

MONITORING
PURGING
DISPOSING
SAMPLING

MPDS

SERVICES, INCORPORATED

FILED
HAZMAT

54 SEP 30 AM 11:22

BC

September 29, 1994

Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, CA 94501

20229

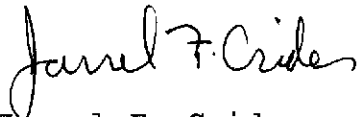
RE: Unocal Service Station #5325
3220 Lakeshore Avenue
Oakland, California

Per the request of the Unocal Corporation Project Manager, Mr. David B. DeWitt, enclosed please find our report (MPDS-UN5325-03) dated July 21, 1994, for the above referenced site.

Should you have any questions regarding the reporting of data, please feel free to call our office at (510) 602-5120. Any other questions may be directed to the Project Manager at (510) 277-2384.

Sincerely,

MPDS Services, Inc.



Jarrel F. Crider

/jfc

Enclosure

cc: Mr. David B. DeWitt

94 SEP 03 AM 11:22

MPDS-UN5325-03
July 21, 1994

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

Attention: Mr. David DeWitt

RE: Quarterly Data Report
Unocal Service Station #5325
3220 Lakeshore Avenue
Oakland, California

Dear Mr. DeWitt:

This data report presents the results of the most recent quarter of monitoring and sampling of the monitoring wells at the referenced site by MPDS Services, Inc.

RECENT FIELD ACTIVITIES

The monitoring wells that were monitored and sampled during this quarter are indicated in Table 1. Prior to sampling, the wells were checked for depth to water and the presence of free product or sheen. The monitoring data and the ground water elevations are summarized in Table 1. The ground water flow direction during the most recent quarter is shown on the attached Figure 1.

Ground water samples were collected on June 22, 1994. Prior to sampling, the wells were each purged of between 9 and 34.5 gallons of water. During purging operations, the field parameters pH, temperature, and electrical conductivity were recorded and are presented in Table 2. Once the field parameters were observed to stabilize, and where possible, a minimum of approximately four casing volumes had been removed from each well, samples were then collected using a clean Teflon bailer. The samples were decanted into clean VOA vials, which were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory. MPDS Services, Inc. transported the purged ground water to the Unocal Refinery located in Rodeo, California, for treatment and discharge to San Pablo Bay under NPDES permit.

ANALYTICAL RESULTS

The ground water samples were analyzed at Sequoia Analytical Laboratory and were accompanied by properly executed Chain of Custody documentation. The analytical results of the ground water samples collected to date are summarized in Table 3. The concentrations of Total Petroleum

Hydrocarbons (TPH) as gasoline and benzene detected in the ground water samples collected this quarter are shown on the attached Figure 2. Copies of the laboratory analytical results and the Chain of Custody documentation are attached to this report.

LIMITATIONS

Environmental changes, either naturally-occurring or artificially-induced, may cause changes in ground water levels and flow paths, thereby changing the extent and concentration of any contaminants.

DISTRIBUTION

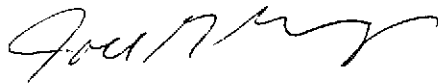
A copy of this report should be sent to the Alameda County Health Care Services Agency.

If you have any questions regarding this report, please do not hesitate to call at (510) 602-5120.

Sincerely,

MPDS Services, Inc.


Sarkis A. Karkarian
Staff Engineer



Joel G. Greger, C.E.G.
Senior Engineering Geologist

License No. EG 1633
Exp. Date 8/31/96

/dlh

Attachments: Tables 1, 2 & 3
Location Map
Figures 1 & 2
Laboratory Analyses
Chain of Custody documentation

cc: Mr. Cliff Garratt, GeoStrategies, Inc.



TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

- ◆ The depth to water level and total well depth measurements were taken from the top of the well casings. The monitoring event on June 22, 1994, is based on recent resurveyed well casing elevations. Prior to June 22, 1994, the depth to water level and total well depth measurements were taken from the top of the previous well casings elevations.
- ▲ The depth to water level and total well depth measurements were based on the following well cover levels: U-1 = 5.75', U-2 = 4.94', and U-3 = 8.14' (as provided by GeoStrategies, Inc.)
- * Relative to Mean Sea Level (MSL).
- ** The elevations of the top of the well casings have been surveyed relative to City of Oakland benchmark, at the northeasterly corner of Weller and Cheney Avenue (elevation = 9.055', city datum; add 3.00' to U.S.G.S. datum).

NA = Not Available.

Note: Monitoring data prior to November 16, 1993, were provided by GeoStrategies, Inc.

TABLE 2

RECORD OF THE TEMPERATURE, CONDUCTIVITY, AND pH VALUES
IN THE MONITORING WELLS DURING PURGING AND PRIOR TO SAMPLING

(Measured on June 22, 1994)

Well #	Gallons per Casing Volume	Time	Gallons Purged	Casing Volumes Purged	Temper- ature (°F)	Conductivity ([μmhos/cm] x100)	pH	
U-1	4.24	13:45	0	0	71.6	10.77	8.00	
			4	0.94	70.1	9.76	7.80	
			8	1.89	70.0	9.24	7.46	
		13:59	12	2.83	70.3	9.28	7.28	
			16	3.77	70.1	9.68	7.22	
			17	4.01				
U-2	4.42	14:30	0	0	73.2	13.02	7.76	
			4.5	1.02	71.4	10.86	7.41	
			8	1.81	71.4	10.42	7.09	
		14:50	DEWATERED					
			9.5	2.15	72.0	11.03	7.02	
			DEWATERED					
U-3	3.02	12:48	0	0	72.6	5.12	8.12	
			3	0.99	70.7	5.14	7.95	
			6	1.99	70.2	5.27	7.84	
		12:55	6.5	2.15				
			DEWATERED					
			9	2.98	70.9	5.36	7.74	
U-4	6.56	15:20	0	0	72.5	6.02	7.57	
			6.5	0.99	70.8	5.44	7.43	
			13	1.98	70.4	4.61	7.46	
		15:31	15	2.29				
			DEWATERED					
			17	2.59	71.9	5.10	7.50	
DEWATERED								

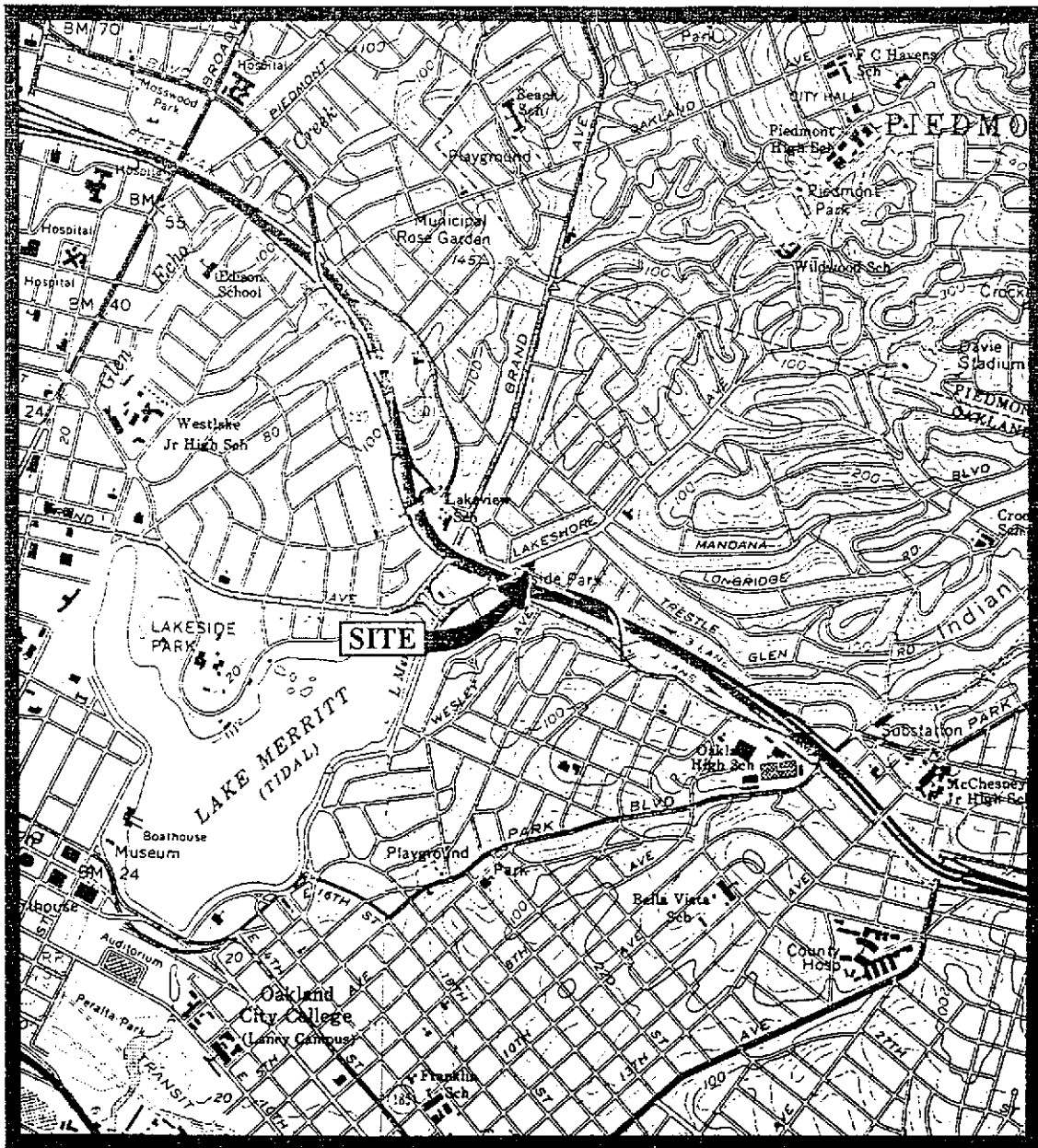
TABLE 2 (Continued)

RECORD OF THE TEMPERATURE, CONDUCTIVITY, AND pH VALUES
IN THE MONITORING WELLS DURING PURGING AND PRIOR TO SAMPLING

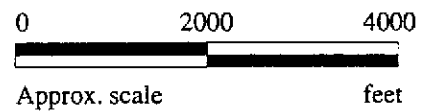
(Measured on June 22, 1994)

Well #	Gallons per Casing Volume	Time	Gallons Purged	Casing Volumes Purged	Temper- ature (°F)	Conductivity ([μmhos/cm] x100)	pH
U-5	8.61	16:55	0	0	71.7	2.42*	7.17
			8.5	0.99	69.2	2.62*	7.20
			17	1.97	69.0	2.54*	7.25
			25.5	2.96	68.7	2.53*	7.22
			34.5	4.01	68.3	2.58*	7.18
		17:17					
U-6	2.83	16:15	0	0	73.0	7.23	8.11
			3	1.06	70.0	7.25	7.96
			6	2.12	68.7	7.12	7.70
			9	3.18	68.3	7.33	7.56
			11.5	4.06	68.0	7.39	7.55
		16:23					

* Conductivity ([μmhos/cm]x1000)



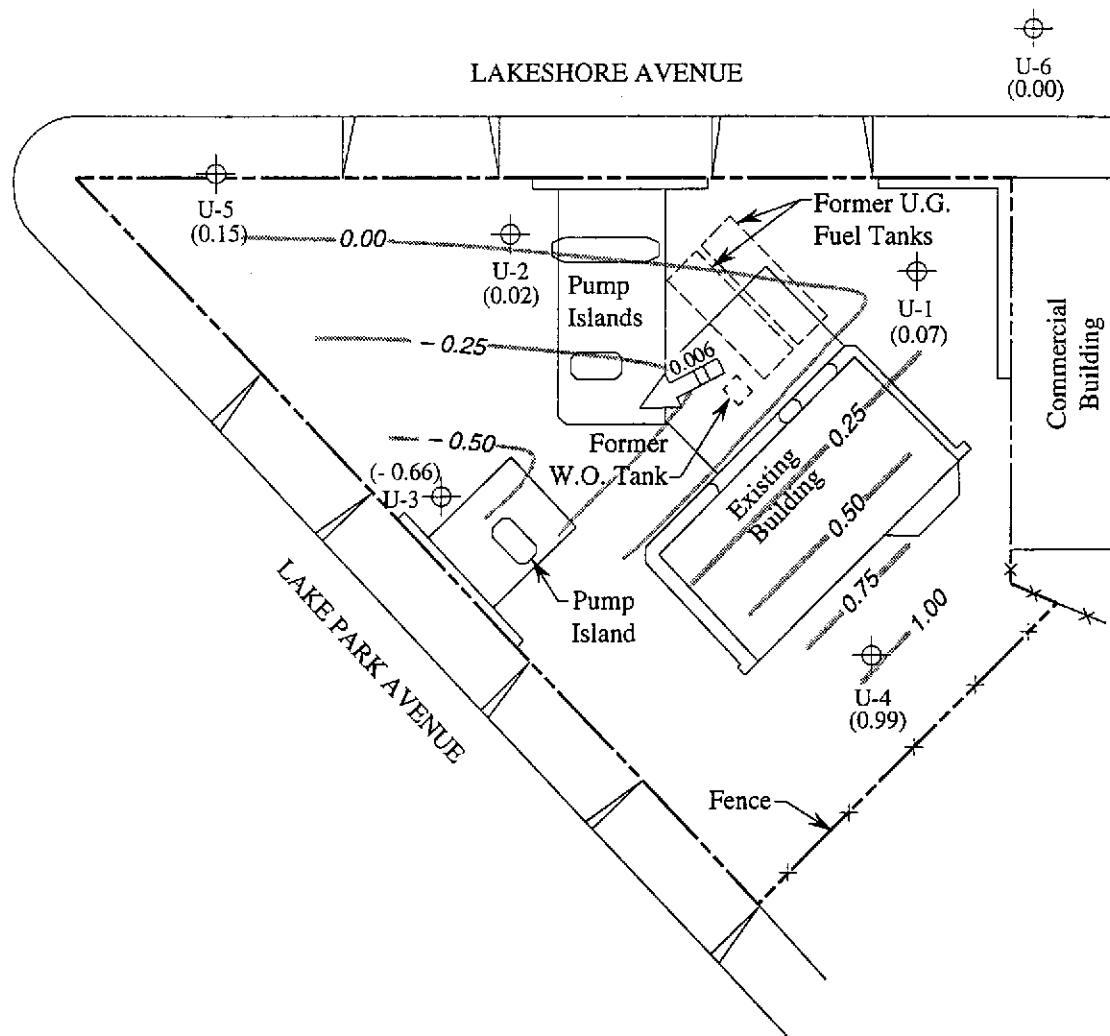
Base modified from 7.5 minute U.S.G.S.
 Oakland East and West Quadrangles
 (both photorevised 1980)







MPDS SERVICES, INCORPORATED

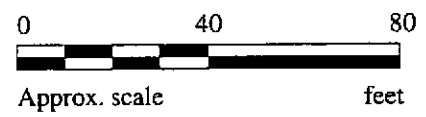
**UNOCAL SERVICE STATION #5325
 3220 LAKESHORE AVENUE
 OAKLAND, CALIFORNIA**

**LOCATION
 MAP**



LEGEND

-  Monitoring well
-  () Ground water elevation in feet above Mean Sea Level
-  ### → Direction of ground water flow with approximate hydraulic gradient
-  — Contours of ground water elevation

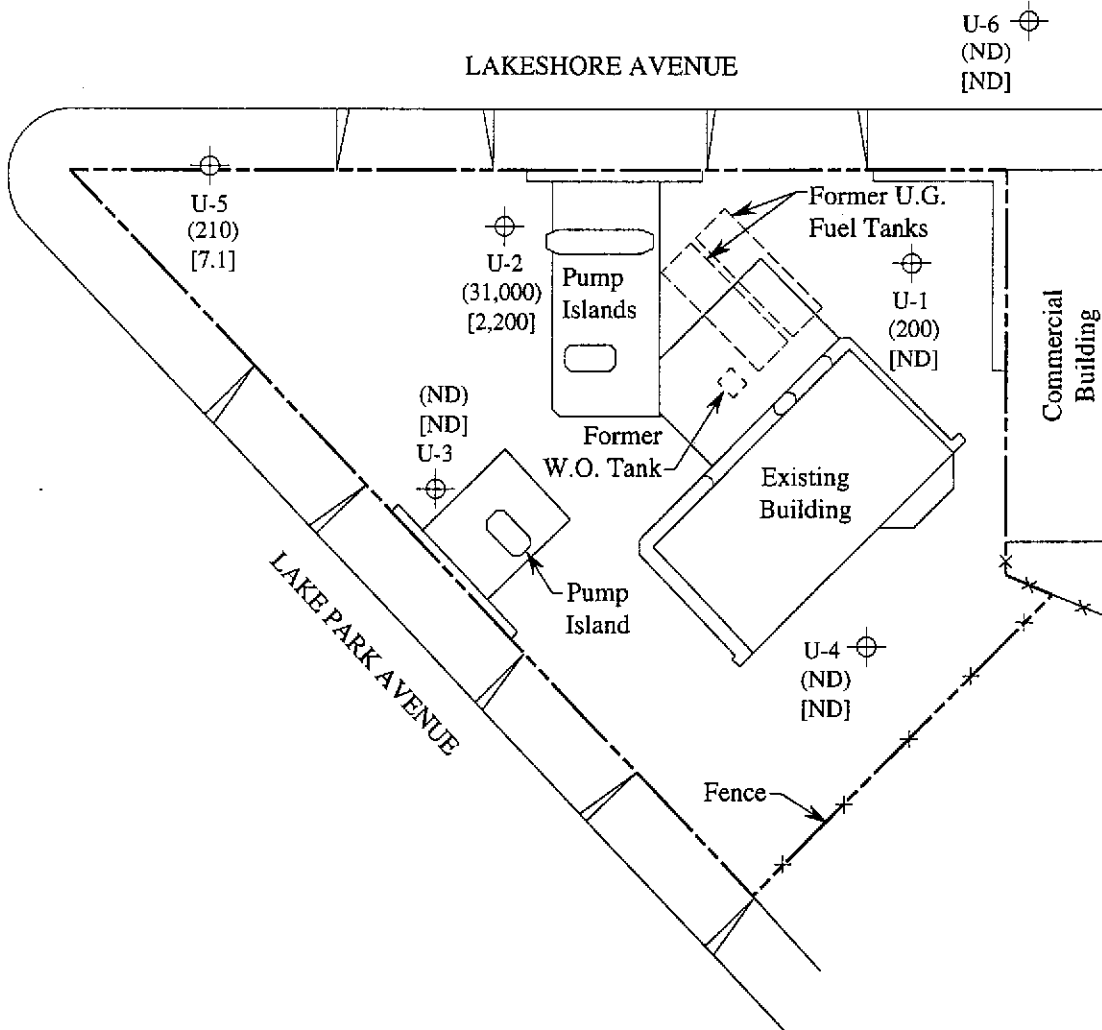


POTENTIOMETRIC SURFACE MAP FOR THE JUNE 22, 1994 MONITORING EVENT



**UNOCAL SERVICE STATION #5325
3220 LAKESHORE AVENUE
OAKLAND, CALIFORNIA**

**FIGURE
1**



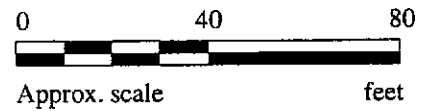
LEGEND

⊕ Monitoring well

() Concentration of TPH as gasoline in $\mu\text{g/L}$

[] Concentration of benzene in $\mu\text{g/L}$

ND = Non-detectable



PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON JUNE 22, 1994

mpds SERVICES, INCORPORATED

**UNOCAL SERVICE STATION #5325
3220 LAKESHORE AVENUE
OAKLAND, CALIFORNIA**

**FIGURE
2**



MPDS Services 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #5325, 3220 Lakeshore Ave, Oakland Sample Matrix: Water Analysis Method: EPA 5030/8015/8020 First Sample #: 406-1101	Sampled: Jun 22, 1994 Received: Jun 22, 1994 Reported: Jul 8, 1994
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TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 406-1101 U1	Sample I.D. 406-1102 U2	Sample I.D. 406-1103 U3	Sample I.D. 406-1104 U4	Sample I.D. 406-1105 U5	Sample I.D. 406-1106 U6
Purgeable Hydrocarbons	50	200	31,000	N.D.	N.D.	210	N.D.
Benzene	0.5	N.D.	2,200	N.D.	N.D.	7.1	N.D.
Toluene	0.5	N.D.	62	N.D.	N.D.	13	N.D.
Ethyl Benzene	0.5	5.9	1,500	N.D.	N.D.	4.5	N.D.
Total Xylenes	0.5	21	3,500	N.D.	N.D.	26	N.D.
Chromatogram Pattern:		Gasoline	Gasoline	--	--	Gasoline	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	10	1.0	1.0	1.0	1.0
Date Analyzed:	6/30/94	6/30/94	6/30/94	6/30/94	6/30/94	6/30/94
Instrument Identification:	ML2	ML2	ML2	ML2	ML2	ML2
Surrogate Recovery, %: (QC Limits = 70-130%)	93	90	95	93	93	93

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

SEQUOIA ANALYTICAL, #1271

Alan B. Kemp
 Project Manager





MPDS Services Client Project ID: Unocal #5325, 3220 Lakeshore Ave, Oakland
 2401 Stanwell Dr., Ste. 400 Matrix: Liquid
 Concord, CA 94520
 Attention: Avo Avedessian QC Sample Group: 4061101-06 Reported: Jul 8, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	E. Vomund	E. Vomund	E. Vomund	E. Vomund

MS/MSD	Benzene	Toluene	Ethyl Benzene	Xylenes
Batch#:	4061015	4061015	4061015	4061015
Date Prepared:	6/30/94	6/30/94	6/30/94	6/30/94
Date Analyzed:	6/30/94	6/30/94	6/30/94	6/30/94
Instrument I.D.#:	ML #2	ML #2	ML #2	ML #2
Conc. Spiked:	20 ppb	20 ppb	20 ppb	60 ppb
Matrix Spike % Recovery:	83	80	80	84
Matrix Spike Duplicate % Recovery:	115	110	110	110
Relative % Difference:	32	32	32	27

LCS Batch#:	LCS063094	LCS063094	LCS063094	LCS063094
Date Prepared:	6/30/94	6/30/94	6/30/94	6/30/94
Date Analyzed:	6/30/94	6/30/94	6/30/94	6/30/94
Instrument I.D.#:	ML #2	ML #2	ML #2	ML #2
LCS % Recovery:	100	95	95	98

% Recovery Control Limits:	71-133	72-128	72-130	71-120
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Please Note:
 The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271

Alan B. Kemp
 Project Manager



M P D S Services, Inc.

2401 Stanwell Drive, Suite 400, Concord, CA 94520
Tel: (510) 602-5120 Fax: (510) 689-1918

CHAIN OF CUSTODY

SAMPLER			UNOCAL					ANALYSES REQUESTED							TURN AROUND TIME:	
VARTKES TASHDJIAN			S/S # <u>5325</u> CITY: <u>Oakland</u>					TPH-GAS BTEX	TPH-DIESEL	TOG	8010					Regular
WITNESSING AGENCY			ADDRESS: <u>3220 Lakeshore Ave.</u>													
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION									
U1	6/22/94	2:13 P.M.	X	X		2 VOAs	MW	X							4061101 AB	
U2	"	3:05 P.M.	X	X		"	"	X							4061102	
U3	"	1:28 P.M.	X	X		"	"	X							4061103	
U4	"	4:00 P.M.	X	X		"	"	X							4061104	
U5	"	5:30 P.M.	X	X		"	"	X							4061105	
U6	"	4:35 P.M.	X	X		"	"	X							4061106 ✓	
RELINQUISHED BY:			DATE/TIME			RECEIVED BY:		THE FOLLOWING <u>MUST</u> BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:								
<i>Vartkes Tashdjian</i>			6/22/94 6:50 P.M.			<i>D. Kelly</i>		1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? yes								
(SIGNATURE)						(SIGNATURE)		2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? yes								
<i>Vartkes Tashdjian</i>			6/23/94 1:00 P.M.			<i>D. Kelly</i>		3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? NO								
(SIGNATURE)						(SIGNATURE)		4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? yes								
<i>D. Kelly</i>			6/23/94 3:30 P.M.			<i>D. Kelly</i>		SIGNATURE:			TITLE:		DATE:			
(SIGNATURE)						(SIGNATURE)		<i>D. Kelly</i>			Analyst		6/24/94			