M P D S
SERVICES, INCORPORATED

ALCO HAZMAT

94 MAR 10 PM 12:45

March 9, 1994

Alameda County Health Care Services
80 Swan Way, Room 200
Oakland, California 94621

RE: Unocal Service Station #1871
96 MacArthur Boulevard
Oakland, California

Per the request of the Unocal Corporation Project Manager, Mr. Robert A. Boust, enclosed please find our report (MPDS-UN1871-02) dated February 14, 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) 277-2334.

Sincerely,

MPDS Services, Inc.

Deanna L. Harding

Deanna L. Harding
Technical Assistant

/dlh

Enclosure

cc: Mr. Robert A. Boust

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

M P D S
SERVICES, INCORPORATED

MPDS-UN1871-02
February 14, 1994

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

Attention: Mr. Robert A. Boust

RE: Quarterly Data Report
Unocal Service Station #1871
96 MacArthur Boulevard
Oakland, California

Dear Mr. Boust:

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 **January 20, 1994.** Prior to sampling, the wells were each purged of between 18 and 36 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 and/or one-liter amber bottles, as appropriate, which were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory.

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 concen-

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Concord, California 94520
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trations 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.

DISTRIBUTION

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

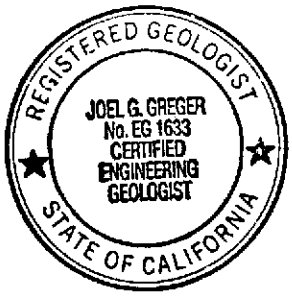
If you have any questions regarding this report, please do not hesitate to call at (510) 602-5120.

Sincerely,

MPDS Services, Inc.

Talin Kaloustian
Staff Engineer

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



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

/dlh

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

cc: Mr. Timothy R. Ross, Kaprealian Engineering, Inc.

TABLE 2

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

(Measured on January 20, 1994)

Well #	Gallons per Casing Volume	Time	Gallons Purged	Casing Volumes Purged	Temperature (°F)	Conductivity ([μmhos/cm] x1000)	pH
MW-1	5.82	14:45	0	0	70.5	0.96	6.68
			6	1.03	70.5	0.92	6.31
			12	2.06	70.9	0.96	6.30
			WELL DEWATERED				
		15:35	18	3.09			
MW-2	8.85	11:25	0	0	56.4	0.62	7.69
			9	1.02	64.7	0.68	6.63
			18	2.03	67.1	0.73	6.54
			WELL DEWATERED				
			27	3.05	71.5	0.75	6.57
			WELL DEWATERED				
		12:10	36	4.07	69.7	0.70	6.53
MW-3	7.18	12:55	0	0	71.4	0.92	6.10
			7.5	1.04	71.5	0.91	6.00
			15	2.09	71.5	0.92	5.85
			22	3.06	70.5	0.89	6.11
			WELL DEWATERED				
		14:00	29.5	4.11			

TABLE 3

SUMMARY OF LABORATORY ANALYSES
WATER

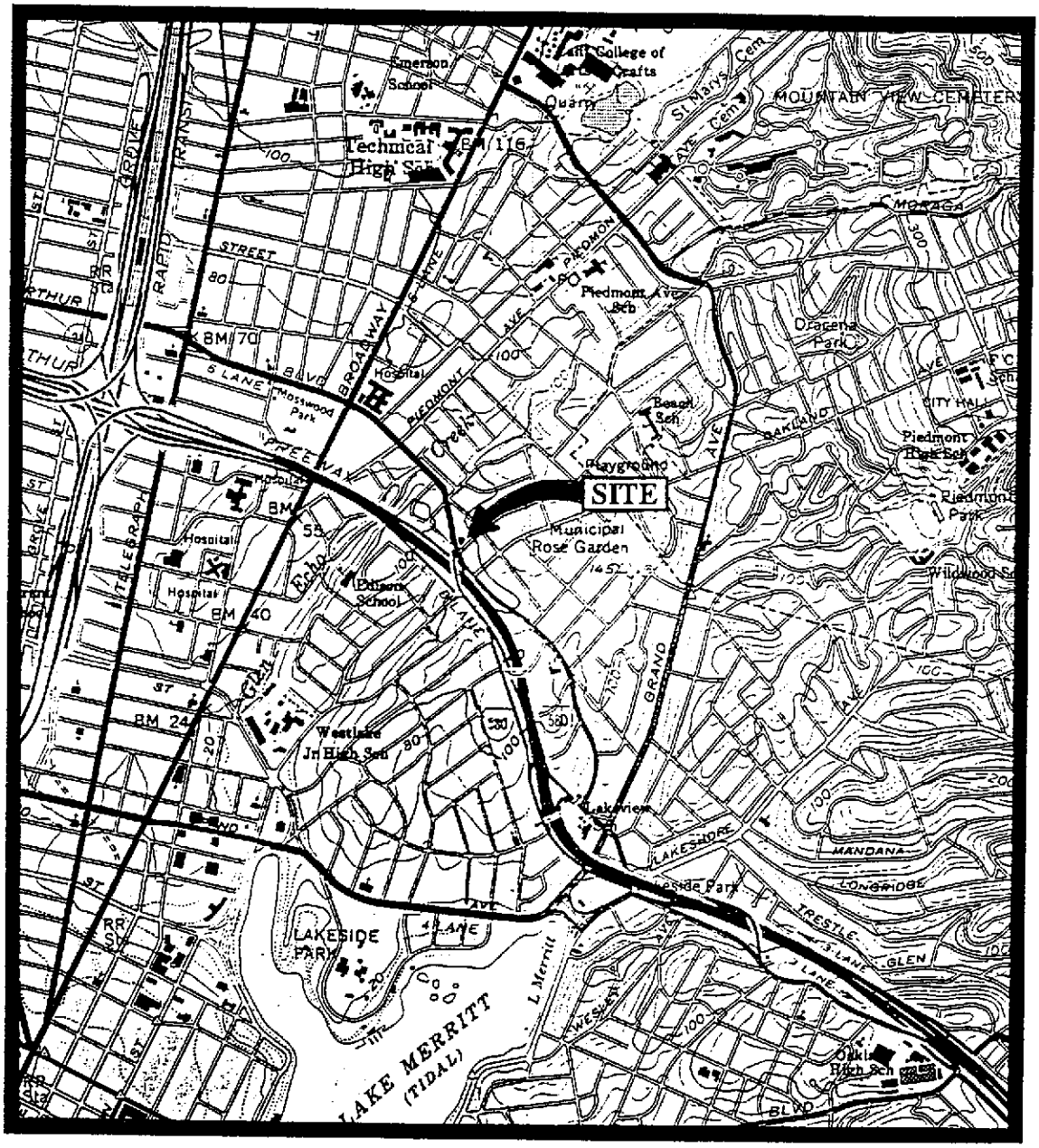
Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
1/20/94	MW-1	92,000 ↑	1,200 ↓	3,000	3,400	17,000
	MW-2	820 ↑	97 ↑	ND	12	ND
	MW-3	4,200 ↑	11 ↓	ND	21	15
10/19/93	MW-1	67,000	1,400	2,600	2,900	5,000
	MW-2	670	24	1.1	7.7	23
	MW-3	3,800	42	ND	50	56
7/16/93	MW-1	29,000	590	560	980	4,200
	MW-2	510*	17	0.6	3.2	2.5
	MW-3	4,000*	1,100	28	52	70
4/29/93	MW-1	100,000	850	2,000	4,300	19,000
	MW-2	1,500	290	ND	33	11
	MW-3	4,500	1,700	ND	200	140
1/25/93	MW-1	120,000	2,100	4,600	4,900	22,000
	MW-2	2,100	56	1.1	90	140
	MW-3	2,300	80	1	55	52
11/03/92	MW-1	260,000	2,300	4,600	3,700	17,000
	MW-2	140	2.2	ND	ND	2
	MW-3	2,100	120	15	38	200

* Primarily due to the presence of discrete peaks not indicative of gasoline.

ND = Non-detectable.

Results are in micrograms per liter (µg/L), unless otherwise indicated.

Note: Laboratory analyses data prior to October 19, 1993, were provided by GeoStrategies, Inc.

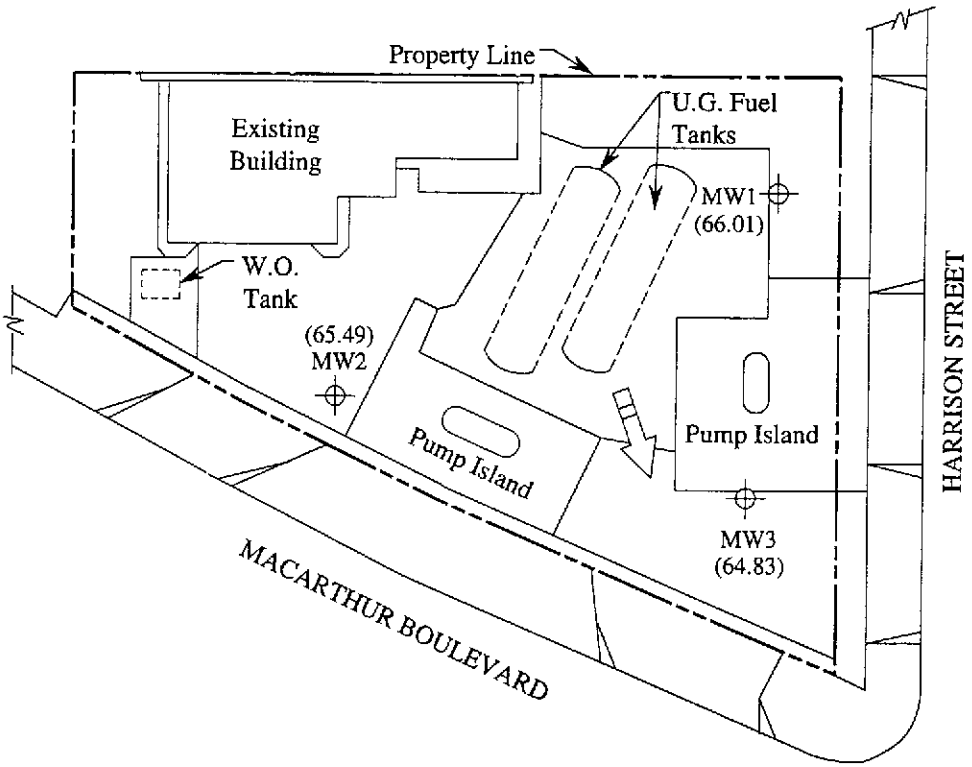


Base modified from 7.5 minute U.S.G.S.
Oakland East and West Quadrangles
(both photorevised 1980)

0 2000 4000

Approx. scale feet

MPDS SERVICES, INC.	**UNOCAL SERVICE STATION # 1871** **96 MACARTHUR BOULEVARD** **OAKLAND, CALIFORNIA**	**LOCATION MAP**



LEGEND

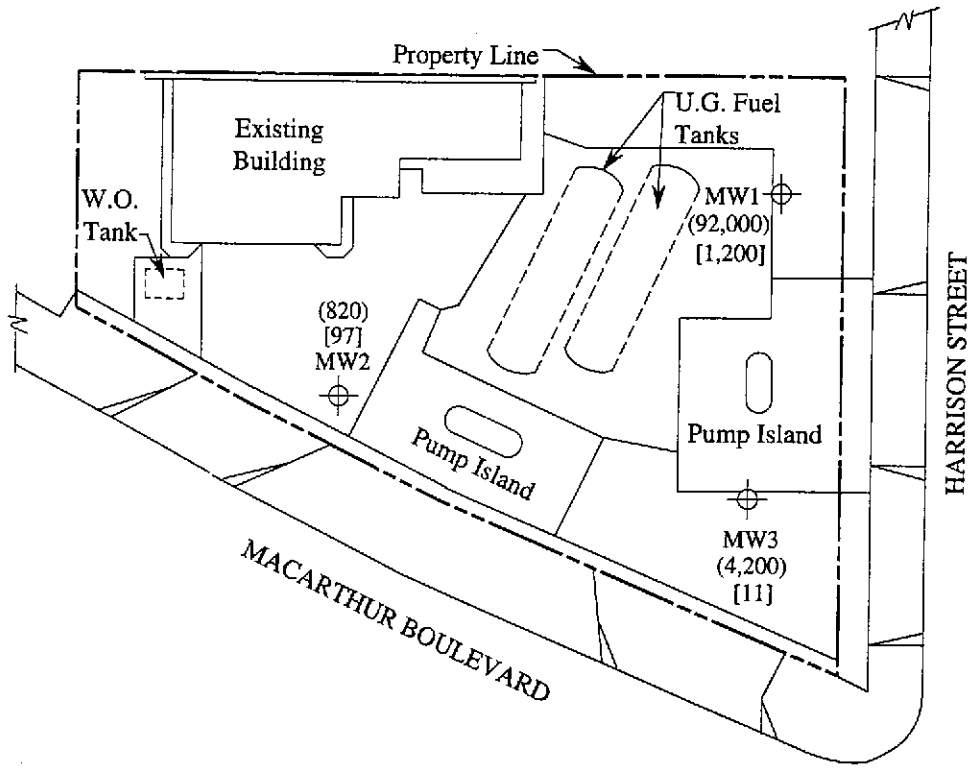
- Monitoring well
- ( ) Ground water elevation in feet above Mean Sea Level
- Direction of ground water flow

0 30 60

Approx. scale feet

GROUND WATER FLOW DIRECTION MAP FOR THE JANUARY 20, 1994 MONITORING EVENT

M P D S SERVICES, INC.	**UNOCAL SERVICE STATION # 1871** **96 MACARTHUR BOULEVARD** **OAKLAND, CALIFORNIA**	FIGURE **1**



LEGEND

- ⊕ Monitoring well
- ( ) Concentration of TPH as gasoline in µg/L
- [ ] Concentration of benezene in µg/L

0 30 60

Approx. scale feet

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON JANUARY 20, 1994

M P D S SERVICES, INC.	**UNOCAL SERVICE STATION # 1871** **96 MACARTHUR BOULEVARD** **OAKLAND, CALIFORNIA**	FIGURE **2**

SEQUOIA ANALYTICAL

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

MPDS Services, Inc.	Client Project ID:	Unocal #1871, 96 MacArthur Blvd., Oakland	Sampled:	Jan 20, 1994
2401 Stanwell Dr., Ste. 400	Sample Matrix:	Water	Received:	Jan 21, 1994
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Feb 7, 1994
Attention: Avo Avedissian	First Sample #:	401-1155		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 401-1155 MW-1	Sample I.D. 401-1156 MW-2	Sample I.D. 401-1157 MW-3	Sample I.D. Method Blank
Purgeable Hydrocarbons	50	92,000	820	4,200	
Benzene	0.5	1,200	97	11	
Toluene	0.5	3,000	N.D.	N.D.	
Ethyl Benzene	0.5	3,400	12	21	
Total Xylenes	0.5	17,000	N.D.	15	
Chromatogram Pattern:		Gasoline	Gasoline	Gasoline	

Quality Control Data

Report Limit Multiplication Factor:	1,000	4.0	20	1.0
Date Analyzed:	1/28/94	2/2/94	1/28/94	1/28/94
Instrument Identification:	HP-4	HP-2	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	86	113	108	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

Alan B. Kemp
Project Manager

SEQUOIA ANALYTICAL

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

MPDS Services, Inc.	Client Project ID:	Unocal #1871, 96 MacArthur Blvd., Oakland
2401 Stanwell Dr., Ste. 400	Matrix:	Liquid
Concord, CA 94520		
Attention: Avo Avedissian	QC Sample Group:	4011155-57

Reported: Feb 7, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Fontecha	J. Fontecha	J. Fontecha	J. Fontecha
MS/MSD Batch#:	4011182	4011182	4011182	4011182
Date Prepared:	1/28/94	1/28/94	1/28/94	1/28/94
Date Analyzed:	1/28/94	1/28/94	1/28/94	1/28/94
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	95	90	90	92
Matrix Spike Duplicate % Recovery:	90	90	90	92
Relative % Difference:	5.4	0.0	0.0	0.0
LCS Batch#:	2LCS012894	2LCS012894	2LCS012894	2LCS012894
Date Prepared:	1/28/94	1/28/94	1/28/94	1/28/94
Date Analyzed:	1/28/94	1/28/94	1/28/94	1/28/94
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	89	88	88	90
% Recovery Control Limits:	71-133	72-128	72-130	71-120

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 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

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

MPDS Services, Inc.	Client Project ID:	Unocal #1871, 96 MacArthur Blvd., Oakland
2401 Stanwell Dr., Ste. 400	Matrix:	Liquid
Concord, CA 94520		
Attention: Avo Avedissian	QC Sample Group:	4011155-57

Reported: Feb 7, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Fontecha	J. Fontecha	J. Fontecha	J. Fontecha
MS/MSD Batch#:	4011436	4011436	4011436	4011436
Date Prepared:	2/2/94	2/2/94	2/2/94	2/2/94
Date Analyzed:	2/2/94	2/2/94	2/2/94	2/2/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	105	100	100	100
Matrix Spike Duplicate % Recovery:	105	100	100	100
Relative % Difference:	0.0	0.0	0.0	0.0
LCS Batch#:	1LCS020294	1LCS020294	1LCS020294	1LCS020294
Date Prepared:	2/2/94	2/2/94	2/2/94	2/2/94
Date Analyzed:	2/2/94	2/2/94	2/2/94	2/2/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	105	102	102	103
% Recovery Control Limits:	71-133	72-128	72-130	71-120

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 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

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

MPDS Services, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedissian

Client Project ID: Unocal #1871, 96 MacArthur Blvd., Oakland
Matrix: Liquid
QC Sample Group: 4011155-57

Reported: Feb 7, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Fontecha	J. Fontecha	J. Fontecha	J. Fontecha
MS/MSD Batch#:	4011152	4011152	4011152	4011152
Date Prepared:	1/28/94	1/28/94	1/28/94	1/28/94
Date Analyzed:	1/28/94	1/28/94	1/28/94	1/28/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	100	95	95	98
Matrix Spike Duplicate % Recovery:	95	95	90	93
Relative % Difference:	5.1	0.0	5.4	5.2
LCS Batch#:	1LCS012894	1LCS012894	1LCS012894	1LCS012894
Date Prepared:	1/28/94	1/28/94	1/28/94	1/28/94
Date Analyzed:	1/28/94	1/28/94	1/28/94	1/28/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	95	93	92	94
% Recovery Control Limits:	71-133	72-128	72-130	71-120

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 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.

MPDS
Services, Inc.

CHAIN OF CUSTODY

SAMPLER: STEVE
WITNESSING AGENCY:

SITE NAME & ADDRESS: UNO. # 1871 OAKLAND, 96 MacARTHUR BLVD.

ANALYSES REQUESTED: TPH-G BTXE

TURN AROUND TIME: REGULAR

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-G BTXE	REMARKS
MW-1	1-20-94			X	X		2	MW	X	4011155 A-B
MW-2	"			X	X		2	"	X	1156
MW-3	"			X	X		2	"	X	1157

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
STEVE	1/21/94 0900	Eric Vanmund
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

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

1. Have all samples received for analysis been stored in ice? Y
2. Will samples remain refrigerated until analyzed? Y
3. Did any samples received for analysis have head space? N
4. Were samples in appropriate containers and properly packaged? Y

EV — Signature; FS — Title; 1/21/94 — Date

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