

MONITORING
PURGING
DISPOSING
SAMPLING

MPDS

SERVICES, INCORPORATED

5510 1747
KT

November 7, 1997

DK

~~Mr. Scott Seery~~
Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, California 94502

RE: Unocal Service Station #5430
1935 Washington Avenue
San Leandro, California 94577

Dear Mr. Seery:

Per the request of the Tosco Marketing Company Project Manager, Ms. Tina R. Berry, enclosed please find our data report (MPDS-UN5430-14) dated September 30, 1997, 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) 277-2321.

Sincerely,

MPDS Services, Inc.



Jarrel F. Crider

/jfc

Enclosure

cc: Ms. Tina R. Berry



PACIFIC ENVIRONMENTAL GROUP, INC.

ENVIRONMENTAL PROTECTION
97 OCT 27 PM 4: 22

October 20, 1997
Project 311-038.1A

Mr. John Jang
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

#1747
KT

Re: Unocal Station 5430
Quarterly Summary Report
Third Quarter 1997

Dear Mr. Jang:

As directed by Ms. Tina Berry of Tosco Marketing Company, Pacific Environmental Group, Inc. is forwarding the quarterly summary report for the following location:

Service Station

Location

5430

1935 Washington Avenue, San Leandro

If you have questions or comments, please do not hesitate to contact our office at (408) 441-7500.

Sincerely,

Pacific Environmental Group, Inc.

Joseph Muzzio
Project Geologist

Enclosure

cc: Ms. Tina Berry, Tosco Marketing Company
Mr. Kevin Tinsley, Alameda County Environmental Health Care Services

Quarterly Summary Report Third Quarter 1997

Unocal Service Station 5430
1935 Washington Avenue at Castro Street
San Leandro, California

County STID #: 1747
County: Alameda

BACKGROUND

Unocal files suggest that a product line leak occurred in June 1976, and that one of the original underground gasoline storage tanks failed a precision test in October 1981. In December 1981, the two original steel gasoline storage tanks were replaced with two fiberglass gasoline storage tanks. Groundwater monitoring wells U-1 through U-3 and Borings U-A through U-E were installed in August 1993. Perimeter wells U-4 through U-7 were installed in June 1995 for further delineation of hydrocarbon impacted groundwater. Monthly groundwater monitoring and quarterly sampling of the wells was initiated in December 1993.

Alameda County Health Services (ACHS) submitted a request for delineation of hydrocarbon impacted groundwater in the southern portion of the site. Unocal submitted a workplan in January 1996. Unocal investigated former usage of the site located south of their site. The review found that the adjacent site was formerly a service station which included four USTs. Unocal proceeded with access agreement negotiations to install borings on properties south and west of the facility.

RECENT QUARTER ACTIVITIES

Quarterly groundwater monitoring and sampling were performed in September. PACIFIC completed an investigation to delineate the lateral extent of hydrocarbon impacted groundwater in July 1997. A report documenting the results was submitted in September. Based on the investigation results groundwater impact beneath the Unocal facility has been delineated.

NEXT QUARTER ACTIVITIES

Fourth quarter 1997 groundwater monitoring and sampling will be performed.

CHARACTERIZATION/REMEDIAL STATUS

Soil contamination delineated? None encountered.
Dissolved groundwater delineated? Yes.
Free product delineated? Not applicable.
Amount of groundwater contaminant recovered this quarter? None

Soil remediation in progress? Not applicable.
Anticipated start date? Not applicable.
Anticipated completion date? Not applicable.
Dissolved/free product remediation in progress? No.
Anticipated start? Unknown.
Anticipated completion? Unknown.

CONSULTANT: Pacific Environmental Group, Inc.

MPDS-UN5430-14
September 30, 1997

Tosco Marketing Company
Environmental Compliance Department
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

Attention: Ms. Tina R. Berry

RE: Semi-Annual Data Report
Unocal Service Station #5430
1935 Washington Avenue
San Leandro, California

Dear Ms. Berry:

This data report presents the results of the most recent 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 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 semi-annual period is shown on the attached Figure 1.

Ground water samples were collected on September 4, 1997. Prior to sampling, the wells were each purged of 4.5 gallons of water. During purging operations, the field parameters pH, temperature, and electrical conductivity were recorded on the purging/sampling data sheets which are attached to this report. Once the field parameters were observed to stabilize, and where possible, a minimum of approximately three 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. MPDS Services, Inc. transported the purged ground water to the Tosco 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 and 3. The concentrations of Total Petroleum Hydrocarbons (TPH) as gasoline and benzene detected in the ground water samples collected this semi-annual period 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 Mr. Scott Seery of the Alameda County Environmental Health Care Services, and Mr. Michael Bakaldin of the San Leandro Fire Department.

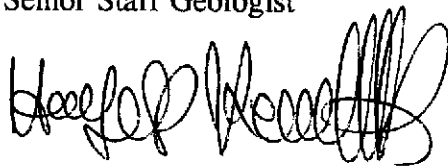
If you have any questions regarding this report, please do not hesitate to call Mr. Nubar Srabian at (510) 602-5120.

Sincerely,

MPDS Services, Inc.



Haig (Gary) Tejirian
Senior Staff Geologist



Hagop Kevork, P.E.
Senior Staff Engineer



License No. C55734
Exp. Date December 31, 2000

Attachments: Tables 1, 2 & 3
 Location Map
 Figures 1 & 2
 Laboratory Analyses
 Chain of Custody documentation
 Purging/Sampling Data Sheets

cc: Mr. Joe Muzzio, Pacific Environmental Group, Inc.

Table 1
 Summary of Monitoring Data

Well #	Ground Water Elevation (feet)	Depth to Water (feet)*	Total Well Depth (feet)*	Product Thickness (feet)	Seen	Water Purged (gallons)
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(Monitored and Sampled on September 4, 1997)

U-1	24.53	31.56	39.65	0	No	4.5
U-2	24.70	30.59	39.30	0	No	4.5
U-3	24.79	30.44	38.55	0	No	4.5
U-4	24.68	30.71	39.00	0	No	4.5
U-5	24.72	29.46	38.45	0	No	4.5
U-6	24.61	30.75	40.05	0	No	4.5
U-7	24.89	30.16	37.80	0	No	4.5

(Monitored and Sampled on March 8, 1997)

U-1	30.06	26.03	39.63	0	No	5
U-2	30.65	24.64	39.30	0	No	7.5
U-3	30.58	24.65	38.55	0	No	7
U-4	30.60	24.79	39.08	0	No	7.5
U-5	30.69	23.49	38.59	0	No	7.5
U-6	30.11	25.25	40.02	0	No	7.5
U-7	30.72	24.33	37.78	0	No	7

(Monitored and Sampled on September 6, 1996)

U-1	25.84	30.25	39.62	0	No	4.5
U-2	26.11	29.18	39.28	0	No	7
U-3	26.17	29.06	38.54	0	No	6.5
U-4	26.07	29.32	39.08	0	No	7
U-5	26.12	28.06	38.56	0	No	7.5
U-6	25.95	29.41	40.02	0	No	7.5
U-7	26.30	28.75	37.77	0	No	6.5

(Monitored and Sampled on June 4, 1996)

U-1	28.66	27.43	39.62	0	No	8.5
U-2	29.26	26.03	39.35	0	No	9.5
U-3	29.23	26.00	38.54	0	No	9.5
U-4	29.20	26.19	39.08	0	No	9
U-5	29.27	24.91	38.58	0	No	9.5
U-6	28.84	26.52	40.03	0	No	9.5
U-7	29.38	25.67	37.75	0	No	8.5

Table 1
Summary of Monitoring Data

Well #	Well Casing Elevation (feet)*
U-1	56.09
U-2	55.29
U-3	55.23
U-4	55.39
U-5	54.18
U-6	55.36
U-7	55.05

- ◆ The depth to water level and total well depth measurements were taken from the top of the well casings.
- * The elevation of the top of the well casings were surveyed March 1995, based on benchmark provided by City of San Leandro, City Engineers Office, Datum 1929, USGS adjusted.

Table 2
 Summary of Laboratory Analyses
 Water

Well #	Date	TPH as Diesel	TPH as Gasoline	Benzene	Tolbene	Ethyl-Benzene	Xylenes	MTBE
U-1	8/13/93†	50*	310	0.84	ND	2.6	1.0	--
	12/16/93†	130**	ND	ND	ND	ND	ND	--
	3/25/94†	57**	58	0.63	0.79	ND	0.65	--
	6/19/94†	61**	51	ND	1.4	ND	2.7	--
	9/15/94†	83**	ND	0.50	0.85	ND	0.77	--
	12/6/94†	ND	ND	ND	ND	ND	ND	--
	3/14/95	71**	380	20	ND	ND	10	--
	6/20/95	170**	500	50	ND	ND	4.4	--
	9/18/95	72	57	1.2	0.75	0.57	2.2	§
	12/14/95	ND	ND	0.72	1.4	1.2	3.6	--
	3/6/96	ND	96	4.5	ND	ND	3.7	ND
	6/4/96	170**	410	48	ND	3.4	7.9	ND
	9/6/96	ND	ND	ND	ND	ND	ND	ND
	3/8/97	--	ND	ND	ND	ND	ND	ND
	9/4/97	--	ND	ND	ND	ND	ND	ND
	U-2	8/13/93	--	1,400	ND	ND	ND	ND
12/16/93		--	330	1.7	ND	11	8.5	--
3/25/94		--	130	0.70	0.78	0.65	0.64	--
6/19/94		--	180♦	ND	ND	ND	0.86	--
9/15/94		--	1,000♦♦	44	ND	ND	ND	--
12/6/94		--	250	19	ND	ND	ND	--
3/14/95		--	89	ND	ND	ND	1.2	--
6/20/95		--	ND	ND	0.58	ND	1.7	--
9/18/95		--	ND	ND	ND	ND	0.85	§
12/14/95		--	ND	ND	0.89	ND	2.0	§§
3/6/96		--	ND	ND	ND	ND	ND	80
6/4/96		--	ND	ND	ND	ND	ND	110
9/6/96		--	ND	ND	ND	ND	ND	ND
3/8/97		--	ND	ND	ND	ND	ND	42
9/4/97	--	ND	ND	ND	ND	ND	46	
U-3	8/13/93	--	23,000	1,000	ND	1,700	1,600	--
	12/16/93	--	15,000	570	ND	940	670	--
	3/25/94	--	18,000	560	40	1,000	770	--
	6/19/94	--	17,000	580	ND	1,300	90	--
	9/15/94	--	12,000	370	ND	970	610	--
	12/6/94	--	17,000	390	ND	990	560	--
	3/14/95	--	13,000	860	120	1,300	1,700	--
	6/20/95	--	9,800	590	ND	800	1,000	--
	9/18/95	--	9,800	600	ND	1,000	760	§
	12/14/95	--	10,000	520	ND	920	630	§§
	3/6/96	--	19,000	1,400	ND	1,800	3,000	73

Table 2
 Summary of Laboratory Analyses
 Water

Well #	Date	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
U-3 (Cont.)	6/4/96	--	8,800	510	ND	600	830	ND
	9/6/96	--	15,000	360	20	540	450	ND
	3/8/97	--	3,500	310	ND	230	630	ND
	9/4/97	--	700	27	ND	48	34	ND
U-4	3/14/95	--	490	3.2	2.1	0.79	1.2	--
	6/20/95	--	ND	ND	ND	ND	1.5	--
	9/18/95	--	ND	ND	ND	ND	ND	§
	12/14/95	--	ND	ND	0.59	ND	0.79	§§
	3/6/96	--	ND	ND	ND	ND	0.62	50
	6/4/96	--	ND	ND	ND	ND	ND	290
	9/6/96	--	ND	ND	ND	ND	ND	ND
	3/8/97	--	ND	ND	ND	ND	ND	ND
	9/4/97	--	ND	ND	ND	ND	ND	18
U-5	3/14/95	--	ND	ND	ND	ND	1.2	--
	6/20/95	--	ND	ND	ND	ND	1.6	--
	9/18/95	--	ND	ND	ND	ND	0.66	--
	12/14/95	--	ND	ND	ND	ND	ND	--
	3/6/96	--	ND	ND	ND	ND	ND	ND
	6/4/96	--	ND	ND	ND	ND	ND	ND
	9/6/96	--	ND	ND	ND	ND	ND	ND
	3/8/97	--	ND	ND	ND	ND	ND	ND
	9/4/97	--	ND	ND	ND	ND	ND	ND
U-6	3/14/95	--	14,000	170	36	790	1,500	--
	6/20/95	--	8,500	170	11	950	1,300	--
	9/18/95	--	9,500	260	ND	1,400	1,800	§
	12/14/95	--	15,000	240	ND	1,400	1,700	§§
	3/6/96	--	2,400	54	ND	170	250	ND
	6/4/96	--	4,600	83	ND	400	520	46
	9/6/96	--	12,000	180	6.4	690	600	95
	3/8/97	--	2,000	180	ND	96	290	ND
	9/4/97	--	680	17	ND	52	39	ND
U-7	3/14/95	--	ND	ND	ND	ND	ND	--
	6/20/95	--	ND	ND	ND	ND	ND	--
	9/18/95	--	ND	ND	ND	ND	ND	--
	12/14/95	--	ND	ND	ND	ND	0.88	--
	3/6/96	--	ND	ND	ND	ND	ND	ND
	6/4/96	--	ND	ND	ND	ND	ND	ND
	9/6/96	--	ND	ND	ND	ND	ND	ND
	3/8/97	--	ND	ND	ND	ND	ND	ND
	9/4/97	--	ND	ND	ND	ND	ND	ND

Table 2
Summary of Laboratory Analyses
Water

-
- § Sequoia Analytical Laboratory has potentially identified the presence of MTBE at reportable levels in the ground water sample collected from this well.
 - §§ Sequoia Analytical Laboratory has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 µg/L in the sample collected from this well.
 - † Total Oil and Grease was non-detectable.
 - ◆ 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.
 - * Not a typical diesel pattern; lower boiling hydrocarbons in the boiling range of stoddard calculated as diesel.
 - ** Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.

MTBE = Methyl tert butyl ether.

ND = Non-detectable.

-- Indicates analysis was not performed.

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

Note: The detection limit for results reported as ND by Sequoia Analytical Laboratory is equal to the stated detection limit times the dilution factor indicated on the laboratory analytical sheets.

Prior to August 1, 1995, the total purgeable petroleum hydrocarbon (TPH as gasoline) quantification range used by Sequoia Analytical Laboratory was C4 - C12. Since August 1, 1995, the quantification range used by Sequoia Analytical Laboratory is C6 - C12.

Laboratory analyses data prior to December 16, 1993, were provided by Pacific Environmental Group, Inc.

Table 3
 Summary of Laboratory Analyses
 Water

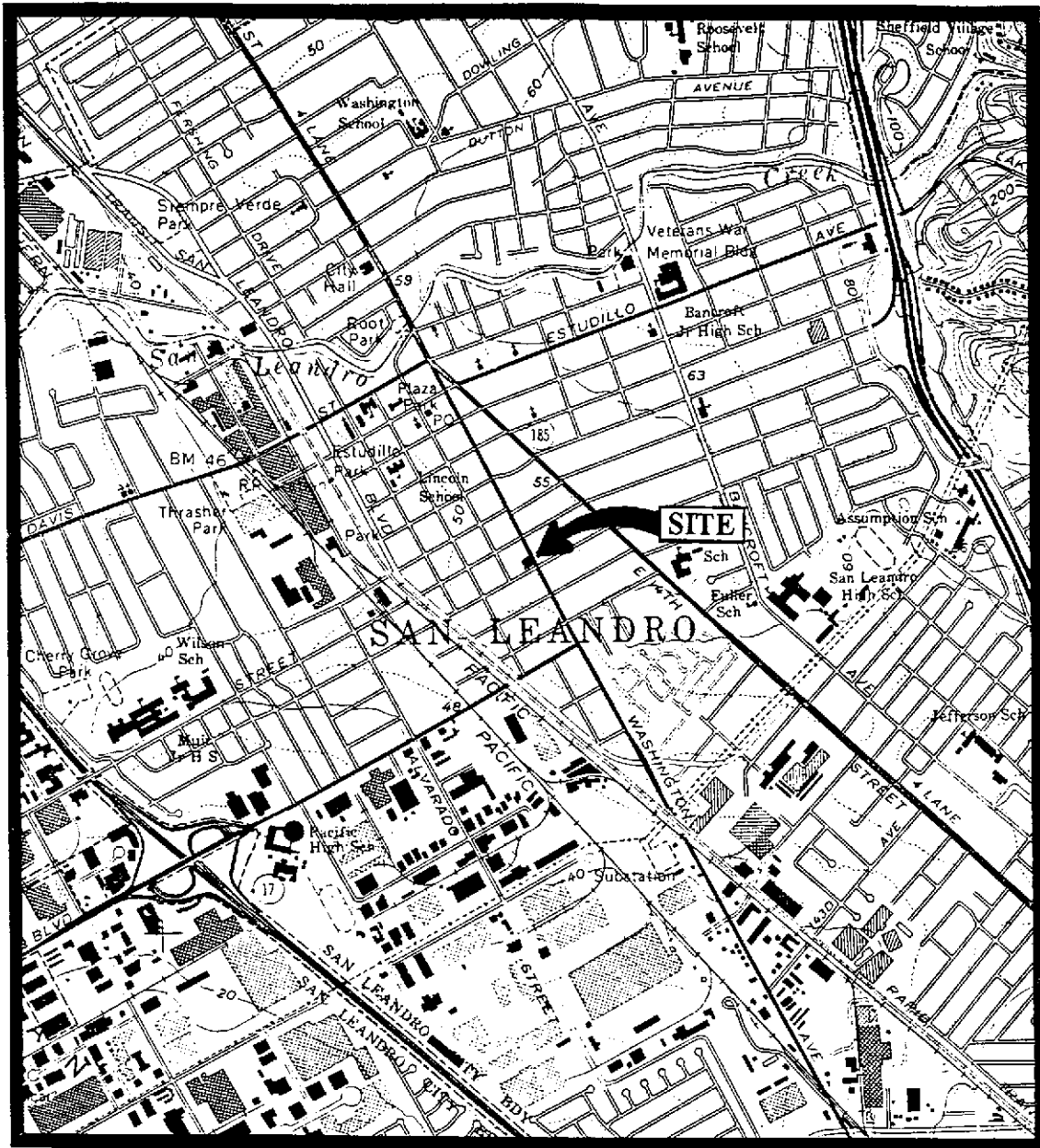
Well #	Date	1,2-Dichlorobenzene	1,2-Dichloroethane
U-1	6/19/94	ND	7.4
	9/15/94	ND	9.5
	12/6/94	ND	5.8
	12/14/95	ND	3.8
	3/8/97	ND	43
	9/4/97	ND	4.5
U-2	3/25/94	ND	11
	3/25/94	ND	ND
	6/19/94	ND	0.54
	9/15/94	ND	0.66
	12/6/94	ND	ND
	12/14/95	ND	ND
U-3	3/25/94	ND	480
	6/19/94	ND	410
	9/15/94	ND	420
	12/6/94	ND	430
	12/14/95	ND	240
	3/8/97	ND	100
	9/4/97	ND	160
U-4	3/14/95	ND	ND
	12/14/95	ND	ND
U-5	3/14/95	ND	ND
	12/14/95	ND	ND
U-6	3/14/95	ND	210
	12/14/95	ND	370
U-7	3/14/95	ND	ND
	12/14/95	ND	ND
	3/8/97	ND	ND
	9/4/97*	ND	ND

* On September 4, 1997, carbon tetrachloride was detected in well U-7 at a concentration of 1.3 µg/L.

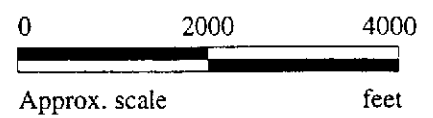
ND = Non-detectable.


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

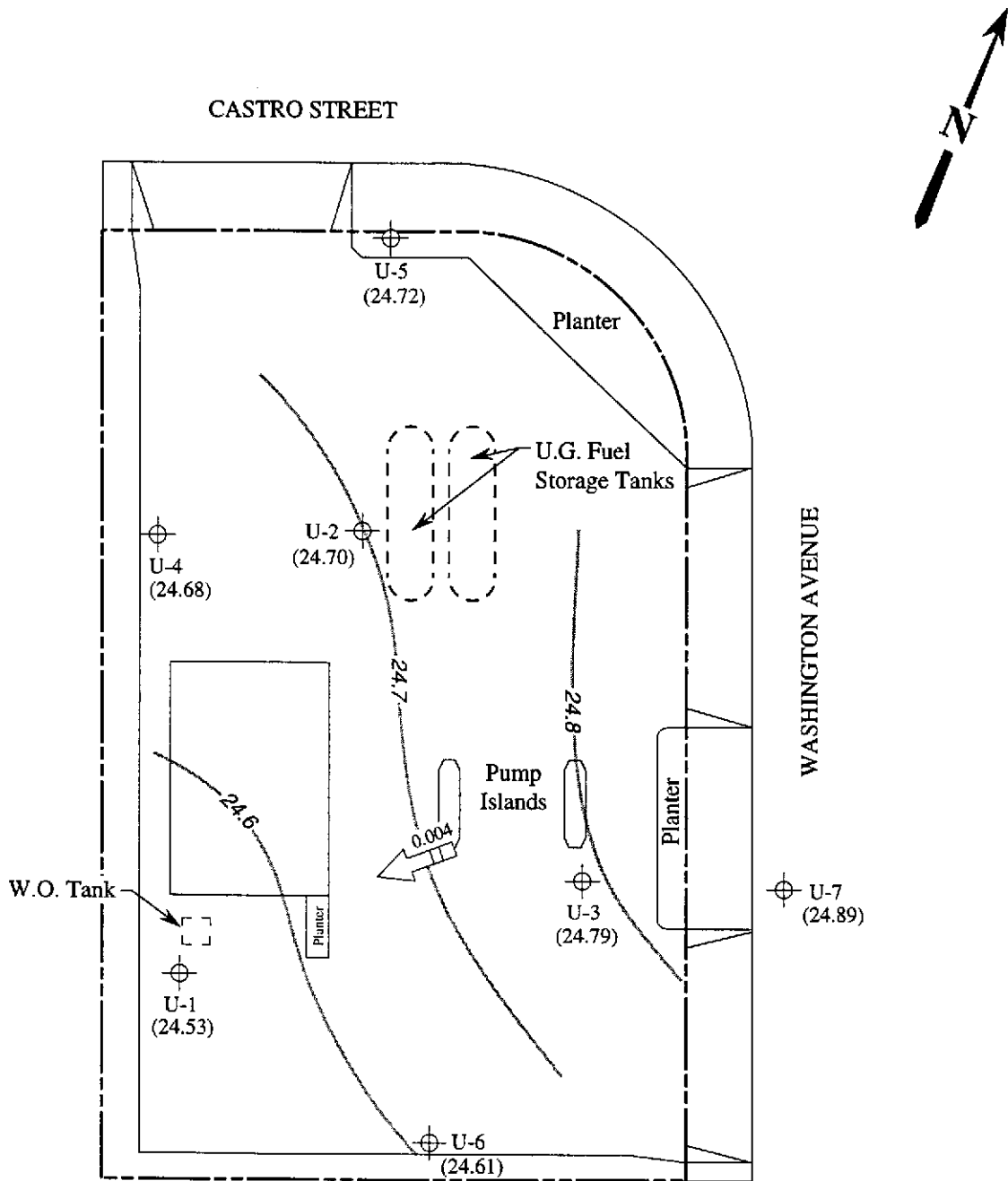
Note: All EPA method 8010 constituents were non-detectable, except as indicated above.



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

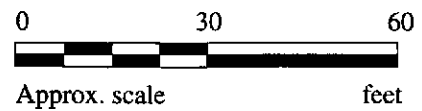


	<p>UNOCAL SERVICE STATION #5430 1935 WASHINGTON AVENUE SAN LEANDRO, CALIFORNIA</p>	<p>LOCATION MAP</p>
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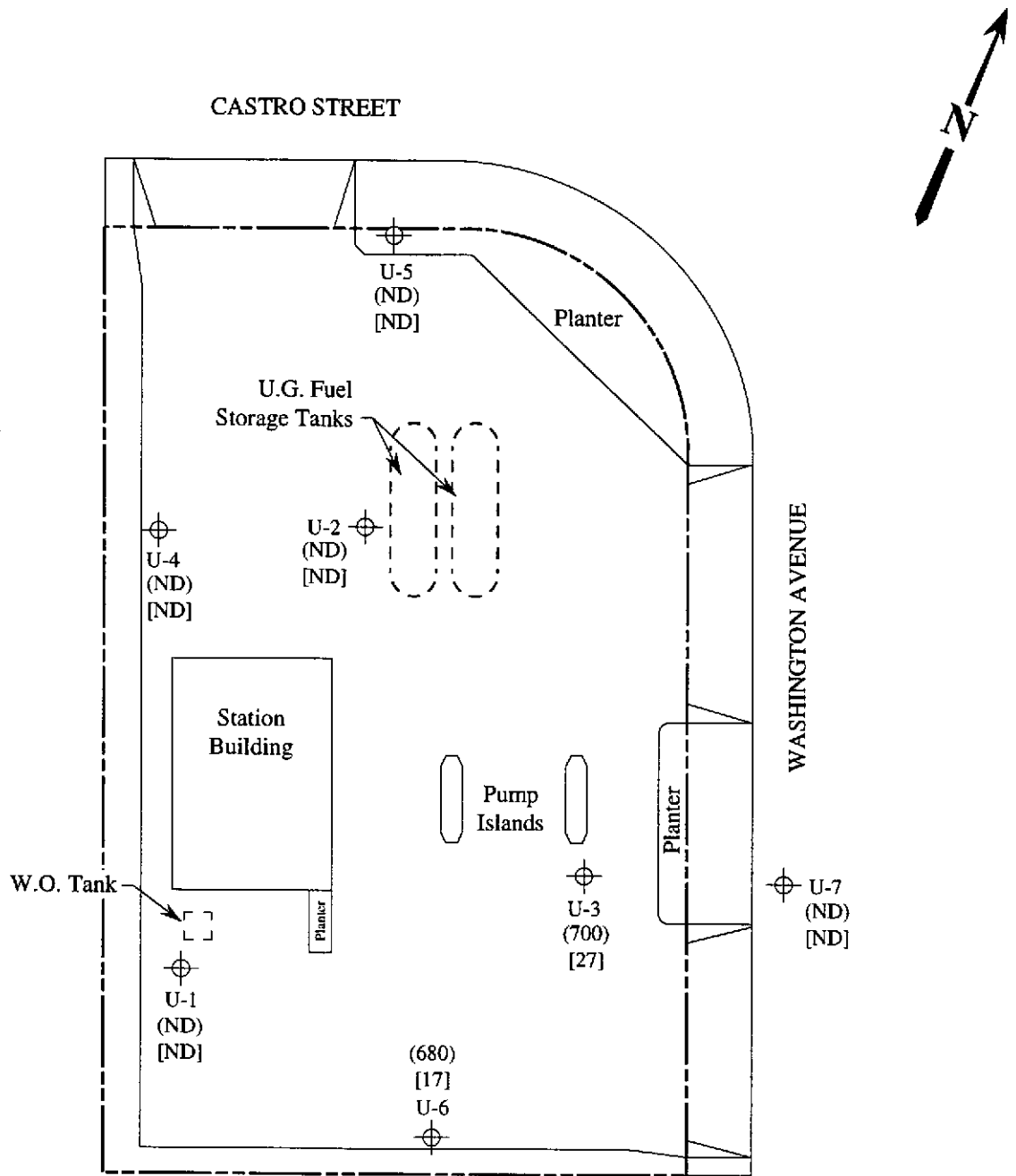


LEGEND

- ⊕ 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

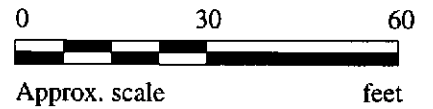


POTENTIOMETRIC SURFACE MAP FOR THE SEPTEMBER 4, 1997 MONITORING EVENT



LEGEND

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



PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON SEPTEMBER 4, 1997



MPDS Services 2401 Stanwell Dr., Ste. 300 Concord, CA 94520 Attention: Jarrel Crider	Client Project ID: Tosco #5430, 1935 Washington Ave. Matrix Descript: Water Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 709-0298	San Leandro Received: Sep 4, 1997 Reported: Sep 22, 1997
---	--	--

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
709-0298	U-1	ND	ND	ND	ND	ND
709-0299	U-2	ND	ND	ND	ND	ND
709-0300	U-3	700	27	ND	48	34
709-0301	U-4	ND	ND	ND	ND	ND
709-0302	U-5	ND	ND	ND	ND	ND
709-0303	U-6	680	17	ND	52	39
709-0304	U-7	ND	ND	ND	ND	ND

Detection Limits:	50	0.50	0.50	0.50	0.50
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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





MPDS Services 2401 Stanwell Dr., Ste. 300 Concord, CA 94520 Attention: Jarrel Crider	Client Project ID: Tosco #5430, 1935 Washington Ave. Matrix Descript: Water Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 709-0298	San Leandro Received: Sep 4, 1997 Reported: Sep 22, 1997
---	--	--

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
709-0298	U-1	--	1.0	9/17/97	HP-4	104
709-0299	U-2	--	1.0	9/17/97	HP-4	105
709-0300	U-3	Gasoline	1.0	9/17/97	HP-4	73
709-0301	U-4	--	1.0	9/17/97	HP-4	104
709-0302	U-5	--	1.0	9/17/97	HP-4	103
709-0303	U-6	Gasoline	1.0	9/17/97	HP-4	80
709-0304	U-7	--	1.0	9/17/97	HP-4	102

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Tosco #5430, 1935 Washington Ave.
Sample Descript: Water San Leandro
Analysis for: MTBE (Modified EPA 8020)
First Sample #: 709-0298

Sampled: Sep 4, 1997
Received: Sep 4, 1997
Analyzed: Sep 17, 1997
Reported: Sep 22, 1997

LABORATORY ANALYSIS FOR: MTBE (Modified EPA 8020)

Sample Number	Sample Description	Detection Limit µg/L	Sample Result µg/L
709-0298	U-1	5.0	N.D.
709-0299	U-2	5.0	46
709-0300	U-3	5.0	N.D.
709-0301	U-4	5.0	18
709-0302	U-5	5.0	N.D.
709-0303	U-6	5.0	N.D.
709-0304	U-7	5.0	N.D.

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

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Tosco #5430, 1935 Washington Ave.
Sample Descript: Water, U-1 San Leandro
Analysis Method: EPA 5030/8010
Lab Number: 709-0298

Sampled: Sep 4, 1997
Received: Sep 4, 1997
Analyzed: Sep 15, 1997
Reported: Sep 22, 1997

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	4.5
1,1-Dichloroethene.....	0.50	N.D.
cis-1,2-Dichloroethene.....	0.50	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	N.D.
Trichloroethene.....	0.50	N.D.
Trichlorofluoromethane.....	0.50	N.D.
Vinyl chloride.....	1.0	N.D.
Surrogates	Control Limit %	% Recovery
Dibromodifluoromethane.....	50	109
4-Bromofluorobenzene.....	50	95

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

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services	Client Project ID: Tosco #5430, 1935 Washington Ave.	Sampled: Sep 4, 1997
2401 Stanwell Dr., Ste. 300	Sample Descript: Water, U-3 San Leandro	Received: Sep 4, 1997
Concord, CA 94520	Analysis Method: EPA 5030/8010	Analyzed: Sep 15, 1997
Attention: Jarrel Crider	Lab Number: 709-0300	Reported: Sep 22, 1997

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
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	N.D.
Chloromethane.....	10	N.D.
Dibromochloromethane.....	5.0	N.D.
1,3-Dichlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	5.0	N.D.
1,2-Dichlorobenzene.....	5.0	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	160
1,1-Dichloroethene.....	5.0	N.D.
cis-1,2-Dichloroethene.....	5.0	N.D.
trans-1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	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	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.
Surrogates		
	Control Limit %	% Recovery
Dibromodifluoromethane.....	50	150..... 131
4-Bromofluorobenzene.....	50	150..... 97

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Tosco #5430, 1935 Washington Ave.
Sample Descript: Water, U-7 San Leandro
Analysis Method: EPA 5030/8010
Lab Number: 709-0304

Sampled: Sep 4, 1997
Received: Sep 4, 1997
Analyzed: Sep 15, 1997
Reported: Sep 22, 1997

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	1.3
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	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	N.D.
Trichloroethene.....	0.50	N.D.
Trichlorofluoromethane.....	0.50	N.D.
Vinyl chloride.....	1.0	N.D.
Surrogates	Control Limit %	% Recovery
Dibromodifluoromethane.....	50	150
4-Bromofluorobenzene.....	50	150

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

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Tosco #5430, 1935 Washington Ave., San Leandro
Matrix: Liquid

QC Sample Group: 7090298-304

Reported: Sep 22, 1997

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloro-ethene	Trichloro-ethene	Chloro-benzene
Method:	EPA 8010	EPA 8010	EPA 8010
Analyst:	K.N.	K.N.	K.N.

MS/MSD			
Batch#:	7090091	7090091	7090091
Date Prepared:	9/15/97	9/15/97	9/15/97
Date Analyzed:	9/15/97	9/15/97	9/15/97
Instrument I.D.#:	HP-7	HP-7	HP-7
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L
Matrix Spike % Recovery:	110	110	98
Matrix Spike Duplicate % Recovery:	98	100	92
Relative % Difference:	12	10	6.3

LCS Batch#:	7LCS091597	7LCS091597	7LCS091597
Date Prepared:	9/15/97	9/15/97	9/15/97
Date Analyzed:	9/15/97	9/15/97	9/15/97
Instrument I.D.#:	HP-7	HP-7	HP-7
LCS % Recovery:	110	100	96

% Recovery Control Limits:	65-135	70-130	70-130
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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

Signature on File
Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Tosco #5430, 1935 Washington Ave., San Leandro
Matrix: Liquid

QC Sample Group: 7090298-304

Reported: Sep 22, 1997

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloro-ethene	Trichloro-ethene	Chloro-benzene
Method:	EPA 8010	EPA 8010	EPA 8010
Analyst:	K.N.	K.N.	K.N.

MS/MSD			
Batch#:	7090091	7090091	7090091
Date Prepared:	9/15/97	9/15/97	9/15/97
Date Analyzed:	9/15/97	9/15/97	9/15/97
Instrument I.D.#:	HP-7	HP-7	HP-7
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L
Matrix Spike % Recovery:	110	110	98
Matrix Spike Duplicate % Recovery:	98	100	92
Relative % Difference:	12	10	6.3

LCS Batch#:	7LCS091697	7LCS091697	7LCS091697
Date Prepared:	9/16/97	9/16/97	9/16/97
Date Analyzed:	9/16/97	9/16/97	9/16/97
Instrument I.D.#:	HP-7	HP-7	HP-7
LCS % Recovery:	100	96	81

% Recovery Control Limits:	65-135	70-130	70-130
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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

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Tosco #5430, 1935 Washington Ave., San Leandro
Matrix: Liquid

QC Sample Group: 7090298-304

Reported: Sep 25, 1997

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb

MS/MSD	Benzene	Toluene	Ethyl Benzene	Xylenes
Batch#:	7090298	7090298	7090298	7090298
Date Prepared:	9/17/97	9/17/97	9/17/97	9/17/97
Date Analyzed:	9/17/97	9/17/97	9/17/97	9/17/97
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:	105	100	95	102
Matrix Spike Duplicate % Recovery:	100	100	100	100
Relative % Difference:	4.9	0.0	5.1	1.7

LCS Batch#:	4LCS091797	4LCS091797	4LCS091797	4LCS091797
Date Prepared:	9/17/97	9/17/97	9/17/97	9/17/97
Date Analyzed:	9/17/97	9/17/97	9/17/97	9/17/97
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	95	95	95	98

% Recovery Control Limits:	Benzene	Toluene	Ethyl Benzene	Xylenes
	70-130	70-130	70-130	70-130

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

Signature on File

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

92-01073

CHAIN OF CUSTODY

SAMPLER		UNOCAL TOSTCO S/S # <u>5430</u> CITY: <u>San Leandro</u>						ANALYSES REQUESTED								TURN AROUND TIME:	
WITNESSING AGENCY <u>John Giddings</u>		ADDRESS: <u>1935 Washington St</u>						TPH-6	BTKE	MTBG	SOB						Regular
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION										
01	9-4-97		/			4 UOA's		/	/	/	/				7090293	7090298	
02	"		/			2 UOA's		/	/	/					7090294	7090299	MTBE
03	"		/			4 UOA's		/	/	/	/				7090295	7090300	5 pgs
04	"		/			2 UOA's		/	/	/					7090296	7090301	
05	"		/			"		/	/	/					7090297	7090302	
06	"		/			"		/	/	/					7090298	7090303	
07	"		/			4 UOA's		/	/	/	/				7090299	7090304	
RELINQUISHED BY:			DATE/TIME			RECEIVED BY:			THE FOLLOWING <u>MUST BE</u> COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:								
(SIGNATURE) <u>John Giddings</u>			9-4 15:25			(SIGNATURE) <u>Pharma</u> 9/4/97 15:25			1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <u>Y</u>								
(SIGNATURE)						(SIGNATURE)			2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <u>Y</u>								
(SIGNATURE)						(SIGNATURE)			3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? <u>N</u>								
(SIGNATURE)						(SIGNATURE)			4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? <u>Y</u>								
(SIGNATURE)						(SIGNATURE)			SIGNATURE: <u>Pharma</u>			TITLE: <u>Analyst</u>			DATE: <u>9/4/97</u>		

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: Tesco # 5430 / San Leandro DATE & TIME SAMPLED: 9-4 10:22 A.M.
P.M.

FIELD TECHNICIAN: John Giddings

PURGE METHOD: Pump DATE(S) PURGED: 9-4-97

WELL NUMBER: U7

WATER LEVEL-INITIAL: 30.16 SAMPLING METHOD: Boiler

WATER LEVEL-FINAL: 31.00 CONTAINERS: 4 vials

WELL DEPTH: 37.80 PRESERVATIVES: HA

WELL CASING VOLUME: 1.30 gal. CASING DIAMETER: 2

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY ($\mu\text{mhos/cm} \times 100$) or $\mu\text{S/cm}$	pH
10:15	1 1/2	69.7	9.92	6.41
10:17	3	68.7	9.81	6.50
10:19	4 1/2	69.0	9.65	6.45

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:

Temperature = ± 1 °F
 Conductivity = $\pm 10\%$ of total
 pH = ± 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: Tasco # 8430 / San Leandro DATE & TIME SAMPLED: 9-4-97 10:45 A.M.
P.M.

FIELD TECHNICIAN: John Giddings

PURGE METHOD: Pump DATE(S) PURGED: 9-4-97

WELL NUMBER: 01

WATER LEVEL-INITIAL: 31.56 SAMPLING METHOD: Roller

WATER LEVEL-FINAL: 33.10 CONTAINERS: 4

WELL DEPTH: 39.65 PRESERVATIVES: Hcl

WELL CASING VOLUME: 1.38 gal. † CASING DIAMETER: 2

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
10:35	1 1/2	66.7	7.86	6.58
10:37	3	67.1	8.01	6.70
10:39	4 1/2	66.7	7.79	6.71

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:
 Temperature = ± 1 °F
 Conductivity = ± 10% of total
 pH = ± 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: Tosco # 5430 / San Leandro DATE & TIME SAMPLED: 9-4-97 11:03 A.M.
 FIELD TECHNICIAN: John Giddings
 PURGE METHOD: Pump DATE(S) PURGED: 9-4-97
 WELL NUMBER: 07
 WATER LEVEL-INITIAL: 30.59 SAMPLING METHOD: Boyle
 WATER LEVEL-FINAL: 31.51 CONTAINERS: 2
 WELL DEPTH: 39.30 PRESERVATIVES: Hcl
 WELL CASING VOLUME: 1.48 gal † CASING DIAMETER: 7

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
10:55	1 1/2	66.0	4.81	7.81
10:57	3	65.9	4.86	7.59
10:59	4 1/2	66.5	5.00	7.65

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:

Temperature = ± 1 °F
 Conductivity = ± 10% of total
 pH = ± 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: Tozo #5430/San Leandro DATE & TIME SAMPLED: 9-4-97 12:35 (P.M.) A.M.

FIELD TECHNICIAN: John Siddons

PURGE METHOD: Pump DATE(S) PURGED: 9-4-97

WELL NUMBER: 03

WATER LEVEL-INITIAL: 30.44 SAMPLING METHOD: Barler

WATER LEVEL-FINAL: 31.00 CONTAINERS: 4

WELL DEPTH: 38.55 PRESERVATIVES: Hal

WELL CASING VOLUME: 1.38 †CASING DIAMETER: 2"

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
17:00	1 1/2	66.7	9.02	7.12
17:22	3	66.8	9.10	7.15
17:24	4 1/2	62.0	9.15	7.07

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:

Temperature = ± 1 °F
 Conductivity = ± 10% of total
 pH = ± 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: Tocco # 5430 / San Leandro DATE & TIME SAMPLED: 9-4-97 11:20 A.M.
P.M.

FIELD TECHNICIAN: John Gibbons

PURGE METHOD: Pump DATE(S) PURGED: 9-4-97

WELL NUMBER: 04

WATER LEVEL-INITIAL: 30.71 SAMPLING METHOD: Boiler

WATER LEVEL-FINAL: 31.55 CONTAINERS: 2

WELL DEPTH: 39.00 PRESERVATIVES: Hcl

WELL CASING VOLUME: 1.47 gal CASING DIAMETER: 2

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
11:10	1 1/2	66.9	9.98	6.35
11:12	3	67.0	9.87	6.45
11:14	4 1/2	67.1	9.80	6.40

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:
 Temperature = ± 1 °F
 Conductivity = ± 10% of total
 pH = ± 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: Toxco #5430/San Leandro DATE & TIME SAMPLED: 9-4-97 11:40 A.M.
P.M.

PURGE METHOD: Pump FIELD TECHNICIAN: John Giddings

WELL NUMBER: US DATE(S) PURGED: 9-4-97

WATER LEVEL-INITIAL: 29.46 SAMPLING METHOD: Boiler

WATER LEVEL-FINAL: 30.56 CONTAINERS: 7

WELL DEPTH: 38.45 PRESERVATIVES: Hal

WELL CASING VOLUME: 1.53 gal † CASING DIAMETER: 7

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
11:30	1 1/2	68.1	5.55	7.42
11:32	3	68.5	5.60	7.44
11:34	4 1/2	69.0	5.40	7.50

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:

Temperature = ± 1 °F
Conductivity = ± 10% of total
pH = ± 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: TESCO # 5430 / San Leandro DATE & TIME SAMPLED: 9-4-97 12:00 A.M.
 FIELD TECHNICIAN: John Golding
 PURGE METHOD: Pump DATE(S) PURGED: 9-4-97
 WELL NUMBER: 06
 WATER LEVEL-INITIAL: 30.75 SAMPLING METHOD: Bailer
 WATER LEVEL-FINAL: 37.00 CONTAINERS: 2
 WELL DEPTH: 40.05 PRESERVATIVES: Hel
 WELL CASING VOLUME: 1.58 gal † CASING DIAMETER: 7"

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
11:55	7	67.0	8.85	6.40
11:57	4	67.5	8.90	6.35
11:59	6	67.0	8.75	6.42

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:

Temperature = ± 1 °F
 Conductivity = ± 10% of total
 pH = ± 0.2