



KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P.O. BOX 996 • BENICIA, CA 94510

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

521

KEI-J91-1004.R2
December 17, 1991

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

Attention: Mr. Ron Bock

RE: Stockpiled Soil Sampling for
Unocal Service Station #5043
449 Hegenberger Road
Oakland, California

*Send out letter
transfer a start LOP as*

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 October 25, 1991, soil samples from approximately sixty cubic yards of stockpiled soil (that had been generated during product piping modification) were collected to determine proper disposal of the soil. One composite soil sample (designated as Comp A) was taken. Each composite sample consisted of four individual grab samples taken at various locations and at depths of approximately 2 feet into the stockpile. 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 22, 1991, Kaprealian Engineering, Inc. (KEI) returned to the site to collect soil samples from approximately 50 cubic yards of stockpiled soil that had been additionally generated during canopy support modifications. One composite sample (designated as Comp B) was taken. On this same date, one composite soil sample (designated as Comp 1) was collected from approximately 60 cubic yards of aerated stockpiled soil previously represented by sample Comp A. Each sample was collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 2.

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 A was analyzed for TPH as diesel using EPA method 3550 in conjunction with modified 8015 and sample Comp 1 was analyzed for reactivity, corrosivity, ignitability and STLC lead.

The analytical results of soil sample Comp A indicated a level of TPH as gasoline at 1,100 ppm and a level of TPH as diesel at 340 ppm. The analytical result of soil sample Comp 1, collected after aeration of the stockpile represented by Comp A, indicates TPH as gasoline at 63 ppm. The analytical result of soil sample Comp B indicated a level of TPH as gasoline at 62 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 110 cubic yards of stockpiled soil, represented by samples Comp 1 and Comp B, were disposed of at BFI Waste Systems in Livermore, California (an approved Class III disposal site) by Dillard Trucking. However, prior to loading and off-hauling of the stockpiled soil, KEI recommended that if obvious isolated high contamination was detected within the stockpiled soil, that portion of the soil be separately stockpiled for further treatment and sampling.

DISTRIBUTION

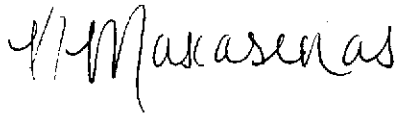
A copy of this report should be sent to Mr. Barney Chan of the Alameda County Health Care Services Agency, and to the Regional Water Quality Control Board, San Francisco Bay Region.

KEI-J91-1004.R2
December 17, 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.



Kristin B. Mascarenas

\kbm

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

KEI-J91-1004.R2
December 17, 1991

TABLE 1

SUMMARY OF LABORATORY ANALYSES

(Collected on October 5 & November 22, 1991)

<u>Sample</u>	<u>TPH as Diesel</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethylbenzene</u>
Comp A	340	1,100	7.6	34	180	28
Comp B	--	62	0.16	0.54	0.23	0.32
Comp 1	--	63	ND	0.053	0.11	0.060
Detection Limits	1.0	1.0	0.0050	0.0050	0.0050	0.0050

* STLC lead was 1.0 ppm; reactivity, corrosivity, and ignitability: see attached analyses. TCLP Lead was 0.014 ppm.

ND = Non-detectable.

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

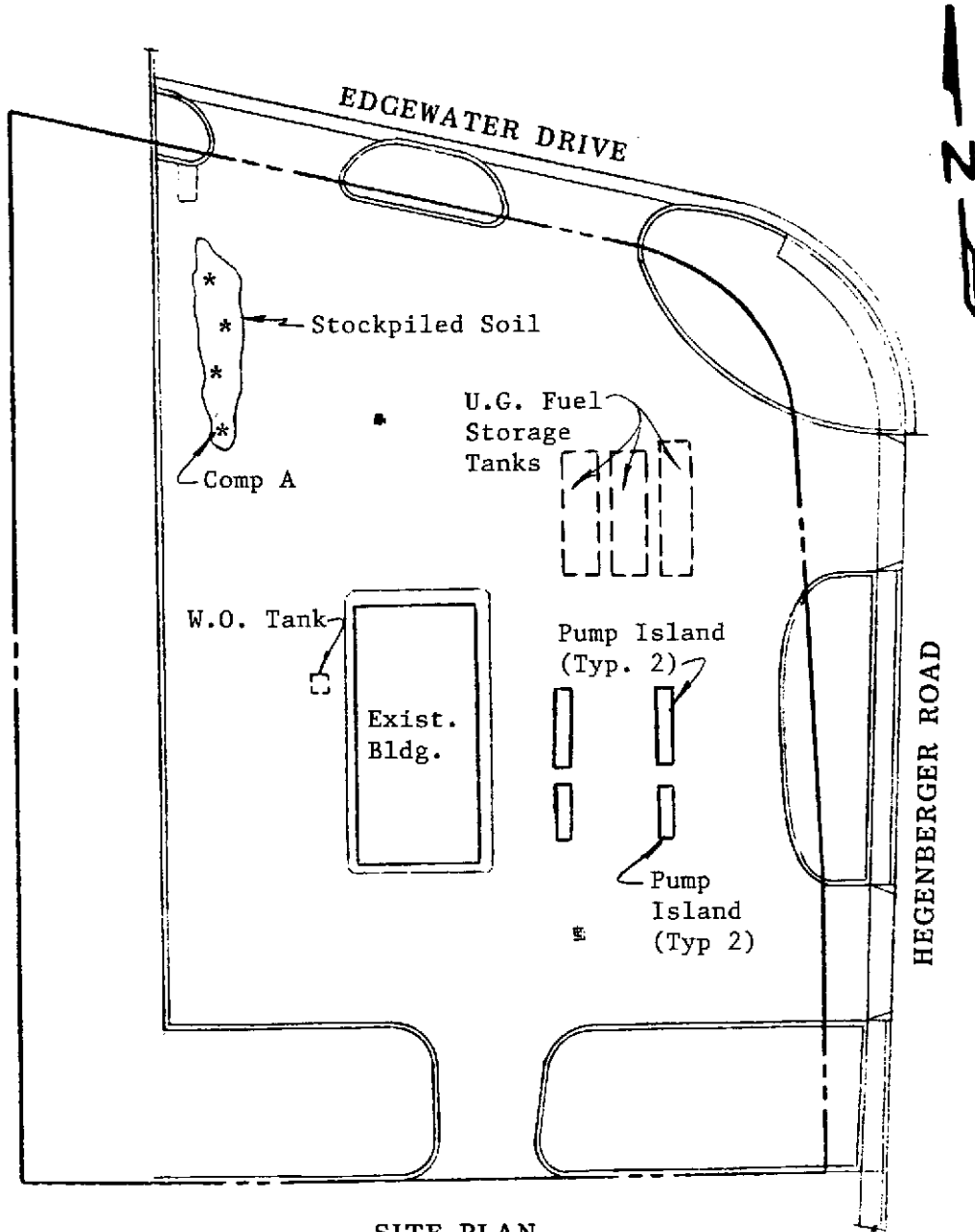


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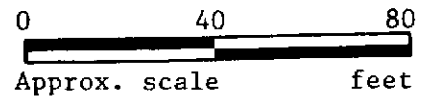


SITE PLAN

Figure 1

LEGEND

* Sample Point Location

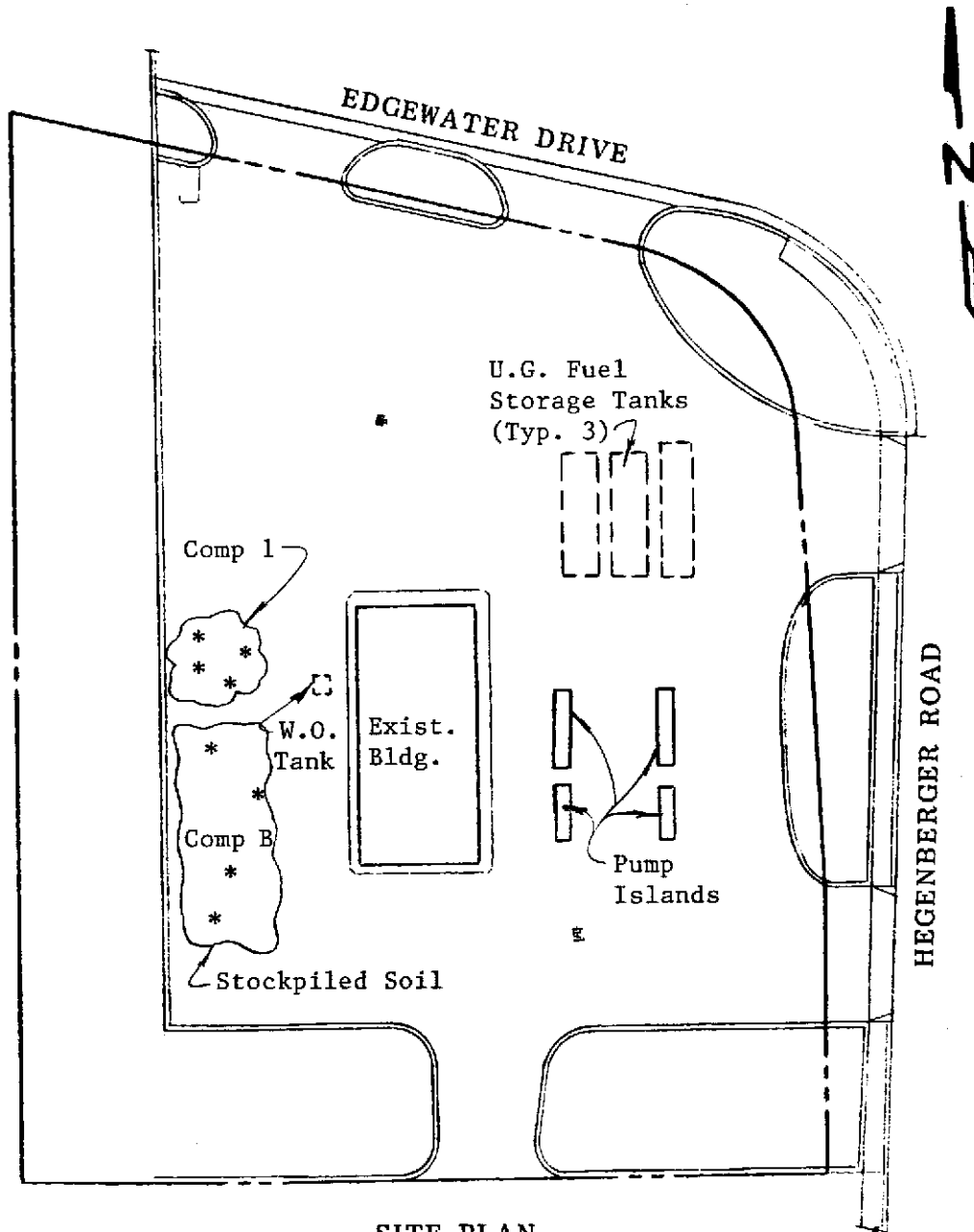


Unocal S/S #5043
449 Hegenberger Road
Oakland, CA



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Consulting Engineers

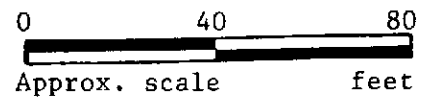
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SITE PLAN
Figure 2

LEGEND

* Sample Point Location



Unocal S/S #5043
449 Hegenberger Road
Oakland, CA



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.	Client Project ID: Unocal #5043/Hegenberger, Oakland	Sampled: Oct 25, 1991
P.O. Box 996	Sample Descript.: Soil, Comp A	Received: Oct 28, 1991
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Oct 28, 1991
Attention: Mardo Kaprealian, P.E.	Lab Number: 110-1076	Reported: Oct 29, 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	1,100
Benzene.....	0.0050	7.6
Toluene.....	0.0050	34
Ethyl Benzene.....	0.0050	28
Xylenes.....	0.0050	180

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.

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Julia R. Malerstein
Project Manager

Please Note:
The above sample appears to contain gasoline.



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Kaprealian Engineering, Inc. P.O. Box 996 Benicia, CA 94510 Attention: Mardo Kaprealian, P.E.	Client Project ID: Unocal #5043/Hegenberger, Oakland Matrix Descript: Soil Analysis Method: EPA 3550/8015 First Sample #: 110-1076	Sampled: Oct 25, 1991 Received: Oct 28, 1991 Extracted: Oct 28, 1991 Analyzed: Oct 28, 1991 Reported: Oct 29, 1991
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TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

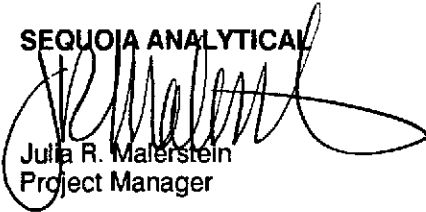
Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
110-1076	Comp A	340

Detection Limits:

1.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL


Julia R. Malerstein
Project Manager

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

Client Project ID: Unocal #5043/Hegenberger, Oakland

Attention: Mardo Kaprealian, P.E. QC Sample Group: 110-1076

Reported: Oct 29, 1991

QUALITY CONTROL DATA REPORT

SURROGATE	TPH/BTEX	TPH/BTEX	Diesel	Diesel
Method:	EPA 8015/8020	EPA 8015/8020	EPA8015	EPA8015
Analyst:	J.Fontecha	J.Fontecha	A. Tuzon	A. Tuzon
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Oct 28, 1991	Oct 28, 1991	Oct 28, 1991	Oct 28, 1991
Sample #:	BLK	110-1076	BLK	110-1076

Surrogate % Recovery:	110	110	90	110
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SEQUOIA ANALYTICAL

J. Malerstein
Julia R. Malerstein
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Kaprealian Engineering, Inc.

Client Project ID: Unocal #5043/Hegenberger, Oakland

P.O. Box 996

Benicia, CA 94510

Attention: Mardo Kaprealian, P.E. QC Sample Group: 110-1076

Reported: Oct 29, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Diesel
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA8015
Analyst:	R.H./J.F.	R.H./J.F.	R.H./J.F.	R.H./J.F.	A. Tuzon
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Oct 28, 1991	Oct 28, 1991	Oct 28, 1991	Oct 28, 1991	Oct 28, 1991
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank	Blk102891
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	0.40	0.40	0.40	1.2	10
Conc. Matrix Spike:	0.40	0.41	0.43	1.3	7.7
Matrix Spike % Recovery:	100	102	108	108	77
Conc. Matrix Spike Dup.:	0.42	0.42	0.44	1.3	7.6
Matrix Spike Duplicate % Recovery:	105	105	110	108	76
Relative % Difference:	4.9	2.4	2.3	0	1.3

Laboratory blank contained the following analytes: None Detected

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Julia R. Malerstein
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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CHAIN OF CUSTODY

SAMPLER <i>L.M. Bradish</i>		SITE NAME & ADDRESS <i>Unocal #5043 Hegenberger & Colquhoun Oakland</i>				ANALYSES REQUESTED <i>TPH-GABKE TPH-D</i>				TURN AROUND TIME: <i>24 HR</i>
WITNESSING AGENCY										

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION					REMARKS
<i>Comp A</i>	<i>10-25-91</i>		<i>✓</i>					<i>4 PIPE TRENCH STRIP</i>	<i>✓</i>	<i>✓</i>			<i>1101076 AD</i>

Relinquished by: (Signature) <i>L.M. Bradish</i>	Date/Time <i>10/25 555</i>	Received by: (Signature) <i>J.R. Malin</i>	The following MUST BE completed by the laboratory accepting samples for analysis: 1. Have all samples received for analysis been stored in ice? <i>yes</i> 2. Will samples remain refrigerated until analyzed? <i>yes</i> 3. Did any samples received for analysis have head space? <i>na</i> 4. Were samples in appropriate containers and properly packaged? <i>yes</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)	
		<i>JRM</i>	Signature
		<i>CSM</i>	Title
		<i>10/25/91</i>	Date



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Kaprealian Engineering, Inc.	Client Project ID: Unocal, Oakland, 449 Hegenberger Rd.	Sampled: Nov 22, 1991
P.O. Box 996	Matrix Descript: Soil	Received: Nov 22, 1991
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Nov 26, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #: 111-1236	Reported: Nov 27, 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)
111-1236	Comp 1	63	N.D.	0.053	0.060	0.11
111-1237	Comp B	62	0.16	0.54	0.32	2.3

Method Detection Limits:	1.0	0.0050	0.0050	0.0050	0.0050
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Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.

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Belinda C. Vega
Laboratory Director



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

Client Project ID: Unocal, Oakland, 449 Hegenberger Rd.

Attention: Mardo Kaprealian, P.E. QC Sample Group: 1111236-7

Reported: Nov 27, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020
Analyst:	R.H./J.F.	R.H./J.F.	R.H./J.F.	R.H./J.F.
Reporting Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Date Analyzed:	Nov 26, 1991	Nov 26, 1991	Nov 26, 1991	Nov 26, 1991
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	0.40	0.40	0.40	1.2
Conc. Matrix Spike:	0.36	0.37	0.39	1.2
Matrix Spike % Recovery:	90	92	98	100
Conc. Matrix Spike Dup.:	0.36	0.37	0.39	1.2
Matrix Spike Duplicate % Recovery:	90	92	98	100
Relative % Difference:	0	0	0	0

Laboratory blank contained the following analytes: None Detected

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Belinda C. Vega
Belinda C. Vega
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Kaprealian Engineering, Inc.

Client Project ID: Unocal, Oakland, 449 Hegenberger Rd.

P.O. Box 996

Benicia, CA 94510

Attention: Mardo Kaprealian, P.E. QC Sample Group: 111-0755

Reported: Nov 27, 1991

QUALITY CONTROL DATA REPORT

SURROGATE

	EPA	EPA	EPA	EPA	EPA
Method:	8015/8020	8015/8020	8015/8020	8015/8020	8015/8020
Analyst:	R.H./J.F.	R.H./J.F.	R.H./J.F.	R.H./J.F.	R.H./J.F.
Reporting Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Date Analyzed:	Nov 26, 1991	Nov 26, 1991	Nov 26, 1991	Nov 26, 1991	Nov 26, 1991
Sample #:	111-0755	111-0756	111-0757	111-0758	111-0759

Surrogate

% Recovery:	100	110	98	100	100
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Arthur G. Burton
 Arthur G. Burton
 Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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CHAIN OF CUSTODY

SAMPLER <i>Haeg</i>		SITE NAME & ADDRESS <i>Unocal - Oakland 449 Hegenberger Rd</i>						ANALYSES REQUESTED				TURN AROUND TIME: <i>24 hrs.</i>	
WITNESSING AGENCY								TPH- BTX-E					REMARKS
SAMPLE ID NO.	DATE												
<i>Comp 1</i>	<i>11/22/91</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<i>4</i>	<i>STOCKPILE</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>111236 A-D</i>		
<i>Comp B</i>	<i>11/22/91</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<i>4</i>	<i>STOCKPILE</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>111237 A-D</i>		
Relinquished by: (Signature) <i>Joseph K...</i>		Date/Time <i>11/25 1605</i>		Received by: (Signature) <i>[Signature]</i>		The following MUST BE completed by the laboratory accepting samples for analysis: 1. Have all samples received for analysis been stored in ice? <input checked="" type="checkbox"/> 2. Will samples remain refrigerated until analyzed? <input checked="" type="checkbox"/> 3. Did any samples received for analysis have head space? <i>NO</i> 4. Were samples in appropriate containers and properly packaged? <input checked="" type="checkbox"/>							
Relinquished by: (Signature)		Date/Time		Received by: (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 <i>[Signature]</i>		Title <i>SC</i>		Date <i>11/25/91</i>			



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Kaprealian Engineering, Inc.	Client Project ID: Unocal, Oakland, 449 Hegenberger Rd.	Sampled: Nov 22, 1991
P.O. Box 996	Sample Descript: Soil, Comp 1	Received: Nov 25, 1991
Benicia, CA 94510		Analyzed: 11/27-12/3/91
Attention: Mardo Kaprealian, P.E.	Lab Number: 111-1236	Reported: Dec 5, 1991

CORROSIVITY, IGNITABILITY, AND REACTIVITY

Analyte	Detection Limit	Sample Results
Corrosivity:		
pH.....	N.A.	9.4
Ignitability:		
Flashpoint (Pensky-Martens), °C.....	N.A.	> 100 °C
Reactivity:		
Sulfide, mg/kg.....	10	N.D.
Cyanide, mg/kg.....	0.50	N.D.
Reaction with water.....	N.A.	Negative

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

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Belinda C. Vega
Laboratory Director



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Kaprealian Engineering, Inc.	Client Project ID: Unocal, Oakland, 449 Hegenberger R	Sampled: Nov 22, 1991
P.O. Box 996	Sample Descript: Soil, Comp 1	Received: Nov 25, 1991
Benicia, CA 94510		Extracted: Nov 27, 1991
Attention: Mardo Kaprealian, P.E.	Lab Number: 111-1236	Analyzed: Dec 3, 1991
		Reported: Dec 5, 1991

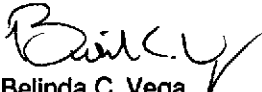
LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
---------	-------------------------	------------------------

STLC Lead	0.0050	1.0
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Analytes reported as N.D. were not present above the stated limit of detection.

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Belinda C. Vega
Laboratory Director

1111236.KEI <2>



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

Client Project ID: Unocal, Oakland, 449 Hegenberger Rd.

Attention: Mardo Kaprealian, P.E. QC Sample Group: 111-1236

Reported: Dec 5, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Lead	pH	Cyanide	Sulfide
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Method:	EPA 7421	EPA 9040	EPA 9010	EPA 9030
Analyst:	K. Anderson	J. Martinez	L. A. Colon	B.K. Samra
Reporting Units:	mg/L	NA	mg/Kg	mg/Kg
Date Analyzed:	Dec 3, 1991	Nov 27, 1991	Nov 26, 1991	Dec 2, 1991
QC Sample #:	111-1307	111-5773	111-5150	111-0075
Sample Conc.:	0.061	8.9	N.D.	N.D.
Spike Conc. Added:	0.25	NA	9.5	1300
Conc. Matrix Spike:	0.37	NA	8.4	1100
Matrix Spike % Recovery:	124	NA	88	85
Conc. Matrix Spike Dup.:	0.38	8.9	8.8	1100
Matrix Spike Duplicate % Recovery:	128	NA	93	85
Relative % Difference:	2.7	0	4.7	0

SEQUOIA ANALYTICAL

Belinda C. Vega
Belinda C. Vega
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER <u>Harj</u>		SITE NAME & ADDRESS <u>Unocal - Oakland</u> <u>449 Heegenberger Rd</u>							ANALYSES REQUESTED <u>TPH-C</u> <u>BTX-E</u>			TURN AROUND TIME: <u>24 hr.</u>	
WITNESSING AGENCY												REMARKS	
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION					
<u>Comp 1</u>	<u>11/22/91</u>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<u>4</u>	<u>STOCKPILE</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<u>111236 A-D</u>
<u>Comp B</u>	<u>11/22/91</u>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<u>4</u>	<u>STOCKPILE</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<u>111237 A-D</u>
Relinquished by: (Signature) <u>Harj</u>		Date/Time <u>11/25 1605</u>		Received by: (Signature) <u>[Signature]</u>		<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>							
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 <u>[Signature]</u>		Date <u>11/25/91</u>		Title <u>SC</u>		Date <u>[Signature]</u>							



SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.	Client Project ID: Unocal, Oakland, 449 Hegenberger Rd.	Sampled: Nov 22, 1991
P.O. Box 996	Sample Descript: TCLP Extract of Soil, Comp 1	Received: Nov 25, 1991
Benicia, CA 94510		Extracted: Dec 12, 1991
Attention: Mardo Kaprealian, P.E.	Lab Number: #1111236	Analyzed: Dec 13, 1991
		Reported: Dec 16, 1991

LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
TCLP Lead	0.0050	0.014

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

SEQUOIA ANALYTICAL

Belinda C. Vega
 Belinda C. Vega
 Laboratory Director



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Kaprealian Engineering, Inc.

Client Project ID: Unocal, Oakland, 449 Hegenberger Rd.

P.O. Box 996

Benicia, CA 94510

Attention: Mardo Kaprealian, P.E. QC Sample Group: 111-1236

Reported: Dec 16, 1991

QUALITY CONTROL DATA REPORT

ANALYTE

Lead

Method: EPA 239.2
Analyst: N. Herrera
Reporting Units: mg/L
Date Analyzed: Dec 13, 1991
QC Sample #: 111-5456

Sample Conc.: 0.014

Spike Conc.
Added: 0.050

Conc. Matrix
Spike: 0.062

Matrix Spike
% Recovery: 96

Conc. Matrix
Spike Dup.: 0.061

Matrix Spike
Duplicate
% Recovery: 94

Relative
% Difference: 1.6

SEQUOIA ANALYTICAL

Belinda C. Vega
Belinda C. Vega
Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

#1111236.KEI <2>



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INVOICE NO. 12668C
Dec 16, 1991

I N V O I C E F O R A N A L Y T I C A L S E R V I C E S

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

P.O. Number: ---
Client Code: KEI
Report Number: 1111236
Project Manager: BV

Attention: Mardo Kaprealian

Qty	Description of Service	Unit Price	Amount
Project: Unocal/ 449 Hegenberger Rd., Oakland Date samples received: 11/25			
1	TCLP Extraction, 2 day	200.00	200.00
1	Lead (Total), 2 day	38.00	38.00

Invoice Total: \$ 238.00

Prices shown include all discounts applicable to this transaction. For proper credit, please show invoice number on your remittance. Payment is due 30 days from invoice date; overdue balances are subject to 1.5% interest per month. Questions regarding this invoice should be directed to Evelyn DeBlock in Accounts Receivable, or to the Project Manager listed above.



KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLE ID NO. Hardy		SITE NAME & ADDRESS Unocal - Oakland				ANALYSIS REQUESTED		TURN AROUND TIME: 24 hr
WITNESSING AGENCY		449 Heegenberger Rd				PH-LE		

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	PH	LE	REMARKS
Comp A	11/22/91		✓			✓	4	STOCKPILE	✓	✓	111236 A-D
Comp B	11/22/91		✓			✓	4	STOCKPILE	✓	✓	111237 A-D

Relinquished by: (Signature) <i>[Signature]</i>	Date/Time 11/25 11:05	Received by: (Signature) <i>[Signature]</i>	The following MUST BE completed by the laboratory accepting samples for analysis: 1. Have all samples received for analysis been stored in ice? <input checked="" type="checkbox"/> 2. Will samples remain refrigerated until analyzed? <input checked="" type="checkbox"/> 3. Did any samples received for analysis have head space? NO 4. Were samples in appropriate containers and properly packaged? <input checked="" type="checkbox"/>
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
		<i>[Signature]</i>	Signature
		11/25/91	Date
		<i>[Signature]</i>	Date