MONITORING
PURGING
DISPOSING
SAMPLING
mpds SERVICES, INCORPORATED

MPDS-UN5487-03
August 25, 1994

TB

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

FILE # 5487 SS ✓ BP
RPT QM ✓ TRANSMITTAL
1 2 3 4 5 6

Attention: Mr. Tim Howard

RE: Quarterly Data Report
Unocal Service Station #5487
28250 Hesperian Boulevard
Hayward, California

Dear Mr. Howard:

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 August 2, 1994. Prior to sampling, the wells were each purged of between 8 and 14 gallons of water. 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. 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 2. 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, and the City of Hayward Fire Department.

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

/bp

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

cc: Mr. Thomas Berkins, Kaprealian Engineering, Inc.

TABLE 1

SUMMARY OF MONITORING DATA

Well #	Ground Water Elevation (feet)	Depth to Water (feet)♦	Product Thickness (feet)	Sheen	Water Purged (gallons)	Total Well Depth (feet)♦
(Monitored and Sampled on August 2, 1994)						
MW1	4.84	6.89	0	No	14	27.37
MW2	4.71	7.87	0	No	11	23.84
MW3	4.75	7.24	0	No	11.5	24.00
MW4	4.63	6.95	0	No	12.5	24.60
MW5	4.11	6.68	0	No	12	24.14
MW6	4.30	6.88	0	No	8	18.03
(Monitored and Sampled on May 2, 1994)						
MW1*	5.46	6.27	0	--	0	27.35
MW2*	5.35	7.23	0	--	0	23.84
MW3*	5.37	6.62	0	--	0	23.98
MW4*	5.26	6.32	0	--	0	24.58
MW5	4.83	5.96	0	No	12.5	24.12
MW6	5.00	6.18	0	No	8.5	18.02
(Monitored and Sampled on February 7, 1994)						
MW1*	5.47	6.26	0	--	0	27.23
MW2*	5.49	7.09	0	--	0	23.79
MW3*	5.41	6.58	0	--	0	23.93
MW4*	5.37	6.21	0	--	0	24.53
MW5	5.09	5.70	0	No	13	24.07
MW6	5.18	6.00	0	No	9	17.95
(Monitored and Sampled on November 5, 1993)						
MW1*	4.75	6.98	0	--	0	
MW2*	4.61	7.97	0	--	0	
MW3*	4.64	7.35	0	--	0	
MW4*	4.51	7.07	0	--	0	
MW5	3.98	6.81	0	No	12	
MW6	4.16	7.02	0	No	7.5	

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

Well #	Well Casing Elevation (feet)**
MW1	11.73
MW2	12.58
MW3	11.99
MW4	11.58
MW5	10.79
MW6	11.18

♦ The depth to water level and total well depth measurements were taken from the top of the well casings.

* Monitored only.

** The elevations of the top of the well casings are relative to Mean Sea Level (MSL), per the City of Hayward Benchmark (elevation = 10.97 feet MSL).

-- *Sheen determination was not performed.*

Note: Monitoring data prior to February 7, 1994, were provided by Kaprealian Engineering, Inc.

TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
8/02/94	MW1	--	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	59	16	ND	2.4	3.1
	MW6	--	220	13	1.0	12	28
5/02/94	MW5	--	170♦	38	0.73	8.5	8.4
	MW6	--	440♦	20	4.2	11	26
2/07/94	MW5	--	180	22	ND	6.4	5.9
	MW6	--	1,100	130	14	13	130
11/05/93	MW5	--	110	12	ND	2.3	2.3
	MW6	--	100	1.8	ND	0.79	2.2
8/05/93	MW1	--	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	530	210	0.62	54	44
	MW6	--	230	25	1.6	12	29
5/03/93	MW5	--	260	35	ND	2.3	3.1
	MW6	--	520	47	2.6	33	48
2/02/93	MW5	--	77♦	5.0	ND	1.2	1.3
	MW6	--	400♦	66	5.5	32	13
11/05/92	MW5	--	120	16	ND	3.5	3.0
	MW6	--	300	16	2.3	14	14

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
8/04/92	MW1	--	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	80	13	ND	4.5	6.9
	MW6	--	540	12	7.9	35	110
5/05/92	MW5	--	170	45	0.48	9.0	6.8
2/05/92	MW5	--	120	20	ND	4.4	4.7
11/07/91	MW1	--	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	700	43	1.7	29	24
8/02/91	MW1	--	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	100	43	0.33	12	5.2
5/10/91	MW1	--	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	ND	ND	ND	ND	ND
	MWD▲	--	ND	ND	ND	ND	ND
2/11/91	MW1*	ND	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	58	23	ND	2.9	1.3

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
11/15/90	MW1*	ND	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	ND	ND	ND	ND	0.47
8/29/90	MW1*	ND	ND	ND	ND	ND	0.74
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	0.52	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	ND	0.70	ND	0.57	1.1
5/16/90	MW1*	ND	ND	ND	ND	ND	ND
	MW2*	ND	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	1,100	310	2.8	70	110
2/16/90	MW1*	ND	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	ND	ND	ND	ND	ND
11/14/89	MW1*	ND	ND	ND	ND	ND	ND
	MW2*	ND	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	73	4.7	0.97	2.9	16
8/31/89	MW5	--	910	120	7.1	50	53
8/16/89	MW1**	ND	ND	ND	ND	ND	ND
	MW2**	ND	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	4,400	1,400	84	200	950

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
4/26/89	MW1*	ND	ND	2.1	ND	ND	ND
	MW2*	ND	ND	ND	ND	ND	ND
	MW3*	ND	ND	ND	ND	ND	ND
	MW4*	ND	ND	0.33	ND	ND	ND
	MW5*	ND	ND	ND	ND	ND	ND

♦ Sequoia Analytical Laboratory reported that the hydrocarbons detected appear to be a gasoline and non-gasoline mixture.

▲ MWD was a quality assurance duplicate water sample collected from well MW5.

* Total Oil & Grease (TOG) and all EPA method 8010 constituents were non-detectable.

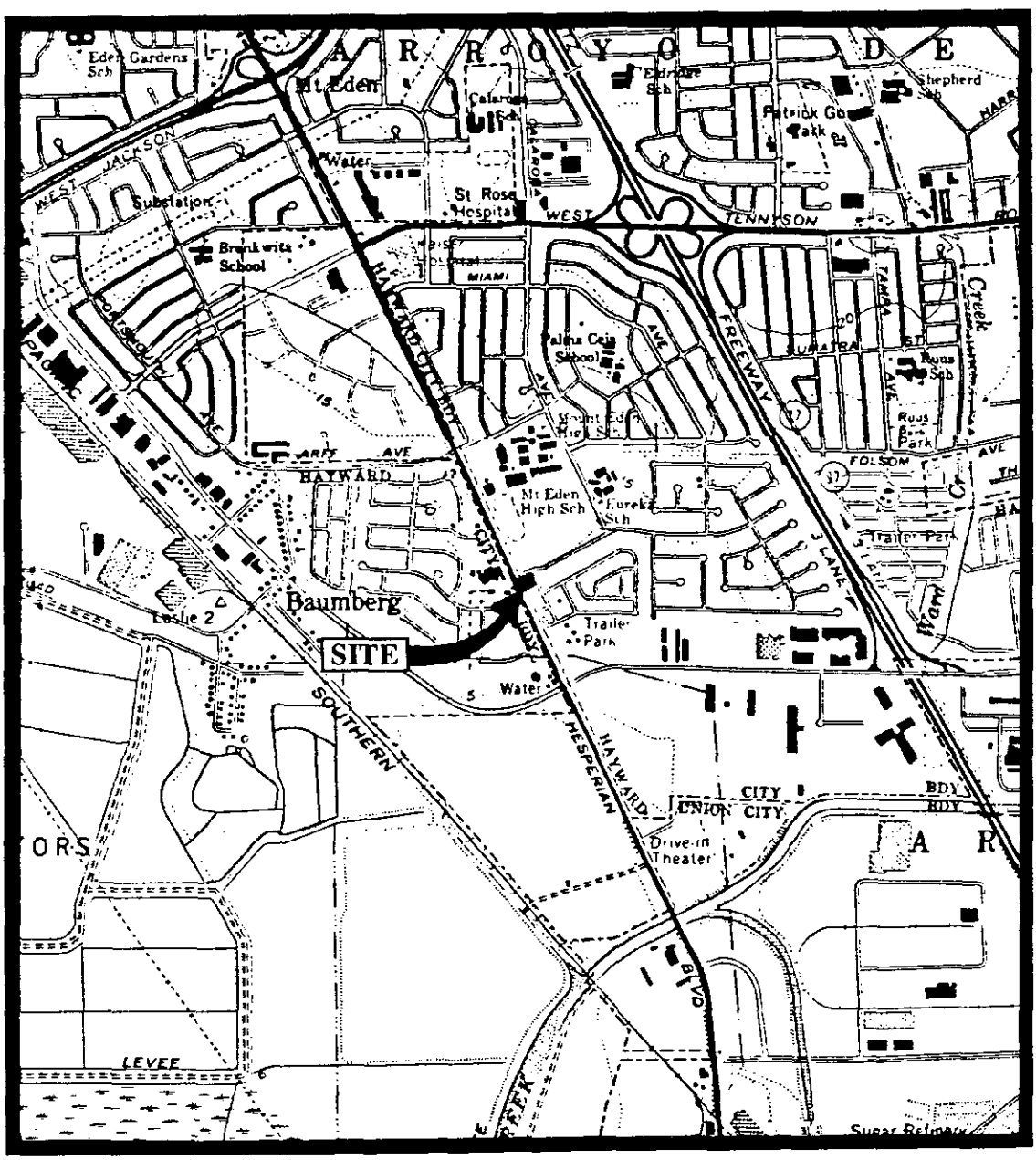
** TOG for the samples collected from MW1 and MW2 were 23 milligrams per liter (mg/L) and 7.4 mg/L, respectively. All EPA method 8010 constituents were non-detectable for both samples.

ND = Non-detectable.

-- Indicates that analysis was not performed.

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

Note: Laboratory analyses data prior to February 7, 1994, were provided by Kaprealian Engineering, Inc.

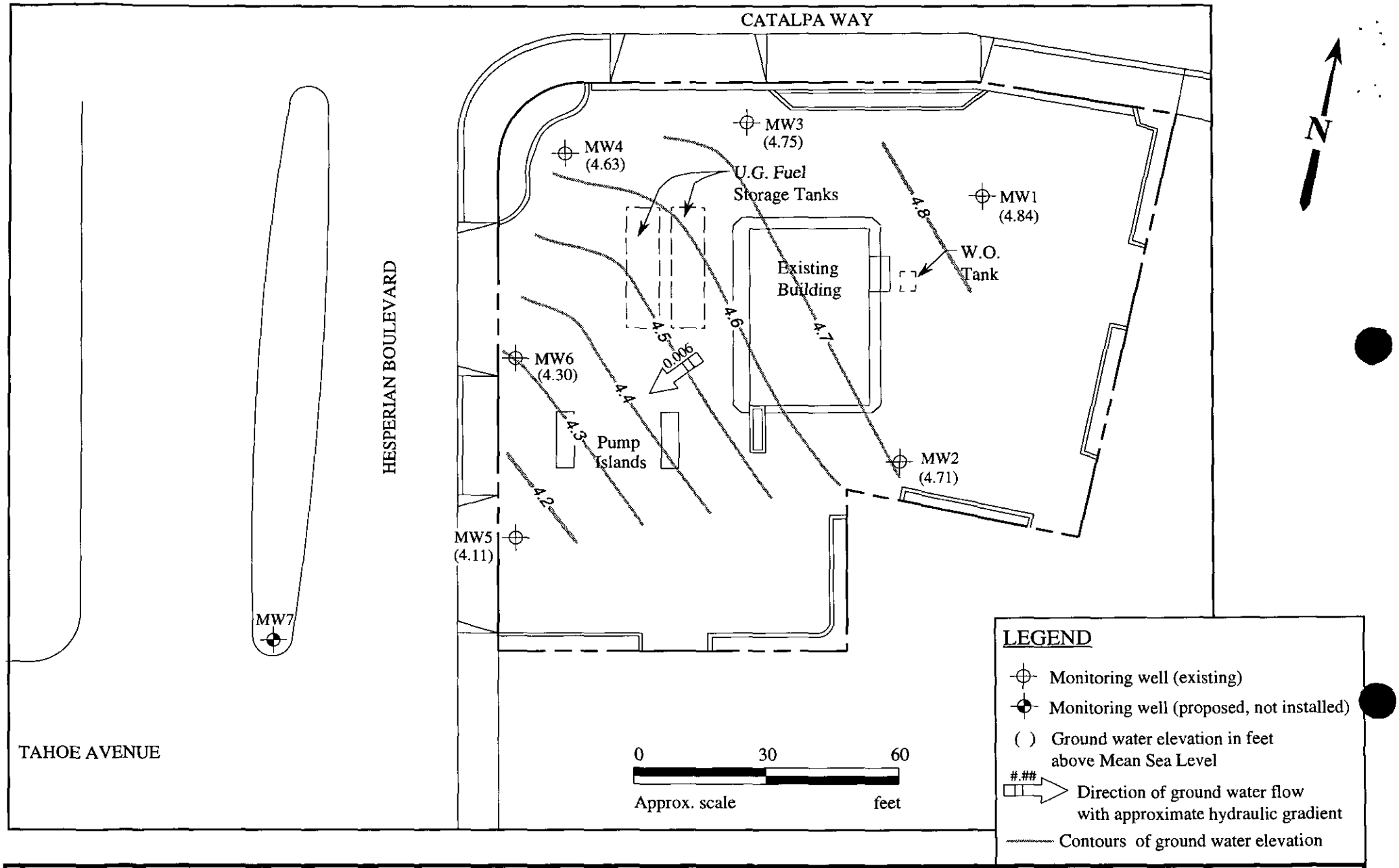


Base modified from 7.5 minute U.S.G.S.
Hayward & Newark Quadrangles
(both photorevised 1980)

0 2000 4000

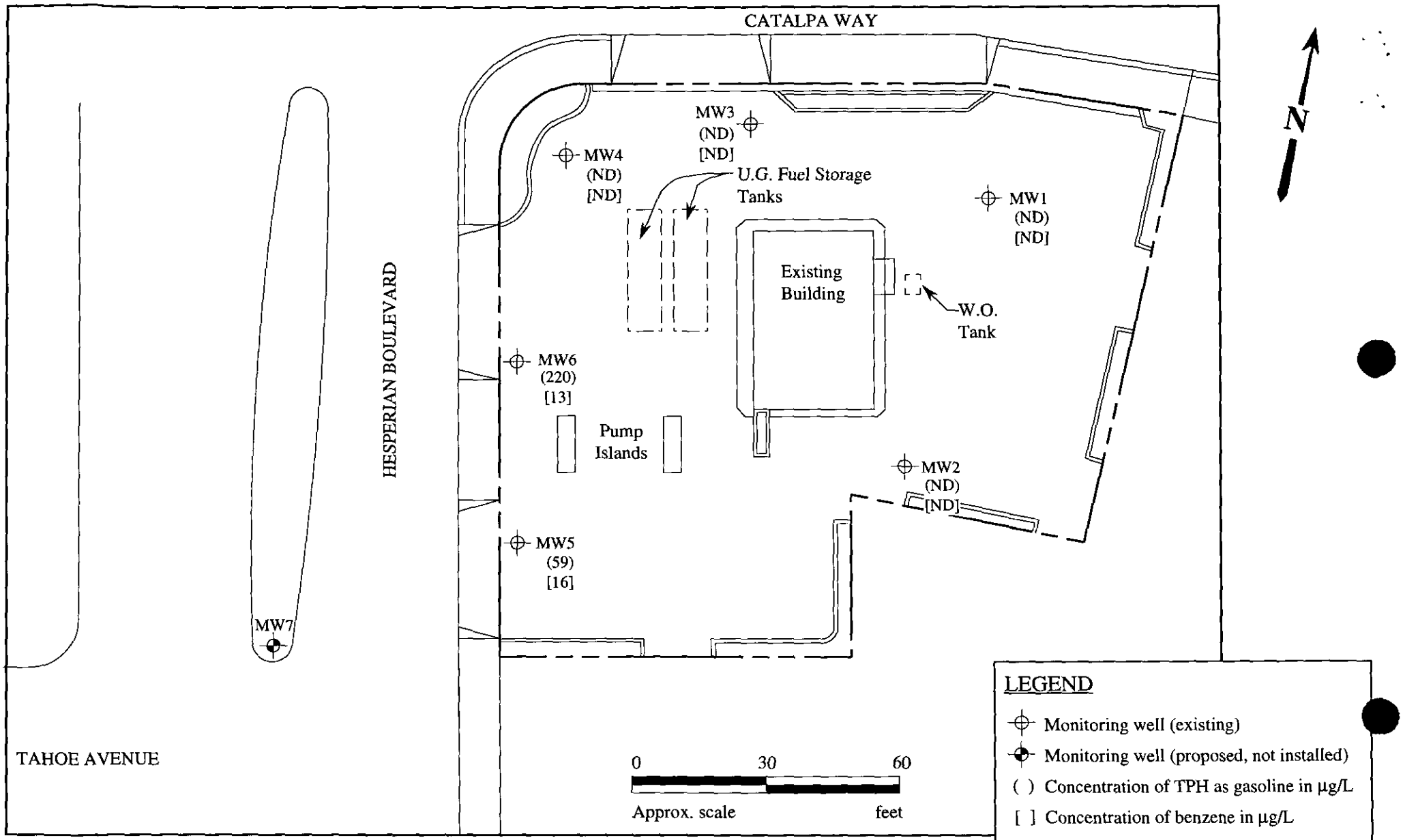
Approx. scale feet

mpds SERVICES, INCORPORATED	**UNOCAL SERVICE STATION #5487** **28250 HESPERIAN BOULEVARD** **HAYWARD, CALIFORNIA**	**LOCATION MAP**



POTENTIOMETRIC SURFACE MAP FOR THE AUGUST 2, 1994 MONITORING EVENT

mpds SERVICES, INCORPORATED	**UNOCAL SERVICE STATION #5487** **28250 HESPERIAN BOULEVARD** **HAYWARD, CALIFORNIA**	FIGURE **1**



PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON AUGUST 2, 1994

mpds SERVICES, INCORPORATED	**UNOCAL SERVICE STATION #5487** **28250 HESPERIAN BOULEVARD** **HAYWARD, CALIFORNIA**	FIGURE **2**

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Unocal #5487, 28250 Hesperian Blvd., Hayward	Sampled:	Aug 2, 1994
2401 Stanwell Dr., Ste. 400	Matrix Descript:	Water	Received:	Aug 2, 1994
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Aug 17, 1994
Attention: Avo Avedissian	First Sample #:	408-0382		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Sample Number	Sample Description	Purgeable Hydrocarbons µg/L	Benzene µg/L	Toluene µg/L	Ethyl Benzene µg/L	Total Xylenes µg/L
408-0382	MW-1	ND	ND	ND	ND	ND
408-0383	MW-2	ND	ND	ND	ND	ND
408-0384	MW-3	ND	ND	ND	ND	ND
408-0385	MW-4	ND	ND	ND	ND	ND
408-0386	MW-5	59	16	ND	2.4	3.1
408-0387	MW-6	220	13	1.0	12	28
Detection Limits:		**50**	**0.50**	**0.50**	**0.50**	**0.50**

Total Purgeable Petroleum Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as ND were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

4080382.MPD <1>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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MPDS Services	Client Project ID:	Unocal #5487, 28250 Hesperian Blvd., Hayward	Sampled:	Aug 2, 1994
2401 Stanwell Dr., Ste. 400	Matrix Descript:	Water	Received:	Aug 2, 1994
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Aug 17, 1994
Attention: Avo Avedissian	First Sample #:	408-0382		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Sample Number	Sample Description	Chromatogram Pattern	DL Mult. Factor	Date Analyzed	Instrument ID	Surrogate Recovery, % QC Limits: 70-130
408-0382	MW-1	--	1.0	8/15/94	HP-2	96
408-0383	MW-2	--	1.0	8/15/94	HP-5	98
408-0384	MW-3	--	1.0	8/15/94	HP-5	95
408-0385	MW-4	--	1.0	8/15/94	HP-5	98
408-0386	MW-5	Gasoline	1.0	8/15/94	HP-5	103
408-0387	MW-6	Gasoline	1.0	8/15/94	HP-5	87

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

Sequoia Analytical

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

Client Project ID: Unocal #5487, 28250 Hesperian Blvd., Hayward
Matrix: Liquid

QC Sample Group: 4080382-87

Reported: Aug 17, 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#:	4080390	4080390	4080390	4080390
Date Prepared:	8/15/94	8/15/94	8/15/94	8/15/94
Date Analyzed:	8/15/94	8/15/94	8/15/94	8/15/94
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	90	105	105	105
Matrix Spike Duplicate % Recovery:	95	105	105	105
Relative % Difference:	5.4	0.0	0.0	0.0
LCS Batch#:	3LCS081594	3LCS081594	3LCS081594	3LCS081594
Date Prepared:	8/15/94	8/15/94	8/15/94	8/15/94
Date Analyzed:	8/15/94	8/15/94	8/15/94	8/15/94
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	106	112	113	109
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL, #1271

Signature on File

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

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

Client Project ID: Unocal #5487, 28250 Hesperian Blvd., Hayward
Matrix: Liquid
QC Sample Group: 4080382-87
Reported: Aug 17, 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#:	4080389	4080389	4080389	4080389
Date Prepared:	8/15/94	8/15/94	8/15/94	8/15/94
Date Analyzed:	8/15/94	8/15/94	8/15/94	8/15/94
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	105	110	98
Matrix Spike Duplicate % Recovery:	100	105	105	105
Relative % Difference:	4.9	0.0	4.7	6.9
LCS Batch#:	1LCS081594	1LCS081594	1LCS081594	1LCS081594
Date Prepared:	8/15/94	8/15/94	8/15/94	8/15/94
Date Analyzed:	8/15/94	8/15/94	8/15/94	8/15/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	103	102	104	110
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL, #1271

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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.

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: STEVE BALIAN
WITNESSING AGENCY:
UNOCAL S/S # 5487 CITY: HAYWARD
ADDRESS: 28250 HESPERIAN BLVD.

ANALYSES REQUESTED: TPH-GAS BTEX; TPH-DIESEL; TOG; 8010

TURN AROUND TIME: REGULAR

SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	REMARKS
MW-1	8-2-94	11:40	X	X		2-V	WELL	4080382 AB
MW-2	"	12:10	X	X		"	"	4080383
MW-3	"	12:45	X	X		"	"	4080384
MW-4	"	13:15	X	X		"	"	4080385
MW-5	"	14:20	X	X		"	"	4080386
MW-6	"	13:50	X	X		"	"	4080387

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
STEVE BALIAN 8-2-94	18:25	RM Kelley 8/2/94 6:25 PM
(SIGNATURE)		(SIGNATURE)
(SIGNATURE)		(SIGNATURE)
(SIGNATURE)		(SIGNATURE)
(SIGNATURE)		(SIGNATURE)

THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:

1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? Yes
2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? Yes
3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? No
4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? Yes

SIGNATURE: RM Kelley TITLE: Sample Control DATE: 8/2/94