MONITORING
PURGING
DISPOSING
SAMPLING
mpds SERVICES, INCORPORATED

MPDS-UN0752-08
November 6, 1995

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

Attention: Ms. Tina R. Berry

RE: Quarterly Data Report
Unocal Service Station #0752
800 Harrison Street
Oakland, California

Dear Ms. Berry:

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 October 10, 1995. Prior to sampling, the wells were each purged of between 6.5 and 10.5 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. Trip blank, Equipment blank and Field blank samples (denoted as ES1, ES2 and ES3 respectively) were also collected for quality assurance and control. 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 Tables 2, 3, and 4. The concentra-

tions 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

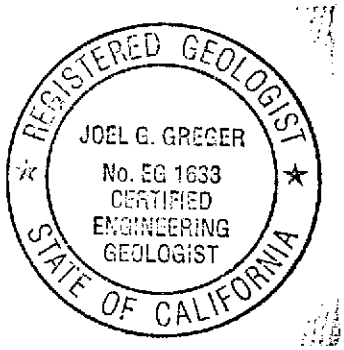
A copy of this report should be sent to Ms. Jennifer Eberle of the Alameda County Health Care Services Agency.

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

Sincerely,

MPDS Services, Inc.

Haig (Gary) Tejirian
Senior Staff Geologist



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

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

/bp

Attachments: Tables 1 through 4
Location Map
Figures 1 & 2
Laboratory Analyses
Chain of Custody documentation

cc: Mr. Robert H. Kezerian, Kaprealian Engineering, Inc.

TABLE 1

SUMMARY OF MONITORING DATA

Well #	Ground Water Elevation (feet)	Depth to Water (feet)◆	Total Well Depth (feet)◆	Product Thickness (feet)	Sheen	Water Purged (gallons)
(Monitored and Sampled on October 10, 1995)						
MW1	15.09	19.60	33.96	0	No	10
MW2	15.47	19.25	30.75	0	No	8
MW3	14.64	18.50	30.81	0	No	8.5
MW4	14.68	18.03	32.61	0	No	10
MW5	14.80	18.15	32.00	0	No	10.5
MW6	14.48	17.68	31.25	0	No	10
MW7	14.12	18.08	32.16	0	No	10
MW8	14.15	17.85	27.15	0	No	6.5
(Monitored and Sampled on July 14, 1995)						
MW1	16.11	18.58	33.45	0	No	10.5
MW2	16.42	18.30	30.72	0	No	8.5
MW3	15.65	17.49	30.74	0	No	9.5
MW4	15.70	17.01	32.57	0	No	11
MW5	15.77	17.18	31.95	0	No	10.5
MW6	15.53	16.63	31.18	0	No	10
MW7	15.15	17.05	32.22	0	No	10.5
MW8	15.19	16.81	27.27	0	No	7.5
(Monitored and Sampled on April 3, 1995)						
MW1	17.08	17.61	33.37	0	No	11
MW2	17.23	17.49	30.26	0	No	9
MW3	16.76	16.38	30.61	0	No	10
MW4	16.84	15.87	32.52	0	No	12
MW5	16.80	16.15	31.92	0	No	11
MW6	16.68	15.48	31.15	0	No	11
MW7	16.39	15.81	31.20	0	No	11
MW8	16.46	15.54	26.96	0	No	8

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

Well #	Ground Water Elevation (feet)	Depth to Water (feet)◆	Total Well Depth (feet)◆	Product Thickness (feet)	Sheen	Water Purged (gallons)
(Monitored and Sampled on January 2, 1995)						
MW1	15.02	19.67	33.50	0	No	10
MW2	15.47	19.25	31.00	0	No	8.5
MW3	14.78	18.36	31.35	0	No	9
MW4	14.96	17.75	32.60	0	No	10.5
MW5	15.03	17.92	31.96	0	No	10
MW6	14.65	17.51	31.62	0	No	10
MW7	14.53	17.67	32.10	0	No	10
MW8	14.42	17.58	28.77	0	No	8

Well #	Well Casing Elevation (feet)*
MW1	34.69
MW2	34.72
MW3	33.14
MW4	32.71
MW5	32.95
MW6	32.16
MW7	32.20
MW8	32.00

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

* The elevations of the top of the well casings are relative to Mean Sea Level (MSL), per the City of Oakland benchmark disk stamped "25/A" at the northeast corner of 7th and Harrison (elevation = 28.81 feet MSL).

TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
MW1	6/05/91	47	ND	ND	ND	ND
MW1	9/30/91	ND	ND	ND	ND	ND
MW1	12/30/91	ND	ND	ND	ND	ND
MW1	4/02/92	ND	ND	ND	ND	ND
MW1	6/30/92	ND	ND	ND	ND	ND
MW1	9/15/92	76	1.0	ND	ND	ND
MW1	12/21/92	95	0.69	ND	ND	1.0
MW1	4/28/93	920	3.1	2.3	1.2	9.7
MW1	7/23/93	ND	0.50	0.66	ND	ND
MW1	10/05/93	92**	1.5	ND	ND	0.72
MW1	1/03/94	ND	ND	ND	ND	ND
MW1	4/02/94	ND	ND	ND	ND	ND
MW1	7/05/94	250	4.8	13	1.2	7.3
MW1	10/06/94	540	1.4	ND	0.66	11
MW1	1/02/95	140	ND	ND	ND	ND
MW1	4/03/95	580	3.6	0.75	ND	4.0
MW1	7/14/95	260	2.1	ND	ND	1.2
MW1	10/10/95	220	2.0	ND	25	5.6
MW2	6/05/91	49	ND	ND	ND	ND
MW2	9/30/91	130	18	0.53	14	9.6
MW2	12/30/91	91	16	0.89	11	1.9
MW2	4/02/92	88	12	0.32	6.3	7.2
MW2	6/30/92	76	9.3	0.76	4.8	6.9
MW2	9/15/92	1,300	91	5.7	80	110
MW2	12/21/92	960	97	3.2	74	96
MW2	4/28/93	1,300	76	1.9	130	87
MW2	7/23/93	66	1.8	ND	2.5	2.0
MW2	10/05/93	120	12	ND	2.1	12
MW2	1/03/94	260	25	ND	5.5	26
MW2	4/02/94	ND	0.65	ND	ND	0.99
MW2	7/05/94	160	16	ND	0.73	10
MW2	10/06/94	170	15	ND	1.4	11
MW2	1/02/95	190	27	ND	0.95	11
MW2	4/03/95	2,400	65	6.6	19	63
MW2	7/14/95	750	270	ND	ND	13
MW2	10/10/95	50	1.6	ND	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
MW3	6/05/91	5,800	1,200	40	140	97
MW3	9/30/91	6,800	1,400	130	290	240
MW3	12/30/91	7,200	2,100	690	410	550
MW3	4/02/92	8,000	1,400	200	300	310
MW3	6/30/92	8,900	1,900	210	430	550
MW3	9/15/92	10,000	1,900	330	400	580
MW3	12/21/92	8,500	1,500	150	310	330
MW3	4/28/93	2,600	220	7.6	41	27
MW3	7/23/93	4,400	660	26	160	82
MW3	10/05/93	9,200	720	88	140	140
MW3	1/03/94	4,900	830	100	170	150
MW3	4/02/94	6,000	800	30	140	110
MW3	7/05/94	25,000**	ND	ND	ND	ND
MW3	10/06/94	49,000*	1,300	200	280	300
MW3	1/02/95	480	1.6	ND	1.4	ND
MW3	4/03/95	8,100**	65	ND	ND	ND
MW3	7/14/95	ND	1,300	ND	ND	ND
MW3	**10/10/95**	**3,100**	**1,400**	36	50	53
MW4	10/19/92	480	0.51	2.1	2.8	6.8
MW4	12/21/92	220*	ND	ND	0.97	0.74
MW4	4/28/93	ND	ND	ND	ND	ND
MW4	7/23/93	85*	ND	ND	ND	ND
MW4	10/05/93	130**	ND	ND	ND	ND
MW4	1/03/94	210	ND	ND	0.76	1.6
MW4	4/02/94	89	ND	ND	ND	ND
MW4	7/05/94	190**	ND	ND	ND	ND
MW4	10/06/94	170	0.85	ND	ND	0.74
MW4	1/02/95	ND	ND	ND	ND	ND
MW4	4/03/95	98**	ND	ND	ND	ND
MW4	7/14/95	ND	ND	ND	ND	ND
MW4	**10/10/95**	ND	ND	ND	ND	ND
MW5	10/19/92	2,700	61	5.0	100	61
MW5	12/21/92	1,700	51	4.7	83	34
MW5	4/28/93	6,700	200	190	250	430
MW5	7/23/93	2,000	122	8.0	68	47
MW5	10/05/93	1,700	70	6.2	54	40
MW5	1/03/94	1,500	44	ND	42	46

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
MW5	4/02/94	1,800	46	5.1	38	35
MW5	7/05/94	2,200	97	8.4	37	36
MW5	10/06/94	1,600	79	5.7	28	22
MW5	1/02/95	1,700	50	8.6	30	28
MW5	4/03/95	5,400**	190	240	170	420
MW5	7/14/95	3,800	210	100	130	190
MW5	10/10/95	1,300	92	14	15	39
MW6	10/19/92	3,900	420	12	60	28
MW6	12/21/92	2,300	370	11	39	15
MW6	4/28/93	1,200	54	1.5	11	5.3
MW6	7/23/93	580	19	0.99	3.4	2.7
MW6	10/05/93	1,400	34	ND	5.3	7.3
MW6	1/03/94	1,400	57	ND	8.5	11
MW6	4/02/94	5,300*	ND	ND	ND	ND
MW6	7/05/94	ND	ND	ND	ND	ND
MW6	10/06/94	11,000**	ND	ND	ND	ND
MW6	1/02/95	550	18	0.92	2.0	1.8
MW6	4/03/95	6,600**	ND	ND	ND	ND
MW6	7/14/95	ND	ND	ND	ND	ND
MW6	10/10/95	ND	81	ND	ND	ND
MW7	4/28/93	110	2.8	1.3	1.4	1.7
MW7	7/23/93	790	23	3.3	28	5.4
MW7	10/05/93	360	10	1.2	0.91	0.99
MW7	1/03/94	ND	0.93	ND	0.75	1.9
MW7	4/02/94	360	2.0	ND	ND	0.80
MW7	7/05/94	ND	ND	ND	ND	ND
MW7	10/06/94	340	5.6	0.85	ND	1.2
MW7	1/02/95	ND	ND	ND	ND	ND
MW7	4/03/95	570	24	ND	3.4	5.8
MW7	7/14/95	ND	14	ND	ND	ND
MW7	10/10/95	740	170	ND	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
MW8	4/28/93	450	18	1.8	1.8	1.4
MW8	7/23/93	260	5.1	ND	0.60	ND
MW8	10/05/93	120**	1.7	ND	ND	ND
MW8	1/03/94	ND	ND	ND	ND	ND
MW8	4/02/94	150	1.2	ND	ND	ND
MW8	7/05/94	730	17	ND	1.6	ND
MW8	10/06/94	140**	ND	ND	ND	ND
MW8	1/02/95	440	18	0.72	2.0	1.8
MW8	4/03/95	960	11	ND	ND	ND
MW8	7/14/95	280	4.2	2.6	1.1	3.3
MW8	10/10/95	110	1.3	0.62	0.67	ND

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

** Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be gasoline.

ND = Non-detectable.

-- Indicates analysis was not performed.

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

Note: Laboratory analyses data prior to January 3, 1994, were provided by Kaprealian Engineering, Inc.

TABLE 3

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Diesel	Chloroform	Tetrachloro-ethene	Trichloro-ethene	MTBE
6/05/91	MW1	ND	7.8	2.9	1.3	--
9/30/91	MW1	ND	--	--	--	--
12/30/91	MW1	ND	6.4	2.1	0.9	--
4/02/92	MW1	94	7.1	2.6	1.4	--
6/30/92	MW1	120	9.5	2.2	1.3	--
9/15/92	MW1	ND	12	2.2	1.3	--
12/21/92	MW1	ND	12	1.4	0.83	--
4/28/93	MW1♦	470▲▲	12	0.89	0.85	--
7/23/93	MW1	ND	16	1.3	0.91	--
10/05/93	MW1	57▲	13	1.3	0.66	--
1/03/94	MW1*	ND	18	1.4	0.93	--
4/02/94	MW1	ND	15	1.1	0.68	--
10/10/95	MW1	--	--	--	--	29
10/10/95	MW2	--	--	--	--	200
10/10/95	MW3	--	--	--	--	190,000
1/03/94	MW4	--	9.0	1.0	ND	240
10/10/95	MW4	--	--	--	--	120
10/10/95	MW5	--	--	--	--	1,100
10/10/95	MW6	--	--	--	--	75,000
10/10/95	MW7	--	--	--	--	13,000
1/03/94	MW8♦	--	1.5	1.2	ND	51
10/10/95	MW8	--	--	--	--	170

TABLE 3 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

* A fuel fingerprint analysis was conducted on this sample. Sequoia Analytical Laboratory reported that total extractable petroleum hydrocarbons in this sample were not detected in high enough concentrations to compare with known standards and approximate their make-up.

♦ 1,2-dichloroethane was detected in MW8 at a concentration of 4.0 µg/L on 1/03/94, and 1.1 µg/L in MW1 on 4/28/93.

▲ Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.

▲▲ Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.

ND = Non-detectable.

-- Indicates analysis was not performed.

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

Note: - All EPA method 8010 constituents were non-detectable, except as indicated above.

- Laboratory analyses data prior to January 3, 1994, were provided by Kaprealian Engineering, Inc.

TABLE 4

SUMMARY OF LABORATORY ANALYSES
WATER

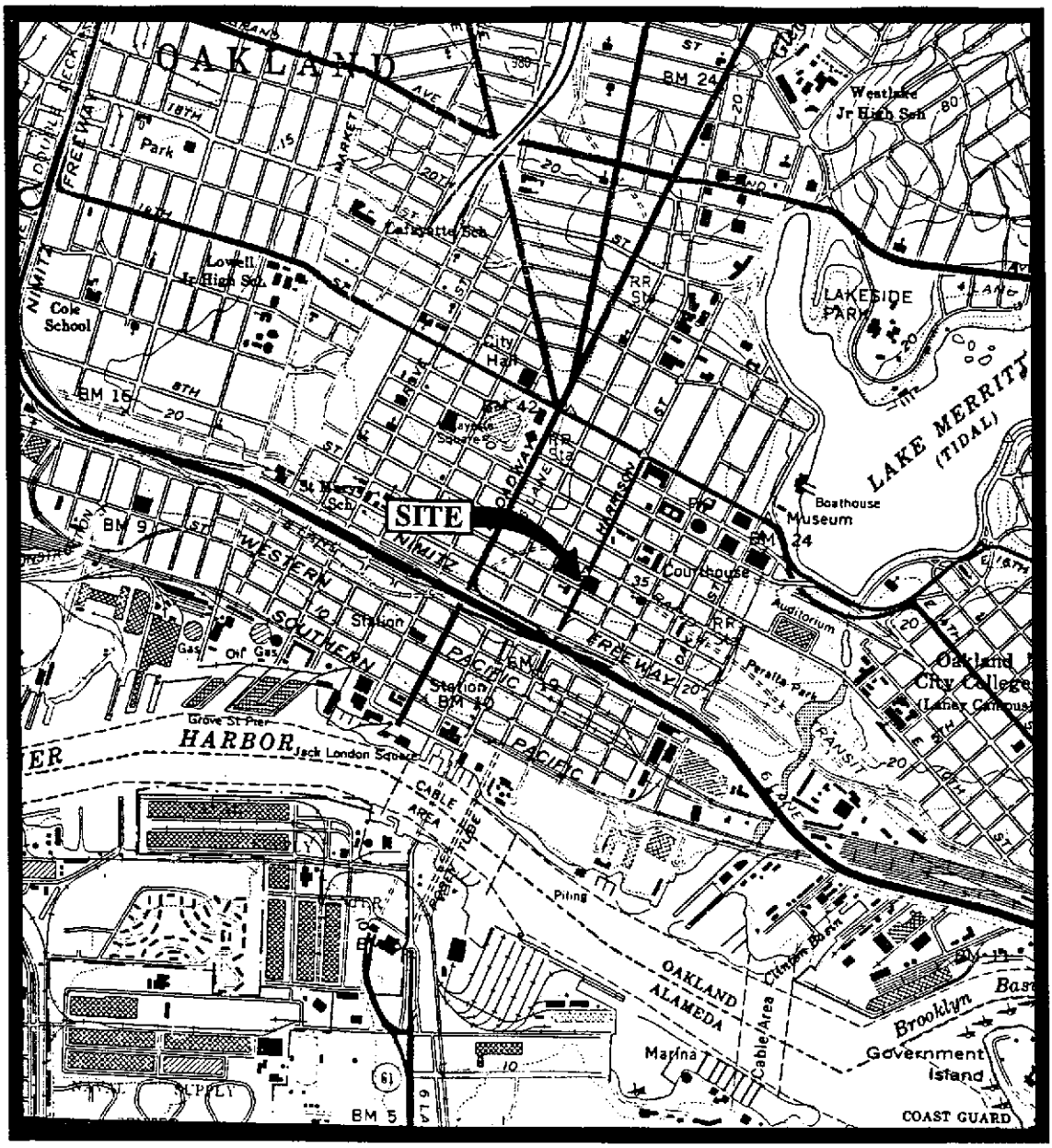
Date	Well #	TOG	Cadmium	Chromium	Lead	Nickel	Zinc
6/30/92	MW1	ND	ND	0.079	0.0090	0.10	0.087
4/02/92	MW1	ND	ND	0.015	0.016	ND	0.020
12/30/91	MW1	ND	ND	0.0078	0.0057	ND	0.046
9/30/91	MW1	ND	ND	0.019	ND	ND	0.11
6/05/91	MW1	ND	ND	0.0083	0.011	0.063	0.023

TOG = Total Oil & Grease.

ND = Non-detectable.

Results are in milligrams per liter (mg/L), unless otherwise indicated.

Note: Laboratory analyses data were provided by Kaprealian Engineering, Inc.

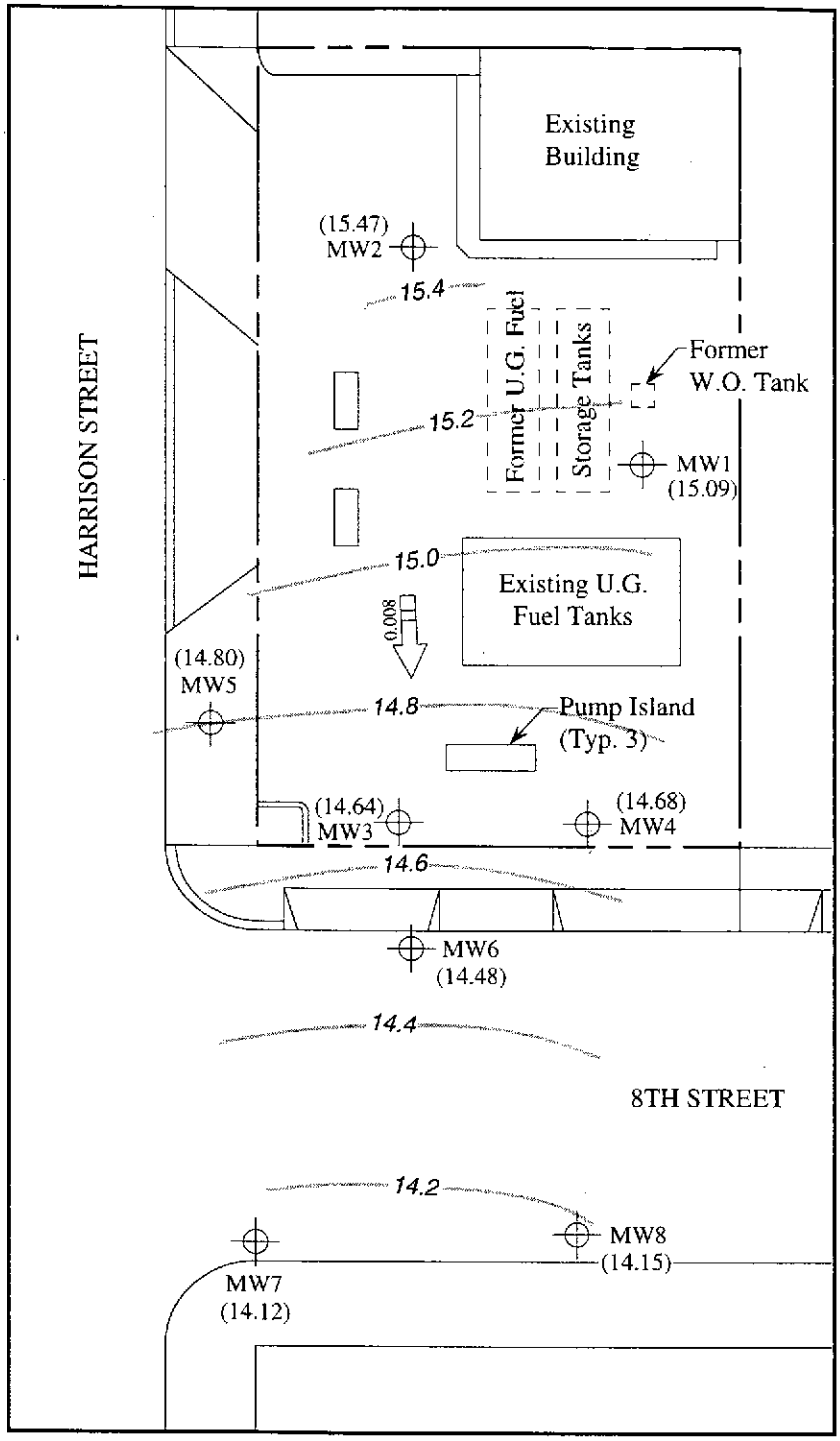


Base modified from 7.5 minute U.S.G.S. Oakland West Quadrangle
(photorevised 1980)

0 2000 4000

Approx. scale feet

mpds SERVICES, INCORPORATED	**UNOCAL SERVICE STATION #0752** **800 HARRISON STREET** **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

0 30 60

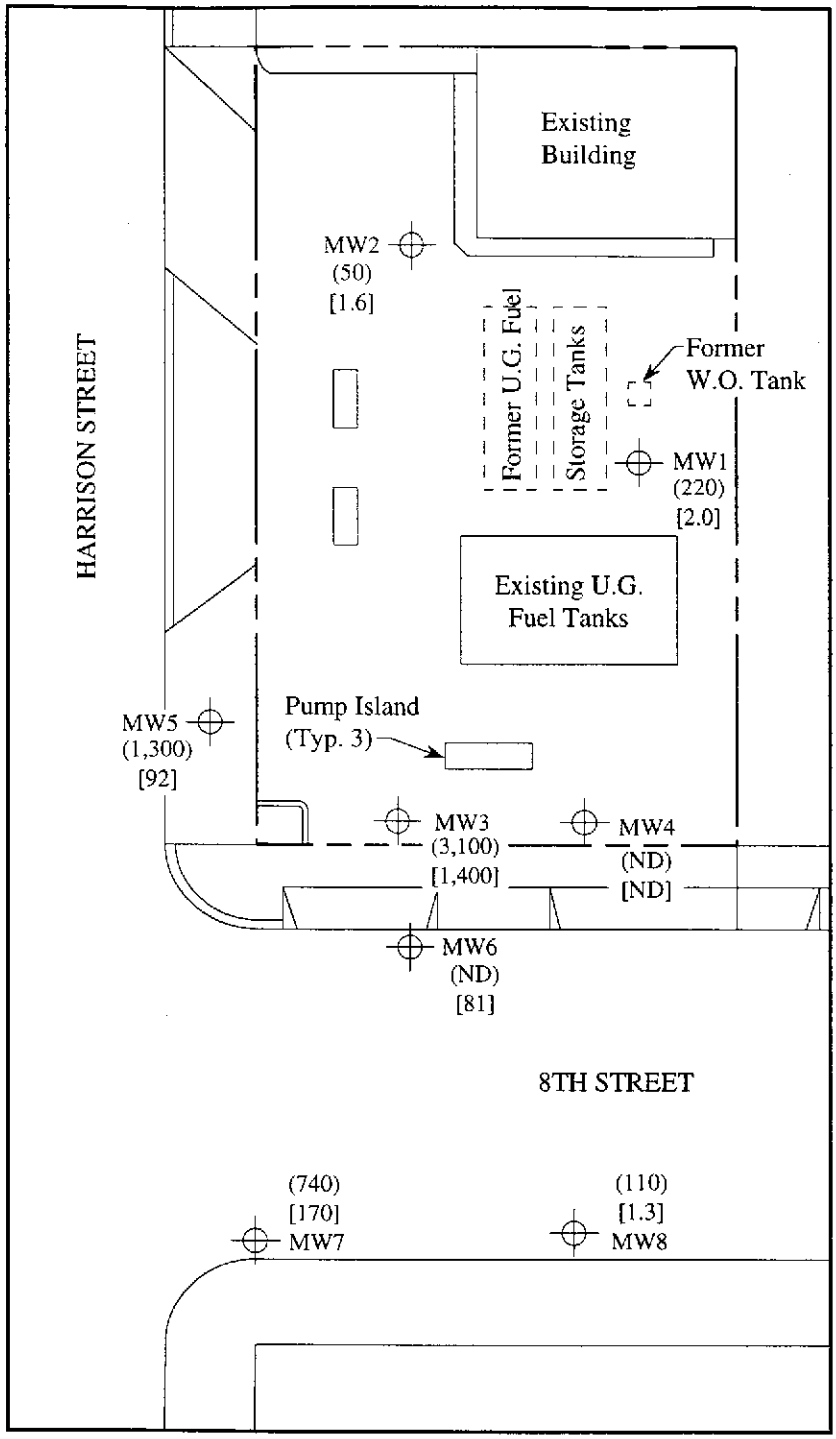
Approx. scale feet

POTENTIOMETRIC SURFACE MAP FOR THE OCTOBER 10, 1995 MONITORING EVENT

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION #0752
800 HARRISON STREET
OAKLAND, CALIFORNIA

FIGURE
1



LEGEND

- ⊕ Monitoring well
- ( ) Concentration of TPH as gasoline in µg/L
- [ ] Concentration of benzene in µg/L
- ND Non-detectable

0 30 60

Approx. scale feet

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON OCTOBER 10, 1995

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION #0752
800 HARRISON STREET
OAKLAND, CALIFORNIA

FIGURE
2

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Unocal #0752, 800 Harrison St., Oakland	Sampled: Oct 10, 1995
2401 Stanwell Dr., Ste. 300	Matrix Descript:	Water	Received: Oct 10, 1995
Concord, CA 94520	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: Oct 31, 1995
Attention: Sarkis Karkarian	First Sample #:	510-0984	

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	MTBE µg/L
510-0984	MW 1	220	2.0	ND	25	5.6	29
510-0985	MW 2	50	1.6	ND	ND	ND	200
510-0986	MW 3	3,100	1,400	36	50	53	190,000
510-0987	MW 4	ND	ND	ND	ND	ND	120
510-0988	MW 5	1,300	92	14	15	39	1,100
510-0989	MW 6	ND	81	ND	ND	ND	75,000
510-0990	MW 7	740	170	ND	ND	ND	13,000
510-0991	MW 8	110	1.3	0.62	0.67	ND	170
510-0992	ES 1	ND	ND	ND	ND	ND	--
510-0993	ES 2	ND	ND	0.62	ND	ND	--
510-0994	ES 3	ND	ND	0.65	ND	ND	--
Detection Limits:		**50**	**0.50**	**0.50**	**0.50**	**0.50**	**0.60**

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

5100984.MPD <1>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Unocal #0752, 800 Harrison St., Oakland	Sampled:	Oct 10, 1995
2401 Stanwell Dr., Ste. 300	Matrix Descript:	Water	Received:	Oct 10, 1995
Concord, CA 94520	Analysis Method:	EPA 5030/8015 Mod./8020	Reported:	Oct 31, 1995
Attention: Sarkis Karkarian	First Sample #:	510-0984		

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
510-0984	MW 1	Gasoline	1.0	10/24/95	HP-2	118
510-0985	MW 2	Gasoline	1.0	10/24/95	HP-2	100
510-0986	MW 3	Gasoline	1.0	10/24/95	HP-5	77
510-0987	MW 4	--	1.0	10/24/95	HP-4	89
510-0988	MW 5	Gasoline	1.0	10/24/95	HP-5	83
510-0989	MW 6	--	1.0	10/24/95	HP-5	81
510-0990	MW 7	Gasoline	1.0	10/24/95	HP-4	98
510-0991	MW 8	Gasoline	1.0	10/24/95	HP-4	102
510-0992	ES 1	--	1.0	10/24/95	HP-5	84
510-0993	ES 2	--	1.0	10/24/95	HP-5	84
510-0994	ES 3	--	1.0	10/30/95	HP-5	90

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Sarkis Karkarian

Client Project ID: Unocal #0752, 800 Harrison St., Oakland
Matrix: Liquid
QC Sample Group: 5100984-994
Reported: Oct 31, 1995

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Creusere	M. Creusere	M. Creusere	M. Creusere
MS/MSD Batch#:	5101562	5101562	5101562	5101562
Date Prepared:	10/24/95	10/24/95	10/24/95	10/24/95
Date Analyzed:	10/24/95	10/24/95	10/24/95	10/24/95
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:	115	110	120	113
Matrix Spike Duplicate % Recovery:	120	115	120	118
Relative % Difference:	4.3	4.4	0.0	4.3
LCS Batch#:	1LCS102495	1LCS102495	1LCS102495	1LCS102495
Date Prepared:	10/24/95	10/24/95	10/24/95	10/24/95
Date Analyzed:	10/24/95	10/24/95	10/24/95	10/24/95
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	113	109	113	112
% 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

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Sarkis Karkarian

Client Project ID: Unocal #0752, 800 Harrison St., Oakland
Matrix: Liquid
QC Sample Group: 5100984-994

Reported: Oct 31, 1995

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Creusere	M. Creusere	M. Creusere	M. Creusere
MS/MSD Batch#:	5101490	5101490	5101490	5101490
Date Prepared:	10/24/95	10/24/95	10/24/95	10/24/95
Date Analyzed:	10/24/95	10/24/95	10/24/95	10/24/95
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:	100	100	100	100
Matrix Spike Duplicate % Recovery:	105	105	105	103
Relative % Difference:	4.9	4.9	4.9	3.3
LCS Batch#:	2LCS102495	2LCS102495	2LCS102495	2LCS102495
Date Prepared:	10/24/95	10/24/95	10/24/95	10/24/95
Date Analyzed:	10/24/95	10/24/95	10/24/95	10/24/95
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	103	104	104	104
% 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

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Sarkis Karkarian

Client Project ID: Unocal #0752, 800 Harrison St., Oakland
Matrix: Liquid
QC Sample Group: 5100984-994
Reported: Oct 31, 1995

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Creusere	M. Creusere	M. Creusere	M. Creusere
MS/MSD Batch#:	5100992	5100992	5100992	5100992
Date Prepared:	10/24/95	10/24/95	10/24/95	10/24/95
Date Analyzed:	10/24/95	10/24/95	10/24/95	10/24/95
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:	95	90	90	92
Matrix Spike Duplicate % Recovery:	95	90	90	92
Relative % Difference:	0.0	0.0	0.0	0.0
LCS Batch#:	3LCS102495	3LCS102495	3LCS102495	3LCS102495
Date Prepared:	10/24/95	10/24/95	10/24/95	10/24/95
Date Analyzed:	10/24/95	10/24/95	10/24/95	10/24/95
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	85	92	98	99
% 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.

mpds SERVICES, INCORPORATED
2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel: (510) 602-5100, Fax: (510) 689-1918

CHAIN OF CUSTODY

9510206

SAMPLER: RAY MARANGOSIAN
WITNESSING AGENCY:

UNOCAL S/S # 0752 CITY: OAKLAND
ADDRESS: 800 Harrison St

TURN AROUND TIME: REGULAR

SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-GAS BTEX	TPH-DIESEL	TOG	8010	MTBE				REMARKS
MW1	10.10.95	10:40	X	X		2	Well	X		5100984		ABX				
MW2	"	14:30	X	X		7	"	X		5100985		X				
MW3	"	15:15	X	X		7	"	X		5100986		X				
MW4	"	10.30	X	X		7	"	X		5100987		X				
MW5	"	13.50	X	X		4	"	X		5100988		X				
MW6	"	11:10	X	X		4	"	X		5100989		X				
MW7	"	13:10	X	X		4	"	X		5100990		X				
MW8	"	12:35	X	X		7	"	X		5100991		X				

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
Ray Marangosian	10.10.95 16:30	Tony McAlahon	16:25 10/10/95
(SIGNATURE) C. Chen	10-11 1230	(SIGNATURE)	1230 10-11
(SIGNATURE)	10-11	(SIGNATURE) Charles Chen	10/11 1400
(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? 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

SIGNATURE: Charles Chen TITLE: Group Leader DATE: 10/10/95

Note: All water containers to be sampled for TPHG/BTEX, 8010 & 8240 are preserved with HCL. All water containers to be sampled for Lead or Metals are preserved with HNO3. All other containers are unpreserved.

MPDS SERVICES, INCORPORATED
2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel: (510) 602-5100, Fax: (510) 689-1918

CHAIN OF CUSTODY

9510206

SAMPLER	UNOCAL S/S #	CITY:	ANALYSES REQUESTED	TURN AROUND TIME:
RAY MARANGOSIAN	0752	OAKLAND		REGULAR
WITNESSING AGENCY	ADDRESS:	800 Harrison St.		REMARKS

SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-GAS BTEX	TPH-DIESEL	TOG	8010				
ES1	10.10.95		x	x		1		x		5100992					
ES2	"		x	x		1		x		5100993					
ES3	"		x	x		1		x		5100994					

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
Ray Marangosian	10.10.95 16:30	Tony Mancha	16:25 10/10/95
(SIGNATURE)	1230 10-11	(SIGNATURE)	1230 10-11
(SIGNATURE)	10-11	(SIGNATURE)	10/11 1400
(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? 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

SIGNATURE: TITLE: Group Leader DATE: 10/10/95

Note: All water containers to be sampled for TPHG/BTEX, 8010 & 8240 are preserved with HCL. All water containers to be sampled for Lead or Metals are preserved with HNO3. All other containers are unpreserved.