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

Attention: Mr. Edward C. Ralston

RE: Soil Sampling Report
Unocal Service Station #6419
6401 Dublin Boulevard
Dublin, California

HAZMAT 93 KIDV 15 PH 3: 31

Dear Mr. Ralston:

This report summarizes the soil sampling performed by Kaprealian Engineering, Inc. (KEI) during the removal and replacement of the underground tanks and piping at the referenced site. All work was performed in compliance with the guidelines established by the Regional Water Quality Control Board (RWQCB) and the Alameda County Health Care Services (ACHCS) Agency.

The scope of the work performed by KEI consisted of the following:

Coordination with regulatory agencies

Collection of soil samples from the fuel and waste oil storage tank pit excavations, from the former septic tank pit, from beneath the former product dispensers, and from the product piping trenches

Collection of ground water samples from the fuel storage tank pit

Delivery of soil and water samples, including proper Chain of Custody documentation, to a certified analytical laboratory

Technical review and preparation of this report

SITE DESCRIPTION AND BACKGROUND

The subject site contains a Unocal service station facility. A Location Map and a Site Plan are attached to this report. No previous subsurface work at the site is known to KEI.

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FIELD ACTIVITIES

KEI's field work was initiated on September 7, 1993, when three underground storage tanks were removed from the site. The tanks consisted of one 10,000 gallon regular unleaded gasoline storage tank, one 10,000 gallon super unleaded gasoline storage tank, and one 550 gallon waste oil storage tank. The tanks were made of steel, and no apparent holes or cracks were observed in any of the tanks. Tank removal and soil sampling were performed in the presence of Mr. Jeff Shapiro of the ACHCS. Mr. Ron Johansen of the Dougherty Fire Authority was also present during tank removal operations.

Eight soils samples, labeled D1 through D8, were collected from beneath the product dispensers at depths ranging from 2.5 feet to 5.5 feet below grade. Seven soil samples, labeled P1 through P7, were collected from the product piping trenches at depths ranging from 3 feet to 7 feet below grade. These samples were collected by the use of a driven tube-type soil sampler. In addition, two soil samples, labeled ST1 and ST2, were collected from the former septic tank pit located on the west side of the existing building. former septic tank contained approximately 400 gallons of liquid that was previously sampled and analyzed for proper disposal prior The former underground septic tank had a 6,000 to tank removal. gallon capacity and was physically removed from the site on September 11, 1993. The tank was made of steel, and no holes or cracks were observed in the tank. The soil samples ST1 and ST2 were collected from bulk material excavated by backhoe at depths of approximately 10 feet below grade. All soil samples were placed in clean, two-inch diameter brass tubes, then sealed with aluminum foil, plastic caps and tape, labeled, and stored in a cooled ice chest for subsequent delivery to a state-certified laboratory. Sample point locations are shown on the attached Figure 1.

KEI returned to the site on September 8, 1993, in order to collect the required soil samples from the fuel and waste oil storage tank pit excavations. Ground water (with an apparent sheen) was observed in the fuel tank pit at a depth of about 14 feet below grade. Per the direction of Mr. Jeff Shapiro of the ACHCS, five soil samples, labeled SW1 through SW5, were collected from the sidewalls of the fuel tank pit at depths of about 13.5 feet below grade. Two soil samples, labeled BI and B2, were collected from the bottom of the fuel tank pit excavation at depths of about 17 feet and 15.5 feet below grade, respectively. These samples were also collected from bulk material excavated by backhoe and handled as described above. In addition, one soil sample, labeled WOI, was collected from the waste oil tank pit at a depth of about 8 feet below grade. Sample point locations are again shown on the attached Figure 1.

On September 10, 1993, the fuel tank pit was excavated to a depth of about 16.5 feet below grade, and approximately 7,000 gallons of water were pumped from the this pit by H&H Environmental Services. Ground water then stabilized in the fuel tank pit at a depth of about 15 feet below grade. Some sheen was observed on top of the water at the southwest corner of the fuel tank pit. KEI then collected one water sample, labeled W1, from the fuel tank pit. The water sample was collected by the use of a clean Teflon bailer, and then was decanted into six clean glass VOA vials and three one-liter amber bottles. The water sample was stored as described above. Mr. Shapiro of the ACHCS was present during water sampling activities.

On September 14, 1993, one additional water sample, labeled W2, was collected from the fuel tank pit. Prior to the collection of this sample, approximately 12,000 gallons of ground water were again pumped from the fuel tank pit by H&H Environmental Services on September 13 and 14, 1993. Ground water (with some sheen still present at the southwest corner of the fuel tank pit) then stabilized in the fuel tank pit at a depth of about 12 feet below grade. This sample was also collected by the use of a clean Teflon bailer, and then decanted into four clean glass VOA vials. The water sample was stored as previously described. Mr. Shapiro was again present during water sampling activities.

All excavated soil that was generated during this tank and piping replacement project was stockpiled on-site and sampled prior to disposal. The septic tank pit excavation was backfilled and compacted with clean imported soil. Two 12,000 gallon unleaded gasoline storage tanks and one 520 gallon waste oil storage tank were installed in the existing tank pit locations. The new fuel and waste oil tanks were all made of fiberglass-coated, double-wall steel. All backfilling and new tank and piping installation activities were performed by Paradiso Construction Company of San Leandro, California.

SUBSURFACE CONDITIONS

The subsurface soils observed in the excavations consisted primarily of silty clay. Ground water stabilized in the fuel tank pit at a depth of about 15 feet below grade on September 10, 1993, and was present at a depth of approximately 12 feet below grade on September 14, 1993.

ANALYTICAL RESULTS

All of the soil and ground water samples collected were analyzed by Sequoia Analytical Laboratory in Concord, California, and were accompanied by properly executed Chain of Custody documentation.

All soil samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline by EPA method 5030/modified 8015, benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA method 8020, and for total lead. In addition, samples ST1 and ST2 were also analyzed for total oil and grease (TOG) by Standard Methods 5520E&F. The sample collected from the waste oil tank pit (WO1) was analyzed for TPH as gasoline, TPH as diesel by EPA method 3550/modified 8015, BTEX, TOG, halogenated organic compounds (EPA method 8010), and the metals cadmium, chromium, lead, nickel, and zinc.

Both water samples were analyzed for TPH as gasoline and BTEX. In addition, water sample W1 was analyzed for TPH as diesel, TOG, EPA method 8010 constituents, and the metals cadmium, chromium, lead, nickel, and zinc. The results of the soil analyses are summarized in Tables 1 and 2, and the results of the water analyses are summarized in Table 3. Copies of the laboratory analyses and the Chain of Custody documentation are attached to this report.

DISCUSSION AND RECOMMENDATIONS

Based on the analytical results of the soil samples collected during the removal and replacement of the underground tanks and piping, it appears that no significant concentrations of hydrocarbon contamination were present in the soil in the vicinity of the former gasoline storage tanks, the former waste oil storage tank, the product piping trenches, or the former septic tank. The initial water sample collected from the fuel tank pit (after an initial purging of about 7,000 gallons of water) showed concentrations of TPH as gasoline and benzene at 2,600 ppb and 33 ppb, respectively, with non-detectable levels of TOG and EPA method 8010 constituents. However, after a total of approximately 19,000 gallons of water were purged from the fuel tank pit, the second water sample showed significantly decreased concentrations of TPH as gasoline and benzene (740 ppb and 14 ppb, respectively).

In accordance with the guidelines established by the RWQCB, further work is warranted at the site because of the levels of contamination found in the water samples collected from the fuel tank pit. Therefore, in order to comply with the requirements of the RWQCB and the ACHCS, KEI recommends the installation of three ground water monitoring wells at the site. The purpose of these wells will be to further determine the vertical and lateral extent of any remaining soil contamination at the site, to determine the ground water flow direction at the site, and to determine the lateral extent of any existing ground water contamination at the site.

It is KEI's understanding that a nearby BP service station site has had several monitoring wells installed. Therefore, KEI will review the file for this site at the RWQCB in order to determine the ground water flow direction. This information will then be used (along with a site reconnaissance of the Unocal site) in order to determine the most appropriate locations for monitoring wells at the Unocal site. Once the locations of the monitoring wells are chosen, a work plan will be submitted for your review and consideration.

DISTRIBUTION

A copy of this report should be sent to Mr. Jeff Shapiro of the ACHCS, and to the RWQCB, San Francisco Bay Region.

LIMITATIONS

Soil deposits and rock formations may vary in thickness, lithology, saturation, strength and other properties across any site. In addition, environmental changes, either naturally-occurring or artificially-induced, may cause changes in the extent and concentration of any contaminants. Our studies assume that the field and laboratory data are reasonably representative of the site as a whole, and assume that subsurface conditions are reasonably conducive to interpolation and extrapolation.

The results of this study are based on the data obtained from the field and laboratory analyses obtained from a state-certified laboratory. We have analyzed this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, either expressed or implied, regarding the above, including laboratory analyses, except that our services have been performed in accordance with generally accepted professional principles and practices existing for such work.

Should you have any questions on this report, please call us at (510) 602-5100.

Sincerely,

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Kaprealian Engineering, Inc.

Hagop Kevork Staff Engineer

Joel G. Greger, C.E.G.

Senior Engineering Geologist

License No. EG 1633 Exp. Date 6/30/94

Timothy R. Ross Project Manager

/bp

Attachments:

Tables 1, 2 & 3

Location Map

Figure 1

Laboratory Analyses

Chain of Custody documentation

Work Plan/Proposal

TABLE 1
SUMMARY OF LABORATORY ANALYSES
SOIL

<u>Date</u>	Sample	Depth (feet)	TPH as <u>Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	Ethyl- <u>benzene</u>	Xylenes	Total <u>Lead</u>
9/07/93	D1	¹ 2.5	ND	ND	ИД	ND	ND	14
	D2	2.5	ND	ND	ND	ND	ND	6.4
	D3	2.5	ND	ND	ND	ND	ND	6.2
77.5	D4	2.5	ND	ND	ND	ND	ND	6.2
C (265-mark	D5	5.5	ND	ND	ND	ND	ND	6.3
	D6	5.5	ND	ND	ND	ND	ND	9.8
	D7	5.5	ND	ND	ND	ND	ND	6.1
	D8	5.5	ND	ND	ND	ND	0.030	4.8
	P1	3.0	ND	ND	0.0068	ND	0.012	6.4
	P2	3.0	ND	0.0073	0.012	ND	0.015	5.0
	P3	3.0	9.7	0.15	1.2	0.36	2.4	4.9
12000	P4	4.75	1.8	0.0061	0.012	0.066	0.053	6.8
(4)	P5	7.0	ND	ND	ИD	ND	ND	6.3
	P6	6.0	ND	ND	0.011	0.048	0.032	17
	P7	6.0	2.4	ND	0.011	0.048	0.032	6.1
	ST1*	10.0	ND	ND	ND	ND	ND	6.8
Tank	ST2*	10.0	ND	ND	ND	ND	ND	6.6
9/08/93	B1	17.0	ND	0.0071	0.014	0.0072	0.026	5.9
borthon	B2	15.5	1.2	0.017	0.010	0.13	0.017	7.3

(below water table)

TABLE 1 (Continued)

SUMMARY OF LABORATORY ANALYSES SOIL

<u>Date</u>	Sample	Depth (feet)	TPH as <u>Gasoline</u>	Benzene	<u>Toluene</u>	Ethyl- <u>benzene</u>	<u>Xylenes</u>	Total <u>Lead</u>
9/08/93	SW1	13.5	ND	ND	0.013	ND	0.019	6.2
(Con't)	SW2	13.5	ND	0.0054	0.011	ND	0.012	6.0
	SW3	13.5	ND	0.0050	0.011	0.0065	0.013	6.2
Side would	SW4	13.5	2.6	0.11	0.28	0.067	0.34	6.5
from ustpit	SW5	13.5	ND	0.0084	0.011	ND	0.021	6.8
the race and But	WO1	8.0	6.8	0.050	ND	0.28	0.020	6.3

ND = Non-detectable.

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

^{*} TOG was non-detectable.

TABLE 2

SUMMARY OF LABORATORY ANALYSES SOIL

EPA Method 8010 Depth TPH as Constituents Date Sample (feet) Cadmium Chromium Nickel Zinc TOG Diesel (dqq) ND 9/08/93 WO1 8.0 ND ND 1.0 30 42 42

ND = Non-detectable.

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

TABLE 3
SUMMARY OF LABORATORY ANALYSES
WATER

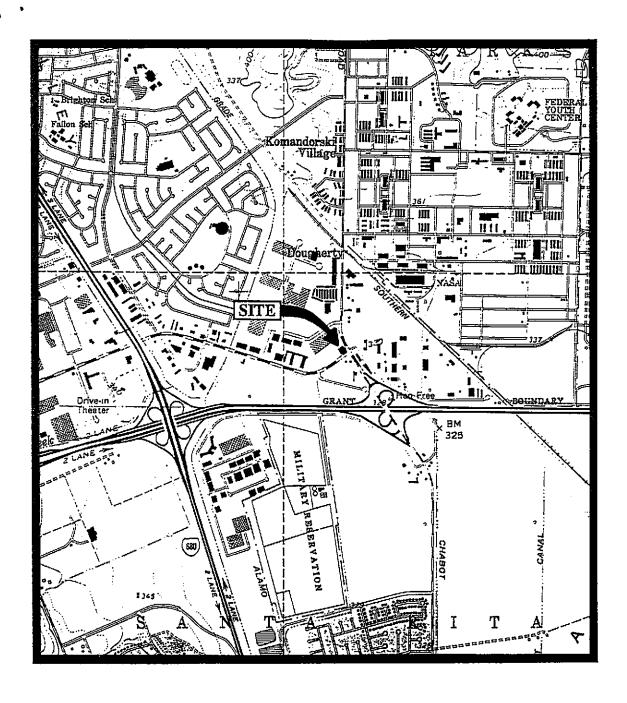
<u>Date</u>	<u>Sample</u>	Depth to Water (feet)	TPH as <u>Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	Ethyl- <u>benzene</u>	<u>Xylenes</u>	TPH as <u>Diesel</u>	TOG (mqq)	EPA Method 8010 <u>Constituents</u>
9/10/93	W1	15	2,600	33	19	150	190	€530*	ND	ND
9/14/93	W2	12	740	14	32	13	75			
		<u>Sample</u>	Cadmiu		Chromium (ppm)	Lead (ppm		Nickel (ppm)	Zin (pp	
		W1	0.01	4	0.28 = 28	30 ₆₀ b 0.0	18	0.46	0.	46
br.wa DH2·V	nct rydrukiu	(apb)	1.0		50	50		100 (epa)		nch)

ND = Non-detectable.

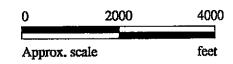
Results are in parts per billion (ppb) unless otherwise indicated.

^{*} Sequoia Analytical Laboratory reported that the total extractable hydrocarbons detected appeared to consist of a diesel and non-diesel mixture.





Base modified from 7.5 minute U.S.G.S. Dublin Quadrangle (photorevised 1980)

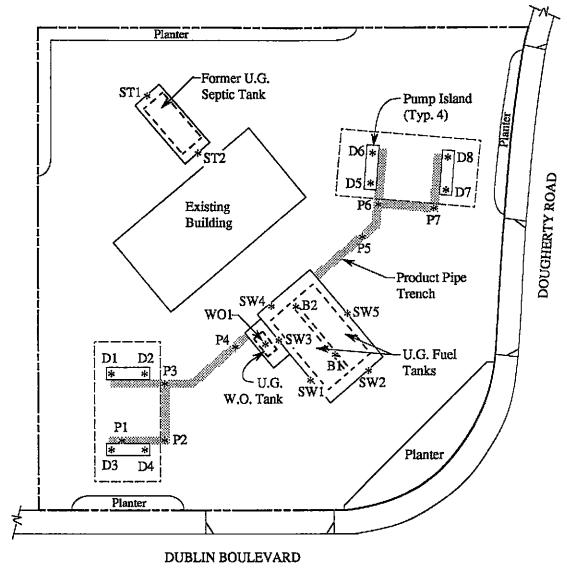




UNOCAL SERVICE STATION #6419 6401 DUBLIN BOULEVARD DUBLIN, CALIFORNIA

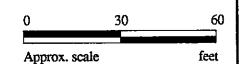
LOCATION MAP





LEGEND

* Sample point location



SOIL SAMPLE POINT LOCATION MAP



UNOCAL SERVICE STATION #6419 6401 DUBLIN BOULEVARD DUBLIN, CALIFORNIA

FIGURE

1

Attention: Avo Avedessian

Client Project ID: Sample Matrix: Unocal #6419, 6401 Dublin Blvd., Dublin Soil Sampled: Received: Sep 7, 1993 Sep 7, 1993

Analysis Method: First Sample #:

EPA 5030/8015/8020

Reported:

Sep 9, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

309-0247

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0247 D1	Sample I.D. 309-0248 D2	Sample I.D. 309-0249 D3	Sample I.D. 309-0250 D4	Sample I.D. 309-0251 D5	Sample I.D. 309-0252 D6
Purgeable Hydrocarbons	1.0	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Benzene	0.005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Toluene	0.005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Chromatogram Pat	tern:		••				

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	9/8/93	9/7/93	9/8/93	9/8/93	9/8/93	9/8/93
Instrument Identification:	ML #2	HP-4	ML #2	ML #2	ML #2	ML #2
Surrogate Recovery, %: (QC Limits = 70-130%)	95	90	94	97	102	87

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard. Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400

Attention: Avo Avedessian

Client Project ID: Sample Matrix:

Unocal #6419, 6401 Dublin Blvd., Dublin Soil

Sampled:

Sep 7, 1993 Sep 7, 1993

Concord, CA 94520

Analysis Method: First Sample #:

EPA 5030/8015/8020

Received: Reported:

Sep 9, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

309-0253

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0253 D7	Sample I. D. 309-0254 D8	Sample I.D. Matrix Blank	 	
Purgeable Hydrocarbons	1.0	N.D.	N.D.			
Benzene	0.005	N.D.	N.D.			
Toluene	0.005	N.D.	N.D.			
Ethyl Benzene	0.005	N.D.	N.D.			
Total Xylenes	0.005	N.D.	0.030			
Chromatogram Pat	tern:					

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0
Date Analyzed:	9/8/93	9/8/93	9/8/93
Instrument Identification:	ML #2	M L #2	ML #2
Surrogate Recovery, %: (QC Limits = 70-130%)	87	84	116

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard. Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian

Client Project ID: Unoci Sample Descript: Soil Analysis for: Lead

First Sample #:

Unocal #6419, 6401 Dublin Blvd., Dublin Soil Lead

Lead

309-0247

Sampled: Sep 7, 1993
Received: Sep 7, 1993
Extracted: Sep 8, 1993
Analyzed: Sep 9, 1993
Reported: Sep 9, 1993

LABORATORY ANALYSIS FOR:

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
309-0247	D1	0.25	14
309-0248	D2	0.25	6.4
309-0249	D3	0.25	6.2
309-0250	D4	0.25	6.2
309-0251	D5	0.25	6.3
309-0252	D6	0.25	9.8
309-0253	D7	0.25	6.1
309-0254	D8	0.25	4.8

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

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400

Concord, CA 94520

Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Matrix: S

QC Sample Group: 3090247-254

Reported: Sep 9, 1993

QUALITY CONTROL DATA REPORT

ANALYTE			Ethyl-		
ANALITE	Benzene	Toluene	Einyi- Benzene	Xylenes	Lead
	50,20,10	rolderie	Bengene	Хутепоо	
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 7421
Analyst:	J.Dinsay	J.Dinsay	J.Dinsay	J.Dinsay	K.V.S.
Conc. Spiked:	0.20	0.20	0.20	0.60	50
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
LCS Batch#:	GBLK090893	GBLK090893	GBLK090893	GBLK090893	BLK090893
Date Prepared:	9/8/93	9/8/93	9/8/93	9/8/93	9/8/93
Date Analyzed:	9/8/93	9/8/93	9/8/93	9/8/93	9/9/93
Instrument I.D.#:	ML #2	ML #2	ML #2	ML #2	SpectrAA-400
LCS %					
Recovery:	78	87	86	87	92
Hebutely.	7.0	o,	90	01	3£
Control Limits:	80-120	80-120	80-120	80-120	75-125
MS/MSD					
Batch #:	GBLK090893	GBLK090893	GBLK090893	GBLK090893	3090261
Date Prepared:	0.40.400	0 /0 /00	0 (0 (00	0 (0 /00	0 /0 /02
Date Prepared: Date Analyzed:	9/8/93 9/8/93	9/8/93 9/8/93	9/8/93	9/8/93 9/8/93	9/8/93 9/9/93
Instrument I.D.#:	9/8/93 ML #2	9/8/93 ML #2	9/8/93 ML #2	9/8/93 ML #2	SpectrAA-400
madument i.y.#.	IVIL # 2	IVIL #Z	tVIL #∠	WL #∠	Shacrisss-400
Matrix Spike					•
% Recovery:	75	83	85	85	92
Matrix Spike					
Duplicate %					
Recovery:	76	68	83	83	94
				**	
Relative %					
Difference:	1.3	27	2.4	2.4	2.2

SEQUOIA ANALYTICAL

Alan B. Kemp 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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.



CHAIN OF CUSTODY

SAMPLER	PLER Haig Unocal # 6419 - Dublin							helin	ANALYSES REQUESTED					TURN AROUND TIME:					
WITNESSING A		- 0		6	40)	Du	44	in Bl	v d	9	E E	tal ead						
SAMPLE ID NO.	DATE		TIME	SOIL	WATER	GRAB	СОНР	NO. OF CONT.		LING TION	五	8TX	70th					REMARKS	
DI	3/7/9	3		/		\		1	Beneata	Dispenser	/	/	/				_] 3	1090247	
D2				/		\		١			/	/	~					0248	
D3				V		~)			~	/	ب					0249	
D4				~		~		1			~	~	~					0250	
D5				/		/		1			<u></u>	<u>س</u>	-					0251	
D6				/		~		1			~	~	-					0252	
D7				V		/		١			~	_	<u></u>					0253	
D8	$\downarrow \downarrow$	\Box		~		1		1	,	<u> </u>	~	~	V				_ ₩	0254	
		ام		Δ															
Rel noviete	001	XP	MOV.	Kaf	193	me <i>185</i> 0	26	Receiv	ed by: / (Signatu	un g)		for a	nalysi	5:				aboratory accepting is been stored in id	
Rel inquished	- ή _α	(Sig	nature) V	/ 'p	ate/Ti	me		Receiv	ev by: (Signati	ure)					ェススー	1		il analyzed?	· · · · · · · · · · · · · · · · · · ·
Relinquished	d by:	(Sig	nature)	D	ate/Ti	mė		Receiv	ed by: (Signati	ure)					NA			s have head space? rs and properly pack	anet/2
Relinquished	d by:	(Sig	nature)	D	ate/Ti	me		Receiv	ed by: (Signati	ure)		(thi	Luli ature		Casa	Title	A Property patr	ate 3

First Sample #:

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520

Attention: Avo Avedessian

Unocal #6419, 6401 Dublin Blvd., Dublin Client Project ID: Sample Matrix:

Soil

EPA 5030/8015/8020

Analysis Method: 309-0255 Sampled:

Sep 7, 1993 Sep 7, 1993

Received: Reported:

Sep 9, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0255 P1	Sample I.D. 309-0256 P2	Sample I.D. 309-0257 P3	Sample I.D. 309-0258 P4	Sample I.D. 309-0259 P5	Sample I.D. 309-0260 P6
Purgeable Hydrocarbons	1.0	N.D.	N.D.	9.7	1.8	N.D.	N.D.
Benzene	0.005	N.D.	0.0073	0.15	0.0061	N.D.	N.D.
Toluene	0.005	0.0068	0.012	1.2	0.012	N.D.	0.011
Ethyl Benzene	0.005	N.D.	N.D.	0.36	0.066	N.D.	0.048
Total Xylenes	0.005	0.012	0.015	2.4	0.053	N.D.	0.032
Chromatogram Pat	tern:			Gasoline	Gasoline		

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	9/7/93	9/7/93	9/7/93	9/7/93	9/8/93	9/7/93
Instrument Identification:	HP-2	HP-5	HP-5	HP-5	HP-4	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	102	101	109	99	98	98

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard. Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Sample Matrix:

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Soil

Sampled: Received:

Sep 7, 1993 Sep 7, 1993

Attention: Avo Avedessian

Analysis Method: First Sample #:

EPA 5030/8015/8020 309-0261

Reported:

Sep 9, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0261 P7	Sample I.D. Matrix Blank		
Purgeable Hydrocarbons	1.0	2.4			
Benzene	0.005	N.D.			
Toluene	0.005	0.011			
Ethyl Benzene	0.005	0.048			
Total Xylenes	0.005	0.032			
Chromatogram Pat	tern:	Gasoline			

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	9/7/93	9/7/93
Instrument Identification:	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	. 106	104

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard. Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Sample Descript: Soil Lead First Sample #: 309-0255

Sampled: Sep 7, 1993
Received: Sep 7, 1993
Extracted: Sep 8, 1993
Analyzed: Sep 9, 1993
Reported: Sep 9, 1993

	LABORATORY ANALYSIS FOR: Lead														
Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg												
309-0255	P1	0.25	6.4												
309-0256	P2	0.25	5.0												
309-0257	P3	0.25	4.9												
309-0258	P4	0.25	6.8												
309-0259	P5	0.25	6.3												
309-0260	P6	0.25	17												

0.25

6.1

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

P7

SEQUOIA ANALYTICAL

Alan B. Kemp Project Manager

309-0261

Unocal #6419, 6401 Dublin Blvd., Dublin Client Project ID: Soil

Matrix:

Attention: Avo Avedessian

QC Sample Group: 3090255-261

Reported: Sep 9, 1993

QUALITY CONTROL DATA REPORT

ANALYTE			Ethyl-		"	
	Benzene	Toluene	Benzene	Xylenes	Lead	
<u></u>				,, -		
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 7421	
Analyst:	J.F.	J.F.	J.F.	J.F.	K.V.S.	
Conc. Spiked:	0.40	0.40	0.40	1.2	50	
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
LCS Batch#:	1LCS090793	1LCS090793	1LCS090793	1LCS090793	BLK090893	
Date Prepared:	9/7/93	9/7/93	9/7/93	9/7/93	9/8/93	
Date Analyzed:	9/7/93	9/7/93	9/7/93	9/7/93	9/9/93	
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	SpectrAA-400	
LCS %						
Recovery:	99	99	97	100	92	
Control Limits:	70-130	70-130	70-130	70-130	75-125	
MS/MSD						
Batch #:	3090248	3090248	3090248	3090248	3090261	
Date Prepared:	9/7/93	9/7/93	9/7/93	9/7/93	9/8/93	
Date Analyzed:	9/7/93	9/7/93	9/7/93	9/7/93	9/9/93	
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	SpectrAA-400	
Matrix Spike						
% Recovery:	100	100	100	102	92	
Matrix Spike						
Duplicate %						
Recovery:	97	97	97	99	94	
Relative %						
Difference:	3.0	3.0	3.0	2.9	2.2	

SEQUOIA ANALYTICAL

Nan B. Kemp 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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

KAPREALIAN ENGINEERING

CHAIN OF CUSTODY

SAMPLER	tair	4		^	۱۸ ۸۰) s:	ITE NA	ME & ADDRESS				AHAL YSE	S REQUE	STED	<u> </u>	TURN AROUND TIME:
WITHESSING A		0		546) }	y 7	ula	419-Dubli Lin Blud		9	N N	90				
SAMPLE ID NO.	DATE	TIME		WATER			NO. Of	SAMPLING LOCATION	Ī	王	78	र्ध				REMARKS
PI	9/1/9	3	/		/		1	Product Pipe Tr	enil c		/	~				3090255
P2			~		/		1		L		/	~				0256
P3			/		/		١		·		ノ	<u>~</u>				0257
P4			~		/		1				~	Y				0258
Ρ5			~		~		1		L	_	/	4				0259
P6			~		/		1				/	4				0260
PM	V		V		·		}	V	·		~	~				V 0261
			·													
4					<u> </u>											
Hearly	Mé		1)7/	ate/11 7/93	ne 185	0/	ece iv	ed by (Signature)			for a	nalysi	s :			y the laboratory accepting samples analysis been stored in ice?
Relinquishe	by: (Signature)	0	ate/li	me (Receiv	ed by) (Signature)		_						analysis been stored in ice? ted until analyzed?
Relinquished	d by: (Signature)	C	ate/īi	me		Receiv	ed by: (Signature)	, <u>-</u>				$(\mathcal{O}(\mathcal{O}))$			analysis have head space? ontainers and properly packaged?
Relinquished	d by: (Signature)	0	ate/Ti	me		Receiv	ed by: (Signature)				hul	ille ature	<u> </u>		Title 9/7/93 Date

Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Sample Matrix: Soil

Analysis Method: EPA 5030/8015/8020 First Sample #: 309-0282 Sampled: S Received: S

Sep 7, 1993 Sep 7, 1993

Reported: Sep 14, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I. D. 309-0282 ST1	Sample I.D. 309-0283 ST2	
Purgeable Hydrocarbons	1.0	N.D.	N.D.	
Benzene	0.005	N.D.	N.D.	
Toluene	0.005	N.D.	N.D.	
Ethyl Benzene	0.005	N.D.	N.D.	
Total Xylenes	0.005	N.D.	N.D.	
Chromatogram Par	ttern:	**	••	

Quality Control Data

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard. Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Sample Descript: Soil Lead

Lead 309-0282 Sampled: Sep 7, 1993
Received: Sep 7, 1993
Extracted: Sep 9, 1993
Analyzed: Sep 9, 1993
Reported: Sep 14, 1993

LABORATORY ANALYSIS FOR:

First Sample #:

Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
309-0282	\$T1	0.25	6.8
309-0283	ST2	0.25	6.6

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

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400

Concord, CA 94520

Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Matrix: Soil

QC Sample Group: 3090282-283 Reported: Sep 14, 1993

QUALITY CONTROL DATA REPORT

ANALYTE			Ethyl-			
	Benzene	Toluene	Benzene	Xylenes	Lead	
		10100110	04124110			
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 7421	
Analyst:	J.F.	J.F.	J.F.	J.F.	K.Anderson	
Conc. Spiked:	0.40	0.40	0.40	1.2	50	
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
LCS Batch#:	2LCS091093	2LCS091093	2LC\$091093	2LCS091093	BLK090993	
Date Prepared:	9/10/93	9/10/93	9/10/93	9/10/93	9/9/93	
Date Analyzed:	9/10/93	9/10/93	9/10/93	9/10/93	9/9/93	
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	SpectrAA-400	•
LCS %						
Recovery:	79	102	106	118	90	
Control Limits:	70-130	70-130	70-130	70-130	75-125	
MS/MSD Batch #:	3090187	3090187	3090187	3090187	3090283	
Date Prepared:	9/10/93	9/10/93	9/10/93	9/10/93	9/9/93	
Date Analyzed:	9/10/93	9/10/93	9/10/93	9/10/93	9/9/93	
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	SpectrAA-400	
Matrix Spike % Recovery:	77	80	82	85	90	
Matrix Spike Duplicate % Recovery:	80	85	85	87	91	
Relative % Difference:	3.8	6.1	3.6	2.3	1.1	

SEQUOIA ANALYTICAL

Alan B. Kemp 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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

KAPREALIAN ENGINEERING INCORPOBATED

CHAIN OF CUSTODY

SAMPLER	AMPLER HOUSE SITE NAME & ADDRESS					AHALYSES REQUESTED TURN AROUN							TURN AROUND TIME:			
WITHESSING A	()			146) (LL D	#6	6419-Dublin	9-1	ເກິ	200		į			
SAMPLE 10 NO.	DATE	TIME	•	WATER			NO. Of	SAMPLING LOCATION	1	87.	10		į			REMARKS
STI	9/7/93		V		_		1	Septic Tauk Pit		V	~					3090282 J 0283
ST2	9/7/93		V		v		}		<u></u>	~	~					1 0283
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			_						<u> </u>							
Relinquisher Relinquisher	D V	eneture) OUV gnature)	77 7 1	 				ved by: (Signature) ved by: (Signature)		for a	analysi	S				the laboratory accepting samples analysis been stored in ice?
Retinquishe			_	ate/Ti		4_		red by: (Signature)				-	- 18	1190		ed until analyzed? nalysis have head space?
Relinquishe			D	ate/Ti	me		Receiv	ved by: (Signature)	3. Did any samples received for analysis have head space? 4. Were samples in appropriate containers and properly packaged? Signature Title Date							

2401 Stanwell Drive, Suite 400 Concord, California 94520 Tel: 510 602.5100 - Fax: 510 687 0602

Client Project ID: Matrix Descript:

Unocal #6419, 6401 Dublin Blvd., Dublin

Sep 7, 1993 Sampled: Relogged: Sep 15, 1993

Attention: Avo Avedessian

Analysis Method:

SM 5520 E&F (Gravimetric)

Sep 15, 1993 Extracted: Analyzed:

First Sample #: #3090282

Soil

Sep 15, 1993 Reported: Sep 16, 1993

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
309-0282	ST1	N.D.
309-0283	ST2	N.D.

Detection Limits:

50

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

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400

Concord, CA 94520

Client Project ID:

Unocal #6419, 6401 Dublin Blvd., Dublin

Matrix:

Attention: Avo Avedessian

QC Sample Group: 3090282-283

Reported: Sep 16, 1993

QUALITY CONTROL DATA REPORT

ANALYTE

Oil & Grease

Method:

SM5520

Analyst:

K.W.

Conc. Spiked:

Units:

5000 mg/Kg

LCS Batch#:

BLK091593

Date Prepared:

9/15/93

Date Analyzed:

9/15/93

Instrument I.D.#:

N/A

LCS %

Recovery:

105

Control Limits:

80-120

MS/MSD

Batch #:

3090554

Date Prepared:

9/15/93

Date Analyzed:

9/15/93

Instrument I.D.#:

N/A

Matrix Spike % Recovery:

103

Matrix Spike

Duplicate % Recovery:

99

Relative %

Difference:

4.7

SEQUOIA ANALYTICAL

Alan B. Kemp 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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

KAPREALIAN ENGINEERING INCORPORAYED

CHAIN OF CUSTODY

SAMPLER -	aid			 م ا		Ŋ	LTE HAI	HE & ADDRESS	5 D. A	00.	ANALYSES REQUESTED							TURN AROUND TIME:
WITNESSING A	GENCY			40	1)	D	#	6419 Cin E	Blud)વ પ્	4-6	נו	a a a					
SAMPLE 10 NO.	DATE	TIME	SOIL	WATER			NO. OF		SAMPLING LOCATION		了	BTX	وع					REMARKS
STI	9/7/93		V		/		1	Septic	Tauk	V it	/	V	~					3090282 J 0283
ST2	9/7/93		V		~		١		V		/	~	~					1 0283
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				<u> </u>														
	<u> </u>		-															
و داده ا	 	1	<i>⋒</i>	late/I (acaiv	and by: A (Si	matude)		1	The f	followin	na MUST	AF C	omoleti	ed by	the laboratory accepting samples
Ret inquished		ollower (,, , ,	ate/11 7/93 ate/11		,4- }		ed by: (Si				for a	inalysi: lave all	s: Isampi	es re	ceixed	for a	nalysis been stored in ice?
Retinquished			1	ate/Ti	,	4_		ed by: (Si							11	11 54		d until analyzed? alysis have head space?
Relinquished				oate/Ti		4_		ed by: (Si						mples i				tainers and properly packaged?

2401 Stanwell Drive, Suite 400 Concord, California 94520 Tel: 510 602:5100 - Fax: 510 687 0602

Client Project ID: Matrix Descript:

Sampled: Unocal #6419, 6401 Dublin Blvd., Dublin

Relogged:

: Sep 7, 1993

Analysis Method:

SM 5520 E&F (Gravimetric)

Extracted: Analyzed:

Sep 15, 1993 Sep 15, 1993 Sep 15, 1993

Attention: Avo Avedessian

First Sample #:

Sep 16, 1993 Reported:

TOTAL RECOVERABLE PETROLEUM OIL

#3090282

Soil

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)		
309-0282	ST1	N.D.		
309-0283	ST2	N.D.		

Detection Limits:

50

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

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Matrix:

Soil

Concord, CA 94520 Attention: Avo Avedessian

QC Sample Group: 3090282-283

Reported: Sep 16, 1993

QUALITY CONTROL DATA REPORT

ANALYTE

Oil & Grease

Method:

SM5520

Analyst:

K.W.

Conc. Spiked:

5000

Units:

mg/Kg

LCS Batch#:

BLK091593

Date Prepared:

9/15/93

Date Analyzed:

9/15/93

Instrument I.D.#:

N/A

LCS %

Recovery:

105

Control Limits:

80-120

MS/MSD

Batch #:

3090554

Date Prepared:

9/15/93

Date Analyzed:

9/15/93

Instrument I.D.#:

N/A

Matrix Spike

% Recovery:

103

Matrix Spike

Duplicate % Recovery:

99

Relative %

Difference:

4.7

SEQUOIA ANALYTICAL

Alan B. Kemp 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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.



CHAIN OF CUSTODY

SAMPLER LOUIS		Ŋ	SITE HAME & ADDRESS		AMALYSES REQUESTED						TURN AROUND TIME: EIVE DAYS					
UITHESSING A		<u> </u>		140)Co		#6	6419 - Dublin	9-1	X ID	20					
SAMPLE ID NO.	DATE	TIME		WATER			NO. Of	SAMPLING LOCATION	产	2 7 7	63					REHARKS
STI	9/7/93		V		~		1	Septic Tauk Pit	/	~	~					3090282
ST2	9/7/93		V		~		1		<u>/</u>	~	<u>~</u>					3090282 J 0283
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Baliguisha	 	onatum.	<i>\\\\</i>	ate/Ii/			ecelv	ed by;/ (Signatufe)	 	The f	olloufi	ng MUSI	BE E	omplet:	ed by	the laboratory accepting samples
* Hook				1971 193		丛	fin	1 fromby		for a	nalysis	s :		•	·	malysis been stored in ice?
Relinquished	is) Ivd E	gnaturejV	/ 0	ate/li	me (<u> </u>	Receiv	ed/by; [}] (Signature)	2. Will samples remain/refrigerated until analyzed?							
Relinquished	d by: (Si	gnature)	. 0	ate/li	me		Receiv	ed by: (Signature)	3. Did any samples received for analysis have head space?			•				
Relinquished	d by: (Si	gnature)	l c	ste/li	пе		Receiv	ed by: (Signature)	4. Vere samples in appropriate containers and properly packaged? 1				elight 1/7/93			

2401 Stanwell Drive, Snite 400 Concord, California 93520 Tel: 510 602 5100 | Lux. 510 602 0602

Attention: Avo Avedessian

Client Project ID:

Unocal #6419, 6401 Dublin Blvd., Dublin

Sample Matrix: Soil

Analysis Method: First Sample #:

EPA 5030/8015/8020

309-0309

Sampled: Sep 8, 1993

Received: Sep 8, 1993

Reported: Sep 15, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0309 WO1	Sample I.D. Matrix Blank		
Purgeable Hydrocarbons	1.0	6.8			
Benzene	0.005	0.050			
Toluene	0.005	N.D.			
Ethyl Benzene	0.005	0.28			
Total Xylenes	0.005	0.020			
Chromatogram Pat	tern:	Gasoline			

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	9/14/93	9/14/93
Instrument Identification:	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	113	107

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard. Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Attention: Avo Avedessian

Client Project ID: Sample Matrix:

Analysis Method:

First Sample #:

Unocal #6419, 6401 Dublin Blvd., Dublin

Soil

EPA 3550/8015

Sampled: Received: Reported: Sep 8, 1993 Sep 8, 1993 Sep 15, 1993

309-0309

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0309 WO1	Sample I.D. Matrix Blank		
Extractable Hydrocarbons	1.0	N.D.			

Chromatogram Pattern:

Quality Control Data

Cuality Const of Data		
Report Limit Multiplication Factor:	1.0	1.0
Date Extracted:	9/14/93	9/14/93
Date Analyzed:	9/15/93	9/15/93
Instrument Identification:	HP-3B	HP-3B

Extractable Hydrocarbons are quantitated against a fresh diesel standard. Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL



2401 Stanwell Dr., Ste. 400 Concord, CA 94520

Kaprealian Engineering, Inc. Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Sampled: Sep 8, 1993 Received: Sep 8, 1993

Attention: Avo Avedessian

Matrix Descript: Analysis Method:

SM 5520 E&F (Gravimetric)

Extracted: Sep 10, 1993 Analyzed:

First Sample #:

309-0309

Soil

Sep 14, 1993 Reported: Sep 15, 1993

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
309-0309	WO1	N.D.

Detection Limits:

50

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

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian

Client Project ID: Sample Descript: Analysis Method:

Lab Number:

Unocal #6419, 6401 Dublin Bivd., Dublin

Soil, WO1 EPA 5030/8010 Sampled: Received: Analyzed:

Sep 8, 1993 Sep 8, 1993 Sep 14, 1993

Reported: Sep 15, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

309-0309

Analyte	Detection Limit µg/kg		Sample Results µg/kg
Bromodichloromethane	5.0		N.D.
Bromoform	5.0	,	N.D.
Bromomethane	10	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	N.D.
Carbon tetrachloride	5.0	***************************************	N.D.
Chlorobenzene	5.0		N.D.
Chloroethane	10	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	N.D.
2-Chloroethylvinyl ether	10		N.D.
Chloroform	5.0	141114074074074474474	N.D.
Chloromethane	10	44444444444	N.D.
Dibromochloromethane	5.0		N.D.
1,2-Dichlorobenzene	5.0		N.D.
1,3-Dichlorobenzene	5.0	1444444444	N.D.
1,4-Dichlorobenzene	5.0	***************************************	N.D.
1,1-Dichloroethane	5.0		N.D.
1,2-Dichloroethane	5.0		N.D.
1,1-Dichloroethene	5.0	***************************************	N.D.
cis-1,2-Dichloroethene	5.0	***************************************	N.D.
trans-1,2-Dichloroethene	5.0	2422942442291122V1244420440441044474	N.D.
1,2-Dichloropropane	5.0	.44	N.D.
cis-1,3-Dichloropropene	5.0		N.D.
trans-1,3-Dichloropropene	5.0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	N.D.
Methylene chloride	50	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	N.D.
1,1,2,2-Tetrachloroethane	5.0	,,	N.D.
Tetrachloroethene	5.0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	N.D.
1,1,1-Trichloroethane	5.0	14564564964564564564	N.D.
1,1,2-Trichloroethane	5.0		N.D.
Trichloroethene	5.0	,	N.D.
Trichlorofluoromethane	5.0	*******************************	N.D.
Vinyl chloride	10	>+=====================================	N.D.

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

SEQUOIA ANALYTICAL

Concord, CA 94520

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Sampled:

Received:

Sep 8, 1993 Sep 8, 1993

Sample Descript: Soil, WO1

Extracted:

9/9 & 9/13/93 9/9-9/13/93

Attention: Avo Avedessian

Lab Number:

309-0309

Analyzed: Reported: Sep 15, 1993

LABORATORY ANALYSIS

Analyte

Detection Limit mg/kg

Sample Results mg/kg

Cadmium	
Chromium	
Lead	
Nickel	
Zinc	

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

SEQUOIA ANALYTICAL

Concord, CA 94520

Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Matrix: Soil

QC Sample Group: 309-0309

Reported: Sep 15, 1993

QUALITY CONTROL DATA REPORT

ANALYTE			Ethyl-	<u>.</u>			, ,
	Benzene	Toluene	Benzene	Xylenes	Diesel	Oil & Grease	
Method:	EDA 2000	5D4 0000	FD4 0000	ED# 0000	EB\$ 0045	CL4 FFOO	
Analyst:	EPA 8020 J.F.	EPA 8020 J.F.	EPA 8020 J.F.	EPA 8020 J.F.	EPA 8015 K.Wimer	SM 5520 K.Wimer	
Conc. Spiked:	0.40	0.40	0.40	J.F. 1.2	10	5000	
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
LCS Batch#:	1LCS091493	1LCS091493	1LCS091493	1LCS091493	BLK091493	BLK091093	
Date Prepared:	9/14/93	9/14/93	9/14/93	9/14/93	9/14/93	9/10/93	
Date Analyzed:	9/14/93	9/14/93	9/14/93	9/14/93	9/15/93	9/15/93	
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3B	N/A	
LCS %							
Recovery:	111	107	108	109	104	91	
Control Limits:	70-130	70-130	70-130	70-130	80-120	75 -1 25	
MS/MSD							
Batch #:	3090325	3090325	3090325	3090325	3090168	BLK091093	
Date Prepared:	9/14/93	9/14/93	9/14/93	9/14/93	9/14/93	9/10/93	
Date Analyzed:	9/14/93	9/14/93	9/14/93	9/14/93	9/15/93	9/15/93	
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3B	N/A	
Matrix Spike							
% Recovery:	50	100	110	119	99	101	
Matrix Spike							
Duplicate %							
Recovery:	50	92	105	107	97	101	
Relative %							
Difference:	0.0	8.3	4.6	11	2.0	0.0	

SEQUOIA ANALYTICAL

Alan B. Kemp Project Manager Please Note:

Concord, CA 94520 Attention: Avo Avedessian Client Project ID:

Unocal #6419, 6401 Dublin Blvd., Dublin

Matrix:

Soil

QC Sample Goup: 309-0309

Reported: Sep 15, 1993

QUALITY CONTROL DATA REPORT

1,1-Dichloro-	Trichloroothoos	Chloro-
	richioroethene	Chioro- benzene
	- 15.1	Pelifelia
·		EPA 8010
		K.Nill
		10
mg/Kg	mg/Kg	mg/Kg
LCS091493	LCS091493	LCS091493
9/14/93	9/14/93	9/14/93
		9/14/93
HP-5890/1		HP-5890/1
•	•	,
93	88	77
70-130	70-130	70-130
3090309	3090309	3090309

9/14/93	9/14/93	9/14/93
9/14/93	9/14/93	9/14/93
HP-5890/1	HP-5890/1	HP-5890/1
60	07	70
02	97	78
59	87	81
5.0		
	ethene EPA 8010 K.Niill 10 mg/Kg LCS091493 9/14/93 9/14/93 HP-5890/1 3090309 9/14/93 9/14/93 HP-5890/1 62	EPA 8010 EPA 8010 K.Nill 10 10 10 mg/Kg mg/Kg LCS091493 LCS091493 9/14/93 9/14/93 9/14/93 9/14/93 HP-5890/1 HP-5890/1 3090309 3090309 9/14/93 9/14/93 9/14/93 9/14/93 HP-5890/1 HP-5890/1 62 97

SEQUOIA ANALYTICAL

Alan B. Kemp Project Manager Please Note:

Concord, CA 94520

Attention: Avo Avedessian

Client Project ID:

Matrix:

Unocal #6419, 6401 Dublin Blvd., Dublin

QC Sample Group: 309-0309

Reported: Sep 15, 1993

QUALITY CONTROL DATA REPORT

ANALYTE					
	Cadmium	Nicket	Zinc	Chromium	Lead
Method:	EPA 7130	EPA 7520	EPA 7950	EPA 7191	EPA 7421
Analyst:	K.V.S.	K.V.S.	K.V.S.	D.B.	K.M.A.
Conc. Spiked:	50	50	50	50	50
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
• • • • • • • • • • • • • • • • • • • •	9/119	mg/ng	9/1/9	mg/ng	9/119
LCS Batch#:	BLK091393	BLK091393	BLK091393	BLK090993	BLK090993
Date Prepared:	9/13/93	9/13/93	9/13/93	9/9/93	9/9/93
Date Analyzed:	9/13/93	9/13/93	9/13/93	9/10/93	9/9/93
Instrument Í.D.#:	SpectrAA-20	SpectrAA-20	SpectrAA-20	SpectrAA-400	SpectrAA-400
				- P	
LCS %					
Recovery:	83	91	88	103	90
Control Limits:	75-125	75-125	75-125	75-125	75-125
MS/MSD					
Batch #:	3090309	3090309	3090309	3090283	3090283
Daten #.	3030303	3030303	3030303	3030203	3090263
Date Prepared:	9/13/93	9/13/93	9/13/93	9/9/93	9/9/93
Date Analyzed:	9/13/93	9/13/93	9/13/93	9/10/93	9/9/93
Instrument Í.D.#:	SpectrAA-20	SpectrAA-20	SpectrAA-20	SpectrAA-400	SpectrAA-400
	•	•		,	•
Matrix Spike					
% Recovery:	89	97	96	79	90
Matrix Caika					
Matrix Spike Duplicate %					
-	00	400			
Recovery:	88	100	95	78	91
Relative %					
Difference:	1.1	3.0	1.0	1.3	1.1
				- 1	

SEQUOIA ANALYTICAL

lan B. Kemp roject Manager Please Note:

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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Concord, CA 94520

Attention: Avo Avedessian

QC Sample Group: 309-0309

Reported: Sep 15, 1993

QUALITY CONTROL DATA REPORT

SURROGATE

Method:

EPA 8015

EPA 8015

Analyst:

K.W.

K.W.

Reporting Units: Date Analyzed:

mg/Kg Sep 15, 1993 mg/Kg

Sample #:

309-0309

Sep 15, 1993 Matrix Blank

Surrogate

% Recovery:

102

99

SEQUOIA ANALYTICAL

Alan B. Kemp Project Manager % Recovery:

Conc. of M.S. - Conc. of Sample x 100

Spike Conc. Added

Relative % Difference:

Conc. of M.S. - Conc. of M.S.D. (Conc. of M.S. + Conc. of M.S.D.) / 2

x 100

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Concord, CA 94520

Attention: Avo Avedessian

QC Sample Group: 309-0309

Reported: Sep 15, 1993

QUALITY CONTROL DATA REPORT

SURROGATE

Method: Analyst: EPA 8010

EPA 8010

Reporting Units:

K.N.

K.N.

Date Analyzed:

mg/Kg Sep 14, 1993

mg/Kg

Sample #:

309-0309

Sep 14, 1993 Matrix Blank

Surrogate #1

% Recovery:

106

81

Surrogate #2

% Recovery:

91

96

SEQUOIA ANALYTICAL

Alan B. Kemp Project Manager % Recovery:

Conc. of M.S. - Conc. of Sample Spike Conc. Added

x 100

Cone, of M.S. - Cone, of M.S.D.

x 100

Relative % Difference:

(Conc. of M.S. + Conc. of M.S.D.) / 2

3090309.KEI <10>

KAPREALIAN ENGINEERING

CHAIN OF CUSTODY

SAMPLER HOWOL			SI	SITE NAME & ADDRESS		ANALYSES REQUESTED						TURN AROUND TIME:				
UITHESSING A	(2-1)		U 	400 400	as 1	# D	#6419-Dublin Sublin Blvd			か	D-#-D	9	0	d,Ct,	24/Ni	Five Days
SAMPLE ID NO.	DATE	TIME	soll	WATER	GRAB	COMP		SAMPLING LOCATION	2	8TXE	4	10(8010	Cd,	85,24,NI	REMARKS
WOI	9/8/93		✓		/		1	Beneath W. Oil Tank	<u></u>	~	<u> </u>	V	~		ر	3090309
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			A			<u> </u>								<u></u>		
" Hereigh	000 Ke		N 9/8	Alg (453	<u> </u>	YNU	ved by: (Signature) LUNG- LUNGLO		for a	nal ys i	s:				the laboratory accepting samples nalysis been stored in ice?
Relinquishe	aby: (si	gnature M		ate/Ti	me		Receiv	ved by: (Signature)		2. V	ill sa	mples	remein	retr i	gerate	d until analyzed?
Relinquishe	d by: (\$i	gnature)	ε	ate/Ti	me		Receiv	ved by: (Signature)		3. Did any samples received for analysis have head space. 4. Were samples in appropriate containers and properly						
Relinquishe	d by: (\$i	gnature)	1	ate/Ti	me		Received by: (Signature)									itle pate

2401 Stanwell Drive, Suite 400 Concord, California 94520 Tel: 510:602:5100 - Fax: 510:687:0602

Concord, CA 94520 Attention: Avo Avedessian Client Project ID: Sample Matrix: Unocal #6419, 6401 Dublin Blvd., Dublin

EPA 5030/8015/8020

Water

Analysis Method: First Sample #:

Sampled:

Sep 10, 1993

Received: Reported: Sep 10, 1993 Sep 17, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

309-0440

Analyte	Reporting Limit μg/L	Sample I.D. 309-0440 W1	Sample I.D. Matrix Blank		
Purgeable Hydrocarbons	50	2,600			
Benzene	0.5	33			
Toluene	0.5	19			
Ethyl Benzene	0.5	150			
Total Xylenes	0.5	190			
Chromatogram Patt	ern:	Gasoline			

Quality Control Data

Report Limit Multiplication Factor:	10	1.0
Date Analyzed:	9/16/93	9/16/93
Instrument Identification:	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	102	110

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard. Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Attention: Avo Avedessian

Client Project ID: Sample Matrix:

Unocal #6419, 6401 Dublin Blvd., Dublin

Water

Analysis Method: First Sample #:

EPA 3510/3520/8015

309-0440

Sampled:

Sep 10, 1993 Sep 10, 1993

Received: Reported: Sep 17, 1993

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit μg/L	Sample I.D. 309-0440 W1*	Sample I.D. Matrix Blank		
Extractable Hydrocarbons	50	530			
Chromatogram Pa	ttern:	Diesel & Non-Diesel Mixture (<c16)< td=""><td></td><td></td><td></td></c16)<>			

Quality Control Data

Report Limit Multiplication Factor: 1.0 1.0 Date Extracted: 9/14/93 9/14/93 Date Analyzed: 9/16/93 9/17/93 Instrument Identification: HP-3A HP-3A

Extractable Hydrocarbons are quantitated against a fresh diesel standard. Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Alan B. Kemp Project Manager Please Note:

*Non-Diesel Mixture, < C16, refers to unidentified peaks in the Kerosene/Stoddard Solvent Range.

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Sampled: Received:

Sep 10, 1993

Matrix Descript: Analysis Method:

Water SM 5520 B&F (Gravimetric)

Extracted: Analyzed:

Sep 10, 1993 Sep 14, 1993

Attention: Avo Avedessian

First Sample #:

309-0440

Sep 15, 1993 Reported: Sep 17, 1993

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/L (ppm)
309-0440	W1	N.D.

Detection Limits:

5.0

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

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian

Client Project ID: Sample Descript: Analysis Method:

Lab Number:

Unocal #6419, 6401 Dublin Blvd., Dublin

Water, W1 EPA 5030/8010 309-0440 Sampled: Sep 10, 1993 Received: Sep 10, 1993 Analyzed: Sep 16, 1993

Reported: Sep 17, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L		Sample Results µg/L
Bromodichloromethane	0.50	***************************************	N.D.
Bromoform	0.50		N.D.
Bromomethane	1.0	******************************	N.D.
Carbon tetrachloride	0.50	***************************************	N.D.
Chlorobenzene	0.50	***************************************	N.D.
Chloroethane	1.0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	N.D.
2-Chloroethylvinyl ether	1.0		N.D.
Chloroform	0.50		N.D.
Chloromethane	1.0	***************************************	N.D.
Dibromochloromethane	0.50		N.D.
1,3-Dichlorobenzene	0.50		N.D.
1,4-Dichlorobenzene	0.50	************************	N.D.
1,2-Dichlorobenzene	0.50	*******************************	N.D.
1,1-Dichloroethane	0.50	*****************************	N.D.
1,2-Dichloroethane	0.50	*************	N.D.
1,1-Dichloroethene	0.50		N.D.
cis-1,2-Dichloroethene	0.50	1	N.D.
trans-1,2-Dichloroethene	0.50		N.D.
1,2-Dichloropropane	0.50		N.D.
cis-1,3-Dichloropropene	0.50		N.D.
trans-1,3-Dichloropropene	0.50		N.D.
Methylene chloride	5.0		N.D.
1,1,2,2-Tetrachloroethane	0.50		N.D.
Tetrachloroethene	0.50		N.D.
1,1,1-Trichloroethane	0.50		N.D.
1,1,2-Trichloroethane	0.50	404844046440444444444444444444444444444	N.D.
Trichloroethene	0.50	444444444444444444444444444444	N.D.
Trichlorofluoromethane	0.50	***********	N.D.
Vinyl chloride	1.0	*************	N.D.

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

SEQUOIA ANALYTICAL

Concord, CA 94520 Attention: Avo Avedessian Client Project ID:

Unocal #6419, 6401 Dublin Blvd., Dublin

Sampled:

Sep 10, 1993 Sep 10, 1993

Sample Descript: Water, W1

Received: Analyzed:

9/16-9/20/93

Lab Number:

309-0440

Reported: Sep 20, 1993

LABORATORY ANALYSIS

Analyte

Detection Limit mg/L

Sample Results mg/L

7	
Cadmium 0.010 0.014	333
	2000
Chromium	
100	
LEAU	**
Nickel 0.050 0.46	**
V: 70	
Zinc	***
	333

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

SEQUOIA ANALYTICAL

Client Project ID: Unocal #6419, 6401 Dublin Bivd., Dublin

Matrix:

Water

Attention: Avo Avedessian

QC Sample Group: 309-0440

Reported: Sep 17, 1993

QUALITY CONTROL DATA REPORT

EPA 8020 J.F. 20 µg/L	Toluene EPA 8020 J.F.	Ethyl- Benzene EPA 8020	Xylenes EPA 8020	Diesel	Oil & Grease	
J.F. 20	J.F.		EPA 8020			
J.F. 20	J.F.		EPA 8020			
20		· -		EPA 8015	SM 5520	
	00	J.F.	J.F.	K.Wimer	K.Wimer	
μg/L	20	20	60	300	5000	
	μg/L	μg/L	μg/L	μg/L	mg/L	
3LCS091693	3LCS091693	3LCS091693	3LCS091693	BLK091493	BLK091493	
9/16/93	9/16/93	9/16/93	9/16/93	9/14/93	9/14/93	
9/16/93	9/16/93	9/16/93	9/16/93	9/17/93	9/15/93	
HP-5	HP-5	HP-5	HP-5	HP-3A	N/A	
129	122	116	112	97	87	
70-130	70-130	70-130	70-130	80-120	80-120	
3090486	3090486	3090486	3090486	BLK091493	BLK091493	
9/16/93	9/16/93	9/16/93	9/16/93	9/14/93	9/14/93	
9/16/93						
HP-5	HP-5	HP-5	HP-5	HP-3A	N/A	
120	115	110	107	97	87	
125	115	110	107	91	93	
4.1	0.0	0.0	0.0	67	71	
	9/16/93 9/16/93 HP-5 129 70-130 3090486 9/16/93 9/16/93 HP-5	9/16/93 9/16/93 9/16/93 9/16/93 HP-5 HP-5 129 122 70-130 70-130 3090486 3090486 9/16/93 9/16/93 9/16/93 HP-5 HP-5 120 115	9/16/93 9/16/93 9/16/93 9/16/93 9/16/93 9/16/93 HP-5 HP-5 HP-5 129 122 116 70-130 70-130 70-130 3090486 3090486 3090486 9/16/93 9/16/93 9/16/93 9/16/93 9/16/93 HP-5 HP-5 120 115 110	9/16/93 9/16/93 9/16/93 9/16/93 9/16/93 HP-5 HP-5 HP-5 HP-5 HP-5 HP-5 HP-5 HP-5	9/16/93 9/16/93 9/16/93 9/16/93 9/17/93 HP-5 HP-5 HP-5 HP-5 HP-3A 129 122 116 112 97 70-130 70-130 70-130 70-130 80-120 3090486 3090486 3090486 3090486 BLK091493 9/16/93 9/16/93 9/16/93 9/16/93 9/16/93 9/16/93 9/16/93 9/16/93 9/16/93 9/17/93 HP-5 HP-5 HP-5 HP-5 HP-5 HP-3A 120 115 110 107 97	9/16/93 9/16/93 9/16/93 9/16/93 9/16/93 9/17/93 9/15/93 HP-5 HP-5 HP-5 HP-5 HP-3A N/A 129 122 116 112 97 87 70-130 70-130 70-130 70-130 80-120 80-120 3090486 3090486 3090486 3090486 BLK091493 BLK091493 9/16/93 9/16/93 9/16/93 9/16/93 9/14/93 9/15/93 HP-5 HP-5 HP-5 HP-5 HP-3A N/A 120 115 110 107 97 87

SEQUOIA ANALYTICAL

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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

Kaprealian Engineering, Inc.

2401 Stanwell Dr., Ste. 400

Concord, CA 94520 Attention: Avo Avedessian Client Project ID:

Unocal #6419, 6401 Dublin Blvd., Dublin

Matrix:

Wate

QC Sample Goup: 309-0440

Reported: Sep 17, 1993

QUALITY CONTROL DATA REPORT

ANALYTE:	d d Dishina		
ANALITE:	1,1-Dichloro- ethene	Trichloroethene	Chloro-
	ernene		benzene
Method:	EPA 8010	EPA 8010	EPA 8010
Analyst:	K.Nill	K.Nill	K.Nill
Conc. Spiked:	10	10	10
Units:	μg/L	μg/L	μg/L
LCS Batch#:	LCS091693	LCS091693	LCS091693
Date Prepared:	9/16/93	9/16/93	9/16/93
Date Analyzed:	9/16/93	9/16/93	9/16/93
Instrument I.D.#:	HP-5890/7	HP-5890/7	9/10/93 HP-5890/7
		5050/7	/ II =0090 / /
LCS %			
Recovery:	100	100	93
Control Limits:	70-130	70-130	70-130
MS/MSD			
Batch #:	3090533	3090533	3090533
	000000	0030300	3090333
Date Prepared:	9/16/93	9/16/93	9/16/93
Date Analyzed:	9/16/93	9/16/93	9/16/93
Instrument I.D.#:	HP-5890/7	HP-5890/7	HP-5890/7
Matrix Spike			
% Recovery:	100		
% necovery:	100	110	95
Matrix Spike			
Duplicate %			
Recovery:	110	110	95
	, . 	, r o	3 0
Relative %			
Difference:	9.5	0.0	0.0
			-

SEQUOIA ANALYTICAL

Alan B. Kemp Project Manager Please Note:

Concord, CA 94520 Attention: Avo Avedessian Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Matrix: Water

QC Sample Group: 309-0440 Reported: Sep 17, 1993

QUALITY CONTROL DATA REPORT

ANALYTE					
	Cadmium	Nickel	Zinc	Chromium	Lead
Method:	EPA 7130	EPA 7520	EPA 7950	EPA 7191	EPA 7421
Analyst:	K.V.S.	K.V.S.	K.V.S.	K.A.	K.A.
Conc. Spiked:	0.10	0.10	0.10	0.10	0.10
Units:					
Omis.	mg/L	mg/L	mg/L	mg/L	mg/L
LCS Batch#:	BLK091493	BLK091493	BLK091493	BLK091493	BLK091493
Date Prepared:	9/14/93	9/14/93	9/14/93	9/14/93	9/14/93
Date Analyzed:	9/16/93	9/17/93	9/16/93	9/20/93	9/17/93
Instrument I.D.#:	SpectrAA-20	SpectrAA-20	SpectrAA-20	SpectrAA-400	SpectrAA-400
	-,	•		-,	•
LCS %					
Recovery:	89	113	115	86	90
Control Limits:	75-125	75-125	75-125	75-125	75-125
			10/10/101000000000000000000000000000000	******	
MS/MSD			***************************************	•	
MS/MSD Batch #:	3090440	3090440	3090440	3090440	3090440
Batch #:					
Batch #: Date Prepared:	9/14/93	9/14/93	9/14/93	9/14/93	9/14/93
Batch #:					
Batch #: Date Prepared: Date Analyzed: Instrument I.D.#:	9/14/93 9/16/93	9/14/93 9/17/93	9/14/93 9/16/93	9/14/93 9/20/93	9/14/93 9/17/93
Batch #: Date Prepared: Date Analyzed: Instrument I.D.#: Matrix Spike	9/14/93 9/16/93 SpectrAA-20	9/14/93 9/17/93 SpectrAA-20	9/14/93 9/16/93 SpectrAA-20	9/14/93 9/20/93 SpectrAA-400	9/14/93 9/17/93 SpectrAA-400
Batch #: Date Prepared: Date Analyzed: Instrument I.D.#:	9/14/93 9/16/93	9/14/93 9/17/93	9/14/93 9/16/93	9/14/93 9/20/93	9/14/93 9/17/93
Batch #: Date Prepared: Date Analyzed: Instrument I.D.#: Matrix Spike % Recovery:	9/14/93 9/16/93 SpectrAA-20	9/14/93 9/17/93 SpectrAA-20	9/14/93 9/16/93 SpectrAA-20	9/14/93 9/20/93 SpectrAA-400	9/14/93 9/17/93 SpectrAA-400
Batch #: Date Prepared: Date Analyzed: Instrument I.D.#: Matrix Spike % Recovery: Matrix Spike	9/14/93 9/16/93 SpectrAA-20	9/14/93 9/17/93 SpectrAA-20	9/14/93 9/16/93 SpectrAA-20	9/14/93 9/20/93 SpectrAA-400	9/14/93 9/17/93 SpectrAA-400
Batch #: Date Prepared: Date Analyzed: Instrument I.D.#: Matrix Spike % Recovery: Matrix Spike Duplicate %	9/14/93 9/16/93 SpectrAA-20	9/14/93 9/17/93 SpectrAA-20	9/14/93 9/16/93 SpectrAA-20 79	9/14/93 9/20/93 SpectrAA-400	9/14/93 9/17/93 SpectrAA-400
Batch #: Date Prepared: Date Analyzed: Instrument I.D.#: Matrix Spike % Recovery: Matrix Spike	9/14/93 9/16/93 SpectrAA-20	9/14/93 9/17/93 SpectrAA-20	9/14/93 9/16/93 SpectrAA-20	9/14/93 9/20/93 SpectrAA-400	9/14/93 9/17/93 SpectrAA-400
Batch #: Date Prepared: Date Analyzed: Instrument I.D.#: Matrix Spike % Recovery: Matrix Spike Duplicate % Recovery: Relative %	9/14/93 9/16/93 SpectrAA-20	9/14/93 9/17/93 SpectrAA-20	9/14/93 9/16/93 SpectrAA-20 79	9/14/93 9/20/93 SpectrAA-400	9/14/93 9/17/93 SpectrAA-400
Batch #: Date Prepared: Date Analyzed: Instrument I.D.#: Matrix Spike % Recovery: Matrix Spike Duplicate % Recovery:	9/14/93 9/16/93 SpectrAA-20	9/14/93 9/17/93 SpectrAA-20	9/14/93 9/16/93 SpectrAA-20 79	9/14/93 9/20/93 SpectrAA-400	9/14/93 9/17/93 SpectrAA-400

SEQUOIA ANALYTICAL

Alan B. Kemp Project Manager Please Note:

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Concord, CA 94520

Attention: Avo Avedessian

QC Sample Group: 309-0440

Reported: Sep 17, 1993

QUALITY CONTROL DATA REPORT

SURROGATE

Method:

EPA 8015

EPA 8015

Analyst:

K.W.

K.W.

Reporting Units:

μg/L

μg/L

Date Analyzed: Sample #: Sep 16, 1993 309-0440 Sep 17, 1993 Matrix Blank

Surrogate

% Recovery:

108

105

SEQUOIA ANALYTICAL

Alan B. Kemp Project/Manager % Recovery: Conc. of M.S. - Conc. of Sample x 100
Spike Conc. Added

Relative % Difference:

Conc. of M.S. - Conc. of M.S.D.

(Conc. of M.S. + Conc. of M.S.D.) / 2

x 100

Kaprealian Engineering, Inc.

2401 Stanwell Dr., Ste. 400

Concord, CA 94520

Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

QC Sample Group: 309-0440

Reported: Sep 17, 1993

QUALITY CONTROL DATA REPORT

SURROGATE

Method:

EPA 8010

EPA 8010

Analyst:

K.N.

K.N.

Reporting Units: Date Analyzed: μg/L

μg/L

Sample #:

Sep 16, 1993 309-0440 Sep 16, 1993

Matrix Blank

Surrogate #1

% Recovery:

95

103

Surrogate #2

% Recovery:

87

84

SEQUOIA ANALYTICAL

Alan B. Kemp Project Manager % Recovery:

Conc. of M.S. - Conc. of Sample

x 100

Spike Conc. Added

Relative % Difference:

Conc. of M.S. - Conc. of M.S.D. (Conc. of M.S. + Conc. of M.S.D.) / 2 x 100

KAPREALIAN ENGINEERING

CHAIN OF CUSTODY

SAMPLER	faig		Τ,			o s	ITE HAP	E & ADDRESS	5 D. h.	0	_	,	NALYSE	ES REQU	JESTED	· · · · · · ·		TURN AROUND TIME: FIVE DAYS
WITHESSING A	·			140 140	0 02) (D	ubs	419 - Lin B	Dubl	uw	D-HAL	丁太匠	1-D	TOG		J.	z, υ.	PIVE DATS
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.		SAMPLING LOCATION			BT	-Hd1	F	3	Col,	Pb, ZJ,	REHARKS
WΙ	9/10/93			/		V	3+6	Fuel	Tank	Pit	/	/	V	~	V	V	V	water sample was collected in 3 one-lever samples
)	309	04	40			was collected
															A-	#1	,	in 3 one-loter
															(WS)		amber bottles
																		and 6 VOA's
							ļ	,	 									
		<u> </u>							·					ļ				
		h	,															
Retirouished	20 20 (K	EUUX)	H	1093	me } \(\mathcal{3} \);(26.7	Rece jy	ed by: (Si	gnature) Lluull	<u></u>		for a	natysi:	s;				the laboratory accepting samples nalysis been stored in ice?
Relinquisite	d by: (Si	gnature)		ate/Ti				ed by: (Si	gnature)					1	M^{0}			d until analyzed?
Relinquishe	d by: (Si	gnature)	C	ate/Ti	me		Receiv	ed by: (\$i	gnature)						YUC	7		alysis have head space?
Relinquished	d by: (Si	gnature)	C	ate/Ti	me		Receiv	ed by: (Si	gnature)			⁴ ί\ _{\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\}	Sign	nples ature	in app	ropria WL 5	Sam	tainers and property packaged? att Control 9/10/93 litle

2401 Stanwell Drive, Suite 400 Concord, California 94520 Tel: 510 602.5100 - Fax: 510 687 0602

Attention: Avo Avedessian

Client Project ID: Sample Matrix: Unocal #6419, 6401 Dublin Blvd., Dublin

Water

Analysis Method: EPA 5030/8015/8020 First Sample #: 309-0561 Sampled: Sep 14, 1993

Received: Sep 14, 1993 Reported: Sep 21, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit μg/L	Sample I.D. 309-0561 W2	Sample I.D. Matrix Blank		
Purgeable Hydrocarbons	50	740			
Benzene	0.5	14			
Toluene	0.5	32			
Ethyl Benzene	0.5	13			
Total Xylenes	0.5	75			
Chromatogram Patt	tern:	Gasoline			

Quality Control Data

Report Limit Multiplication Factor:	10	1.0
Date Analyzed:	9/17/93	9/17/93
Instrument Identification:	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	101	114

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard. Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Concord, CA 94520 Attention: Avo Avedessian Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Matrix: Water

QC Sample Group: 309-0561 Reported: Sep 21, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	···-		Ethyl-	
,	Benzene	Toluene	Benzene	Xylenes
			T	
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J.F.	J.F.	J.F.	J.F.
Conc. Spiked:	20	20	20	60
Units:	μg/L	μg/L	μg/L	μg/L
LCS Batch#:	3LCS091793	3LCS091793	3LCS091793	3LCS091793
Date Prepared:	9/17/93	9/17/93	9/17/93	9/17/93
Date Analyzed:	9/17/93	9/17/93	9/17/93	9/17/93
Instrument I.D.#:	HP-5	9/17/90 HP-5	9/17/93 HP-5	3/17/33 HP-5
	- " •	111 - 3	111 -3	111-5
LCS %				
Recovery:	130	121	112	110
Control Limits:	70-130	70-130	70-130	70-130
MS/MSD				
Batch #:	3090517	3090517	3090517	3090517
Date Prepared:	9/17/93	9/17/93	9/17/93	9/17/93
Date Analyzed:	9/17/93	9/17/93	9/17/93	9/17/93
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
Matrix Spike				
% Recovery:	115	110	105	103
Matrix Spike				
Duplicate %	•			
Recovery:	125	115	115	112
Relative %			•	
Difference:	8.3	4.4	8.3	8.4

SEQUOIA ANALYTICAL

Alan B. Kemp Project Manager Please Note:

KAPREALIAN ENGINEERING INCORPORATED

CHAIN OF CUSTODY

SAMPLER -	far, 6	}	Ju	wo	Ca	J.		HE & ADDRE	5 Dub. Blue	lin	ب		ANALYSE	S REQU	JESTED			turn around time: 5 doug 5
MITMESSING A				<u>۷ ک</u>	01	<u>, , , , , , , , , , , , , , , , , , , </u>)w()	un	Bring	<u> </u>	士	×					1	U
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.		SAMPLING LOCATION		1-43-	120						REMARKS
W2	9/14/93			/		~	4	1-ue	l Touk	Pit				3	90	56	(water Sample
		<u> </u>														A-1		was collected
								· · · · · · · · · · · · · · · · · · ·										water Sample was collected in four VOA's.
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										· · · · · · · · · · · · · · · · · · ·								(
			i											- Jan 1				
																· · · · · · · · · · · · · · · · · · ·		
Relinguisha	W W	Tinsla		193 A				ed by: (S	ignature)	4		for a	nal ys i	s:		•	•	the laboratory accepting samples
Relinquished	d by: (Si	gnature)	, 	ate/Ti		11		ed by: (S		<u>~~~</u>				u_{ν}	α			analysis been stored in ice?
Retinquished	d by: (Si	gnature)	D	ate/li	me	-	Receiv	ed by: (S	ignature)			3. 0	id any	sample	es rec	eived	for an	halysis have head space?
Relinquished	d by: (Si	gnature)	0	ate/Ti	me		Receiv	ed by: (S	ignature)			- 1	llisse	` ^	1 4 1	بر الکار	٠,	all Control 9114153

2401 Stanwell Drive, Suite 400 Concord, California 94520 Tel: 510.602.5100 Fax: 510.687.0602

Attention: Avo Avedessian

Client Project ID: Sample Matrix:

Unocal #6419, 6401 Dublin Blvd., Dublin

Sep 8, 1993

Concord, CA 94520

Analysis Method:

Soil EPA 5030/8015/8020 Received: Reported:

Sampled:

Sep 8, 1993 Sep 9, 1993

First Sample #:

309-0308

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0308 SW5	Sample I.D. Matrix Blank	 	
Purgeable Hydrocarbons	1.0	N.D.	N.D.		÷
Benzene	0.005	0.0084	N.D.		
Toluene	0.005	0.011	N.D.		
Ethyl Benzene	0.005	N.D.	N.D.		
Total Xylenes	0.005	0.021	N.D.		
Chromatogram Pat	tern:				

Quality Control Data

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard. Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Attention: Avo Avedessian

Client Project ID: Sample Matrix:

Unocal #6419, 6401 Dublin Blvd., Dublin

Soil EPA 5030/8015/8020

Analysis Method: EPA 5030 First Sample #: 309-0302 Sampled:

Sep 8, 1993 Sep 8, 1993

Received: Reported:

Sep 9, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0302 B1	Sample I.D. 309-0303 B2	Sample I.D. 309-0304 SW1	Sample I.D. 309-0305 SW2	Sample I.D. 309-0306 SW3	Sample I.D. 309-0307 SW4
Purgeable Hydrocarbons	1.0	N.D.	1.2	N.D.	N.D.	N.D.	2.6
Benzene	0.005	0.0071	0.017	N.D.	0.0054	0.0050	0.11
Toluene	0.005	0.014	0.010	0.013	0.011	0.011	0.28
Ethyl Benzene	0.005	0.0072	0.13	N.D.	N.D.	0.0065	0.067
Total Xylenes	0.005	0.026	0.017	0.019	0.012	0.013	0.34
Chromatogram Pat	tern:		Gasoline				Gasoline

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	9/8/93	9/8/93	9/8/93	9/8/93	9/8/93	9/8/93
Instrument Identification:	HP-5	HP-5	HP-5	HP-5	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	99	96	107	99	96	97

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard. Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Sample Descript: Soil Lead Sirst Sample #: 309-0302

Sampled: Sep 8, 1993
Received: Sep 8, 1993
Extracted: Sep 9, 1993
Analyzed: Sep 9, 1993
Reported: Sep 10, 1993

	LABORATO	RY ANALYSIS F	OR:	Lead
Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg	
309-0302	B1	0.25	5.9	
309-0303	B2	0.25	7.3	
309-0304	SW1	0.25	6.2	
309-0305	SW2	0.25	6.0	
309-0306	SW3	0.25	6.2	
309-0307	SW4	0.25	6.5	

0.25

6.8

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

SW₅

SEQUOIA ANALYTICAL

309-0308

Concord, CA 94520 Attention: Avo Avedessian Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

Matrix:

QC Sample Group: 3090302-308

Reported: Sep 9, 1993

QUALITY CONTROL DATA REPORT

Ethyl- Benzene EPA 8020 J.F. 0.40 mg/Kg 3LCS090893 9/8/93 9/8/93 HP-5	Xylenes EPA 8020 J.F. 1.2 mg/Kg 3LCS090893 9/8/93 9/8/93 HP-5	Lead EPA 7421 K.A. 50 mg/Kg BLK090993MS 9/9/93 9/9/93 SpectrAA-400	
J.F. 0.40 mg/Kg 3LCS090893 9/8/93 9/8/93 HP-5	J.F. 1.2 mg/Kg 3LCS090893 9/8/93 9/8/93 HP-5	K.A. 50 mg/Kg BLK090993MS 9/9/93 9/9/93 SpectrAA-400	
J.F. 0.40 mg/Kg 3LCS090893 9/8/93 9/8/93 HP-5	J.F. 1.2 mg/Kg 3LCS090893 9/8/93 9/8/93 HP-5	K.A. 50 mg/Kg BLK090993MS 9/9/93 9/9/93 SpectrAA-400	·-
0.40 mg/Kg 3LCS090893 9/8/93 9/8/93 HP-5	1.2 mg/Kg 3LCS090893 9/8/93 9/8/93 HP-5	50 mg/Kg BLK090993MS 9/9/93 9/9/93 SpectrAA-400	
mg/Kg 3LCS090893 9/8/93 9/8/93 HP-5	mg/Kg 3LCS090893 9/8/93 9/8/93 HP-5	mg/Kg BLK090993MS 9/9/93 9/9/93 SpectrAA-400	· ·
3LCS090893 9/8/93 9/8/93 HP-5	3LCS090893 9/8/93 9/8/93 HP-5	9/9/93 9/9/93 9/9/93 SpectrAA-400	
9/8/93 9/8/93 HP-5	9/8/93 9/8/93 HP-5	9/9/93 9/9/93 SpectrAA-400	
9/8/93 HP-5	9/8/93 HP-5	9/9/93 SpectrAA-400	
9/8/93 HP-5	9/8/93 HP-5	9/9/93 SpectrAA-400	
HP-5	HP-5	SpectrAA-400	
103	102	on.	
103	102	on	
		30	
70-130	70-130	75-125	
3090302	3090302	3090283	
9/8/93	9/8/93	9/9/93	
, ,			
HP-5	HP-5	SpectrAA-400	
82	82	90	
		•	
95	94	91	
15	14	1.1	
300000	3090302 9/8/93 9/8/93 HP-5	3090302 3090302 9/8/93 9/8/93 9/8/93 9/8/93 HP-5 HP-5 82 82	3090302 3090302 3090283 9/8/93 9/8/93 9/9/93 9/8/93 9/8/93 9/9/93 HP-5 HP-5 SpectrAA-400 82 82 90

SEQUOIA ANALYTICAL

Alan B. Kemp Project Manager Please Note:



CHAIN OF CUSTODY

SAMPLER	U	SITE NAME & ADDRESS UNOCCAL # 6419 - Dublin 6401 Dublin Blvd								ANALYSES REQUESTED			TURN AROUND TIME:					
SAMPLE ID NO.			TIME				NO. OF COMP CONT.		SAMPLING LOCATION		TPH-G	27 X	16 tal			REMARKS		
BI	9/8	193		/		/		1	Fuel Ta	uk Pit	1	V	-			3090302		
B2	-			~		/		1			V	سا				1 0303		
SWI				/		/		1			V	~				7 0304		
SW2				~		•		1			L	V				7 0305		
SW3				/		/		1			l	V				0306		
5W4			,	~		/		1			\ \	V	~			0307		
SW5				~		~		1		/	<u></u>	v	V			V 0308		
				. A														
Relinquished by: (Signature) Date/Time Received by: (Signature) Relinquished by: (Signature) Date/Time Received by: (Signature)								era Cire	ucc		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 genain refrigerated until analyzed?							
Relinquished by: (Signature) Date/Time Relinquished by: (Signature) Date/Time					<u> </u>	Received by: (Signature) Received by: (Signature)				3. Did any samples received for analysis have head space? 4. Were samples in appropriate containers and properly packaged?								
													Mulius I reduce Sample Contract 18193 Signature Vitle Date					