
Sulfide	10.0	N.D.
Reaction with water	NA	None
CORROSIVITY	NA	8.3
IGNITABILITY	NA	>100°c

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

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Tom S. Mascarenas

WITNESSING AGENCY:

SITE NAME & ADDRESS: Chevron - Concord
800 Thompson St

ANALYSES REQUESTED: TPH-G; BTXE

TURN AROUND TIME: 24 hrs.

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	REMARKS
Comp. 1	11-20-90		✓			✓	2	Stockpile	0110926AB; Please results by 4:30 PM. on 11-21
Comp. 2	11-20-90		✓			✓	2	Stockpile	0110727AB

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tom S. Mascarenas	11-21-90	
Tom McKay	11/21/90 855	Bill C. Ty

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?
4. Were samples in appropriate containers and properly packaged?

Signature | Title | Date

SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 800 Harrison St., Oakland	Sampled:	Dec 3, 1990
P.O. Box 996	Matrix Descript:	Soil	Received:	Dec 3, 1990
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Dec 3, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #:	012-0011 A-B	Reported:	Dec 4, 1990

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)
012-0011 A-B	Comp 3	1.4	0.0078	0.015	0.0064	0.026
012-0012 A-B	Comp 4	7.4	0.0056	0.0078	N.D.	0.022
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

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

120011.KEI <1>

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Tom S Mascarenas
WITNESSING AGENCY

SITE NAME & ADDRESS: UNOCAL - Oakland #0752, 800 Harrison St. Oakland, CA

ANALYSES REQUESTED: TPH-G; BTEX

TURN AROUND TIME: 8 hrs. Need results by 0800 12/4/90

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	REMARKS
Comp 3	12/3/90		✓			✓	2	Stockpile	012001 AB
Comp 4	12/3/90		✓			✓	2	Stockpile	012002 AB

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tom Mascarenas	12/3 4:40	
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? Yes
2. Will samples remain refrigerated until analyzed? Yes
3. Did any samples received for analysis have head space? No
4. Were samples in appropriate containers and properly packaged? Yes

Signature | Title: Lab Tech | Date: 12-3-90

SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 800 Harrison St., Oakland	Sampled:	Dec 7, 1990
P.O. Box 996	Matrix Descript:	Soil	Received:	Dec 7, 1990
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Dec 7, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #:	012-0138	Reported:	Dec 10, 1990

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)
012-0138	G	N.D.	N.D.	N.D.	N.D.	N.D.
012-0139	H	N.D.	N.D.	N.D.	N.D.	N.D.
012-0140	I	N.D.	N.D.	N.D.	N.D.	N.D.
012-0141	J	N.D.	N.D.	N.D.	N.D.	N.D.
012-0142	K	N.D.	N.D.	N.D.	N.D.	N.D.
012-0143	L	N.D.	N.D.	N.D.	N.D.	N.D.
012-0144	M	N.D.	N.D.	N.D.	N.D.	N.D.
012-0145	N	N.D.	N.D.	N.D.	N.D.	N.D.
012-0146	O	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

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

120138.KEI <1>

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Craig

WITNESSING AGENCY:

SITE NAME & ADDRESS: Unocal - Oakland, 800 Harrison Street

ANALYSES REQUESTED: TPH-D; BTXE; 8020/8260

TURN AROUND TIME: 24 Hrs

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	REMARKS
G	12/7		✓		✓		1	Exc. Soil (New Pit)	Please Fax the results
H	12/7		✓		✓		1		
I	12/7		✓		✓		1		
J	12/7		✓		✓		1		
K	12/7		✓		✓		1		
L	12/7		✓		✓		1		
M	12/7		✓		✓		1		
N	12/7		✓		✓		1		
O	12/7		✓		✓		1		

Relinquished by: (Signature) Craig Kewell	Date/Time 12/7 4:45	Received by: (Signature) Jean Ulmer
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
...hed 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? NO
4. Were samples in appropriate containers and properly packaged? ✓

Signature	Title	Date
[illegible]	SR	12/7

SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 800 Harrison St., Oakland	Sampled:	Dec 13, 1990
P.O. Box 996	Matrix Descript:	Soil	Received:	Dec 13, 1990
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Dec 13, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #:	012-0296 A-B	Reported:	Dec 14, 1990

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)
012-0296 A-B	Comp G	N.D.	N.D.	N.D.	N.D.	N.D.
012-0297 A-B	Comp H	26	N.D.	0.012	0.014	0.010
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

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

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Harry

WITNESSING AGENCY:

SITE NAME & ADDRESS: Unocal - Oakland, 800 Harrison St.

ANALYSES REQUESTED: TPH-D; BTXE

TURN AROUND TIME: 24 Hrs Priority

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-D	BTXE	REMARKS
Comp G	12/13		✓			✓	2	STOCKPILE	✓	✓	0120296 AB 297 S
Comp H	12/13		✓			✓	2	STOCKPILE	✓	✓	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	12/13 3:40PM	[signature]
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
linquished 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? NO
4. Were samples in appropriate containers and properly packaged? ✓

Signature	Title	Date
[signature]	SR	12/13

SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 800 Harrison St., Oakland	Sampled:	Dec 13, 1990
P.O. Box 996	Matrix Descript:	Soil	Received:	Dec 13, 1990
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Dec 13, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #:	012-0298	Reported:	Dec 14, 1990

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)
012-0298	P	N.D.	N.D.	N.D.	N.D.	N.D.
012-0299	Q	N.D.	N.D.	N.D.	N.D.	N.D.
012-0300	R	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

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

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Haig

WITNESSING AGENCY:

SITE NAME & ADDRESS: Unocal - Oakland
800 Harrison St.

ANALYSES REQUESTED: TPH-D, BTXE

TURN AROUND TIME: 24 Hrs

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION
P	12/13		✓		✓		1	Exc. Soil (New Pit)
Q	12/13		✓		✓		1	↓
R	12/13		✓		✓		1	↓

REMARKS: 0120298
299
300

Relinquished by: (Signature) Haig Kaprealian	Date/Time 12/13 3:40	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
inquished 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? NO
4. Were samples in appropriate containers and properly packaged? ✓

Signature	Title	Date
	SR	12/13

SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 800 Harrison St., Oakland	Sampled:	Dec 20, 1990
P.O. Box 996	Sample Descript.:	Soil, Comp I	Received:	Dec 21, 1990
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Dec 21, 1990
Attention: Mardo Kaprealian, P.E.	Lab Number:	012-0464 A-D	Reported:	Dec 26, 1990

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	7.7
Benzene	0.0050	N.D.
Toluene	0.0050	0.068
Ethyl Benzene	0.0050	0.037
Xylenes	0.0050	0.57

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
Project Manager

Please Note:
The above sample does not appear to contain gasoline.

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Haig

WITNESSING AGENCY:

SITE NAME & ADDRESS: Unocal - Oakland, 800 Harrison Street

ANALYSES REQUESTED: TPH-D; BTXE

TURN AROUND TIME: 24 Hrs

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-D	BTXE	REMARKS
CompI	12/20		✓			✓	4	STOCKPILE	✓	✓	01204647-D

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Haig [illegible]	[illegible]	[illegible]
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[illegible]nquished 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? [illegible]
2. Will samples remain refrigerated until analyzed? [illegible]
3. Did any samples received for analysis have head space? [illegible]
4. Were samples in appropriate containers and properly packaged? [illegible]

[illegible] Signature | [illegible] Title | [illegible] Date

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

KEI-J90-1103.R3
February 4, 1991

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

Attention: Mr. Rick Sisk

RE: Waste Oil Stockpiled Soil Sampling for
Unocal Service Station #0752
800 Harrison Street
Oakland, California

Dear Mr. Sisk:

This letter report summarizes the results of the waste oil 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 November 12, 1990, one composite soil sample, labeled Comp WOA, was collected from approximately 25 cubic yards of soil excavated from the waste oil tank pit during tank removal and sampling. This composite sample consisted of four individual grab samples taken at various locations and depths ranging from 1 to 2 feet and composited as one sample by the lab. The sample was 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. The sample was analyzed at Sequoia Analytical Laboratory in Concord, California, and was accompanied by properly executed Chain of Custody documentation.

The composite sample was analyzed to determine concentrations of total organic halides; for PCB's using EPA method 8080, and for metals - arsenic, barium, cadmium, chromium, lead, copper, mercury, nickel, selenium, silver, thallium, vanadium and zinc. The analytical results of composite soil sample (Comp WOA) are shown on the attached Table 1, and are as indicated on the attached laboratory analyses.

Based on the levels in the stockpiled soil, the soil was disposed of at Chemical Waste, Inc., an approved Class I disposal site, by Dillard Trucking.

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

Sincerely,

Kaprealian Engineering, Inc.

Kristin B. Mascarenas

\jad

Attachments: Table 1
Laboratory Results
Chain of Custody documentation

KEI-J90-1103.R3
February 4, 1991

TABLE 1

SUMMARY OF LABORATORY ANALYSES

(Results in mg/kg)
(Collected on November 12, 1990)

Parameter	Comp WOA
Total Organic Halides	80
Arsenic	4.1
Barium	390
Cadmium	ND
Chromium	46
Copper	32
Lead	1,600
Mercury	0.34
Nickel	28
Selenium	ND
Silver	ND
Thallium	ND
Vanadium	30
Zinc	290
EPA method 8080	ND

ND = Non-detectable.

SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 800 Harrison St., Oakland	Sampled:	Nov 12, 1990
P.O. Box 996	Sample Descript:	Soil, Comp WOA	Received:	Nov 13, 1990
Benicia, CA 94510			Extracted:	Nov 15, 1990
Attention: Mardo Kaprealian, P.E.	Lab Number:	011-0417	Analyzed:	11/15-11/29/90
			Reported:	Nov 29, 1990

LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Total Organic Halides	10	80
Arsenic	0.25	4.1
Barium	5.0	390
Cadmium	0.50	N.D.
Chromium	0.25	46
Copper	0.50	32
Lead	25	1,600
Mercury	0.010	0.34
Nickel	2.5	28
Selenium	0.25	N.D.
Silver	0.50	N.D.
Thallium	0.25	N.D.
Vanadium	2.5	30
Zinc	0.50	290

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

SEQUOIA ANALYTICAL

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.	Client Project ID:	Unocal, 800 Harrison St., Oakland	Sampled:	Nov 12, 1990
P.O. Box 996	Sample Descript:	Soil, Comp WOA	Received:	Nov 13, 1990
Benicia, CA 94510	Analysis Method:	EPA 8080	Extracted:	Nov 19, 1990
Attention: Mardo Kaprealian, P.E.	Lab Number:	011-0417	Analyzed:	Nov 26, 1990
			Reported:	Nov 29, 1990

POLYCHLORINATED BIPHENYLS (EPA 8080)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
PCB 1016	250	N.D.
PCB 1221	250	N.D.
PCB 1232	250	N.D.
PCB 1242	250	N.D.
PCB 1248	250	N.D.
PCB 1254	250	N.D.
PCB 1260	250	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Haig

WITNESSING AGENCY:

SITE NAME & ADDRESS: Unocal - Oakland
800 Harrison St

TURN AROUND TIME: Regular

ANALYSES REQUESTED: PCB's, Total Organic Halides, Arsenic, Barium, Cadmium, Chromium, Copper-Lead, Mercury, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc

REMARKS

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION
CompWOA	11/12		✓			✓	2	Waste Oil Stockpile

0110417

Relinquished by: (Signature) — Date/Time: 11/12 15:35 — Received by: (Signature)

Relinquished by: (Signature) — Date/Time: 11/13 10:30 — 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? no
4. Were samples in appropriate containers and properly packaged? ✓

Signature — Title: SR — Date: 11/12