STID 3607

GETTLER-RYAN INC.

ENVIRONMENTAL PROTECTION
98 MAR 10 PM 3:15

TRANSMITTAL

TO: Ms. Susan Hugo
Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, California 94502

DATE: March 6, 1998
G-R #: 180064

FROM: Deanna L. Harding
Project Manager
Gettler-Ryan Inc.
6747 Sierra Court, Suite J
Dublin, California 94568

RE: Tosco (Unocal) SS #3538
411 West MacArthur Blvd.
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	February 20, 1998	Groundwater Monitoring and Sampling Report First Quarter 1998-Event of January 14, 1998

COMMENTS:

At the request of Tosco Marketing Company, we are providing you a copy of the above referenced report. The site is monitored and sampled on a semi-annual basis in January and July. If you have questions please contact the Tosco Project Manager, Ms. Tina R. Berry at (510) 277-2321.

Enclosure

cc: Mr. Dave Vossler, Gettler-Ryan Inc., Novato, CA 94945

agency/3538trb.qmt

TOSCO

Tosco Marketing Company
2000 Crow Canyon Place, Ste. 400
San Ramon, California 94583
Telephone: 510-277-2305
Facsimile: 510-277-2361

Environmental Compliance
Department

To All Concerned:

The Environmental Compliance Group (San Ramon, CA Office) of Tosco Marketing Company (TMC) would like to provide information concerning the shifting of environmental projects from Kaprealian Engineering, Incorporated and MPDS Services, Incorporated of Concord, CA.

- Projects (monitoring and sampling) and assets formerly with MPDS Services, Inc. have been purchased by Gettler-Ryan, Inc. (GRI) of Dublin, CA. GRI will continue to provide the same services to the Tosco Marketing Company . This transaction was effective January 1, 1998.
- Environmental projects formerly with Kaprealian Engineering, Inc. (KEI) have been transferred to GRI, effective January 1, 1998.
- It is TMC's understanding that the original environmental consulting portion of Gettler-Ryan, the subsidiary known as GeoStrategies, has been dissolved (effective January 1, 1998) and all work will be completed through Gettler-Ryan, Inc.
- Gettler-Ryan, Inc. has been a consultant for TMC in the past and we do not anticipate problems with continuity of the environmental projects.

Should there be questions, please feel free to call:

David Camille 510-277-2335
Tina Berry 510-277-2321
Ed Ralston 510-277-2335
Dave De Witt 510-277-2384

GETTLER-RYAN INC.

February 20, 1998
G-R Job #180064

Ms. Tina R. Berry
Tosco Marketing Company
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

RE: First Quarter 1998 Groundwater Monitoring & Sampling Report
Tosco (Unocal) Service Station #3538
411 West MacArthur Boulevard
Oakland, California

Dear Ms. Berry:

This report documents the semi-annual groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On January 14, 1998, field personnel monitored six wells (MW1 through MW6) and sampled two wells (MW2 and MW3) at the above referenced site.

Static groundwater levels were measured and all wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not present in the wells. Static water level data and groundwater elevations are summarized in Table 1. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by G-R Standard Operating Procedure - Groundwater Sampling (attached). The field data sheets are also attached. The samples were analyzed by Sequoia Analytical. Analytical results are summarized in Tables 1 and 2, and a Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

Sincerely,

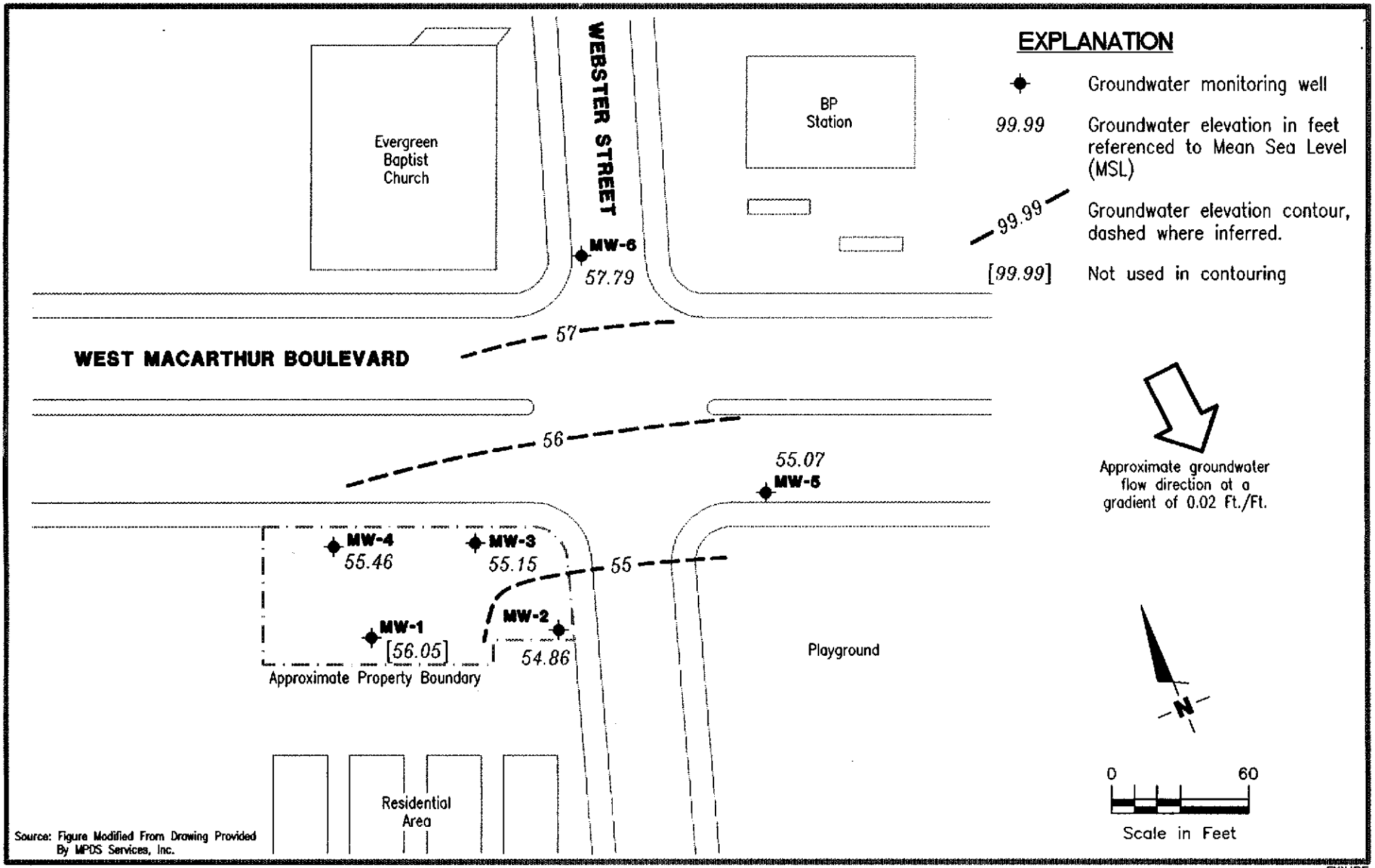
Deanna L. Harding
Project Manager

Stephen J. Carter
Senior Geologist, R.G. No. 5577

REGISTERED GEOLOGIST
STEPHEN J. CARTER
No. 5577
STATE OF CALIFORNIA

Figure 1: Potentiometric Map
Figure 2: Concentration Map
Table 1: Groundwater Monitoring Data and Analytical Results
Table 2: Groundwater Analytical Results
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

3538.qml

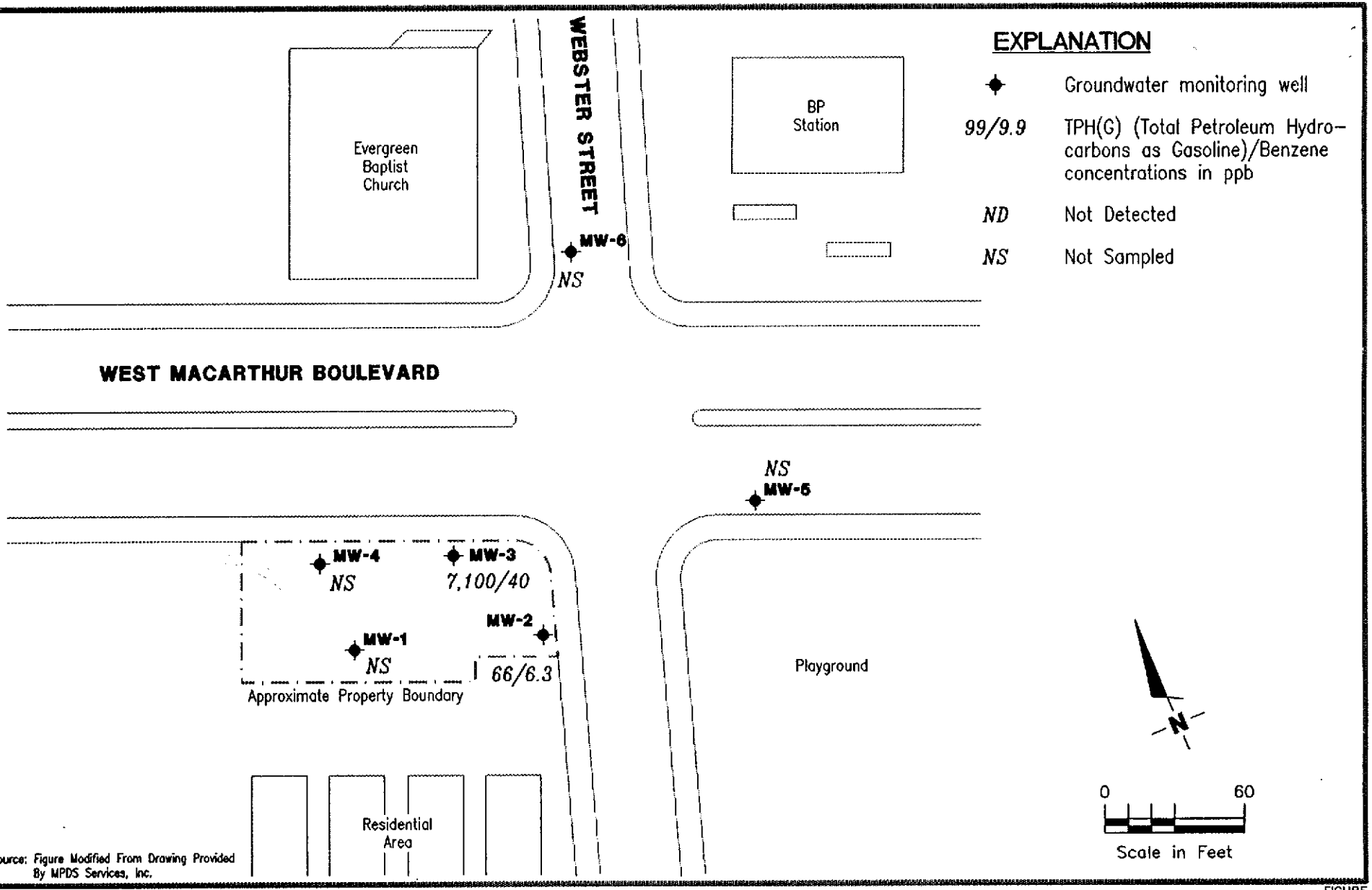


Gettler - Ryan Inc.
6747 Sierra Ct., Suite J
Dublin, CA 94568
(510) 551-7555

POTENTIOMETRIC MAP
Tosco (Unocal) Service Station No. 3538
411 West MacArthur Boulevard
Oakland, California

FIGURE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
180064		January 14, 1998	



Gettler - Ryan Inc.
6747 Sierra Ct., Suite J (510) 551-7555
Dublin, CA 94568

CONCENTRATION MAP
Tosco (Unocal) Service Station No. 3538
411 West MacArthur Boulevard
Oakland, California

FIGURE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
180064		January 14, 1998	

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3538
411 West MacArthur Boulevard
Oakland, California

Well ID/ TOC*	Date Sampled	DTW (ft.)	GWE (msl)	TPH(G)	B	T	E	X	MTBE
				<----------ppb---------->					
MW1	09/15/89			ND	ND	0.61	ND	ND	--
	01/23/90			ND	1.5	2.3	ND	4.3	--
	04/19/90			ND	ND	ND	ND	ND	--
	07/17/90			ND	ND	ND	ND	ND	--
	10/16/90			ND	ND	ND	ND	ND	--
	01/15/91			ND	ND	ND	ND	ND	--
	04/12/91			ND	ND	ND	ND	ND	--
	07/15/91			ND	ND	ND	ND	ND	--
	07/14/92			ND	ND	ND	ND	ND	--
	07/14/93			ND	2.2	2.1	1.1	6.2	--
	07/07/94			ND	ND	ND	ND	ND	--
	10/05/94			SAMPLED ANNUALLY		--	--	--	--
	07/19/95			ND	ND	ND	ND	ND	--
72.10	04/15/96	17.40	54.70	--	--	--	--	--	--
	07/11/96	18.03	54.07	ND	ND	ND	ND	ND	ND
	01/17/97	16.54	55.56	--	--	--	--	--	--
	07/21/97	18.16	53.94	ND	ND	ND	ND	ND	ND
	01/14/98	**16.05**	**56.05**	--	--	--	--	--	--
MW2	09/15/89			290	ND	12	ND	ND	--
	01/23/90			400	73	36	10	40	--
	04/19/90			3,900	550	5.1	91	390	--
	07/17/90			490	76	0.59	11	46	--
	10/16/90			1,400	430	2	48	240	--
	01/15/91			680	170	0.7	19	81	--
	04/12/91			2,200	160	4.3	23	62	--
	07/15/91			2,200	770	12	72	370	--
	10/15/91			140	44	0.56	1.5	12	--
	01/15/92			220	37	0.52	1.1	7	--
	04/14/92			150	6.2	ND	ND	1.4	--
	07/14/92			130	3.7	ND	ND	ND	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3538

411 West MacArthur Boulevard

Oakland, California

Well ID/ TOC*	Date Sampled	DTW (ft.)	GWE (msl)	TPH(G)	B	T	E	X	MTBE
				<--------		ppb			-------->
MW2	10/12/92			370	3.4	0.56	ND	11	--
(cont)	01/08/93			510[1]	ND	ND	ND	ND	--
	04/13/93			410[2]	42	7.7	6.4	28	200
	07/14/93			110[1]	6.5	ND	ND	1.1	250
	10/14/93			230[1]	5.3	ND	ND	2.1	--
	01/12/94			300	7.8	3.8	1.8	10	--
	04/09/94			120	10	0.88	1.1	4.9	--
	07/07/94			110[1]	4.4	ND	ND	ND	--
	10/05/94			720[1]	20	ND	ND	3.1	--
	01/09/95			ND	ND	ND	ND	ND	--
	04/17/95			93	5.6	0.62	1.7	5.5	--
	07/19/95			77	32	0.58	1.7	4.1	--
	10/26/95			54[2]	13	ND	ND	0.72	220
	1/16/96[3]			120	23	ND	ND	0.99	--
71.38	04/15/96	17.61	53.77	340	21	ND	2.2	3.7	45
	07/11/96	17.98	53.40	540	34	ND	4.3	12	150
	01/17/97	17.08	54.30	320	63	2.4	9.4	26	260
	07/21/97	18.06	53.32	160	13	ND	1.3	1.6	180
	01/14/98	**16.52**	**54.86**	**66**	**6.3**	**ND**	**ND**	**0.98**	**100**
MW3	09/15/89			32	ND	ND	ND	ND	--
	01/23/90			450	110	1.2	4.4	11	--
	04/19/90			3,100	600	27	54	220	--
	07/17/90			4,000	270	48	130	250	--
	10/16/90			740	210	1.4	2.5	82	--
	01/15/91			3,200	460	1.5	120	270	--
	04/12/91			880	170	1.1	34	110	--
	07/15/91			9,200	1,300	230	490	1,900	--
	10/15/91			3,100	390	34	150	390	--
	01/15/92			3,000	590	14	310	750	--
	04/14/92			14,000	660	48	560	2,000	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3538

411 West MacArthur Boulevard

Oakland, California

Well ID/ TOC*	Date Sampled	DTW (ft.)	GWE (msl)	TPH(G)	B	T	E	X	MTBE
				<----------	ppb	----------			---------->
MW3	07/14/92			21,000	890	200	1,200	4,300	--
(cont)	10/12/92			3,200	160	10	230	540	--
	01/08/93			1,100[2]	48	0.99	0.9	93	--
	04/13/93			12,000[2]	290	38	760	2,300	1,400
	07/14/93			6,300	190	ND	430	1,000	860
	10/14/93			2,500	52	ND	110	250	--
	01/12/94			3,800	78	ND	180	390	--
	04/09/94			1,800	22	ND	140	280	--
	07/07/94			110[1]	4.5	ND	ND	ND	--
	10/05/94			ND	ND	ND	ND	ND	--
	01/09/95			ND	0.68	ND	ND	ND	--
	04/17/95			3,700	80	10	270	510	--
	07/19/95			15,000	330	27	990	2,400	--
	10/26/95			14,000	420	180	750	1,600	4,800
	01/16/96[3]			920	38	ND	30	57	--
71.86	04/15/96	17.78	54.08	9,700	240	ND	570	860	3,200
	07/11/96	18.19	53.67	13,000	69	5.5	430	900	740
	01/17/97	17.23	54.63	4,400	25	ND	270	580	1,600
	07/21/97	18.29	53.57	9,000	36	ND	450	800	950
	01/14/98	**16.71**	**55.15**	**7,100**	**40**	**ND[4]**	**380**	**360**	**930**
MW4	09/15/89			ND	ND	ND	ND	ND	--
	01/23/90			ND	ND	0.4	ND	ND	--
	04/19/90			ND	ND	0.48	ND	ND	--
	07/17/90			ND	ND	ND	ND	ND	--
	10/16/90			ND	ND	ND	ND	ND	--
	01/15/91			ND	ND	ND	--	ND	--
	04/12/91			ND	ND	ND	ND	ND	--
	07/15/91			ND	ND	ND	ND	ND	--
	07/14/92			ND	1.3	2.5	ND	1.0	--
	07/14/93			ND	ND	ND	ND	ND	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3538

411 West MacArthur Boulevard

Oakland, California

Well ID/ TOC*	Date Sampled	DTW (ft.)	GWE (msl)	TPH(G)	B	T	E	X	MTBE
				<----------ppb---------->					
MW4	07/07/94			ND	ND	ND	ND	ND	--
(cont)	10/05/94			SAMPLED ANNUALLY		--	--	--	--
	07/19/95			ND	ND	ND	ND	ND	--
71.64	04/15/96	17.35	54.29	--	--	--	--	--	--
	07/11/96	17.81	53.83	ND	ND	ND	ND	ND	ND
	01/17/97	16.73	54.91	--	--	--	--	--	--
	07/21/97	17.91	53.73	ND	ND	ND	ND	ND	ND
	01/14/98	**16.18**	**55.46**	--	--	--	--	--	--
MW5	11/30/92			ND	ND	ND	ND	ND	--
	01/08/93			ND	ND	ND	ND	ND	--
	04/13/93			ND	ND	ND	ND	ND	--
	07/14/93			ND	ND	0.57	ND	ND	--
	10/14/93			ND	ND	ND	ND	ND	--
	01/12/94			ND	ND	0.84	ND	1.6	--
	07/07/94			ND	ND	ND	ND	ND	--
	10/05/94			SAMPLED ANNUALLY		--	--	--	--
	07/19/95			ND	ND	ND	ND	ND	--
71.23	04/15/96	17.22	54.01	--	--	--	--	--	--
	07/11/96	17.59	53.64	ND	ND	ND	ND	ND	ND
	01/17/97	16.75	54.48	--	--	--	--	--	--
	07/21/97	17.59	53.64	ND	ND	ND	ND	ND	ND
	01/14/98	**16.16**	**55.07**	--	--	--	--	--	--
MW6	11/30/92			ND	ND	ND	ND	ND	--
	01/08/93			ND	ND	ND	ND	ND	--
	04/13/93			ND	ND	ND	ND	ND	--
	07/14/93			ND	0.99	2.4	ND	1.9	--
	10/14/93			ND	ND	0.64	ND	ND	--
	01/12/94			ND	ND	1.2	ND	2.9	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3538
411 West MacArthur Boulevard
Oakland, California

Well ID/ TOC*	Date Sampled	DTW (ft.)	GWE (msl)	TPH(G)	B	T	E	X	MTBE
				<--------		ppb			-------->
MW6	07/07/94			ND	ND	ND	ND	ND	--
(cont)	10/05/94			SAMPLED ANNUALLY		--	--	--	--
	07/19/95			ND	ND	ND	ND	ND	--
71.44	04/15/96	14.00	57.44	--	--	--	--	--	--
	07/11/96	13.58	57.86	ND	ND	ND	ND	ND	ND
	01/17/97	15.42	56.02	--	--	--	--	--	--
	07/21/97	13.78	57.66	ND	ND	ND	ND	ND	ND
	01/14/98	**13.65**	**57.79**	--	--	--	--	--	--
Trip Blank									
TB-LB	**01/14/98**	--	--	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to January 14, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing elevation
DTW = Depth to Water
(ft.) = Feet
GWE = Groundwater Elevation
msl = Referenced relative to sea level

TPH(G) = Total Petroleum Hydrocarbons as Gasoline
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes

MTBE = Methyl tertiary butyl ether
ppb = Parts per billion
ND = Not detected
-- = Not Measured/Not Analyzed

* TOC elevations are relative to mean sea level, per the City of Oakland Benchmark #9NW10. (Elevation = 75.50 feet msl).

[1] Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.

[2] Laboratory report indicates the hydrocarbons detected appeared to be a gasoline and a non-gasoline mixture.

[3] Laboratory report indicates the presence of MTBE at a level above or equal to the taste and odor threshold of 40 ppb.

[4] Detection limit raised. Refer to analytical results.

Depth to water and groundwater elevation history will be updated in future reports.

Table 2

Groundwater Analytical Results

Tosco (Unocal) Service Station #3538
411 West MacArthur Boulevard
Oakland, California

Well ID	Date Sampled	TPH(D)	TOG	Tetrachloroethene[1]
		<——————ppb——————>		
MW1	09/15/89	ND	ND	2.7
	01/23/90	ND	1.5	2.1
	04/19/90	ND	ND	2.2
	07/17/90	ND	ND	1.7
	10/16/90	ND	ND	2.0
	01/15/91	ND	ND	2.1
	04/12/91	ND	ND	2.0
	07/15/91	ND	ND	1.8
	07/14/92	--	--	1.4
	07/14/93	--	--	0.95
	07/07/94	--	--	0.83
	07/19/95	--	--	0.52
	07/11/96[2]	--	--	0.73
	07/21/97[3]	--	--	0.70

EXPLANATIONS:

Groundwater analytical results prior to January 14, 1998, were compiled from reports prepared by MPDS Services, Inc.

TPH(D) = Total Petroleum Hydrocarbons as Diesel
TOG = Total Oil and Grease
ppb = Parts per billion
ND = Not detected
-- = Not Analyzed

1 All other EPA Method 8010 constituents were ND.
2 Chloroform was detected at a concentration of 0.96 ppb.
3 Chloroform was detected at a concentration of 1.0 ppb.

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using a MMC flexi-dip interface probe or equivalent. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, static water level measurements are collected with the interface probe and are also recorded in the field notes.

After water levels are collected and prior to sampling, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

As requested by Tosco Marketing Company, the purge water and decontamination water generated during sampling activities is transported to Tosco - San Francisco Area Refinery, located in Rodeo, California.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 3538 Job#: 180064

Address: 411 W. MacArthur Date: 1-14-98

City: Oakland Sampler: Joe

Well ID MW-2 Well Condition: O.K

Well Diameter ~~2~~ 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 27.48 ~~Meas~~ ft.

Depth to Water 16.52 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

10.96 X VF 0.17 = 1.86 X 3 (case volume) = Estimated Purge Volume: 6 (gal.)

Purge Equipment: (Disposable Bailer) ~~Bailer~~ Stack Suction Grundfos Other: ____

Sampling Equipment: (Disposable Bailer) Bailer Pressure Bailer Grab Sample Other: ____

Starting Time: 1:45 Weather Conditions: Rainy

Sampling Time: 2:15 P.M Water Color: clear Odor: None

Purging Flow Rate: 0.6 gpm. Sediment Description: None

Did well de-water? ____ If yes; Time: ____ Volume: ____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
1:55	0	7.95	3.88	65.5			
1:58	2	7.21	4.02	65.1			
2:02	4	7.14	3.90	65.9			
2:05	6	7.09	3.86	65.6			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-2	2VOA		HCL		TPHG, BTEX, MTBE

COMMENTS: ____

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 3538 - Oakland Job#: 180064

Address: 411 W. MacArthur Date: 1-14-98

City: Oakland Sampler: JDC

Well ID: MW-3 Well Condition: O.K.

Well Diameter: 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth: 25.10 ft.

Depth to Water: 16.71 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66	6" = 1.50	12" = 5.80

8.39 X VF 0.17 = 1.43 X 3 (case volume) = Estimated Purge Volume: 4.5 (gal.)

Purge Equipment: (Disposable Bailer) Bailer, Stack, Suction, Grundfos, Other: ____

Sampling Equipment: (Disposable Bailer) Bailer, Pressure Bailer, Grab Sample, Other: ____

Starting Time: 2:20 Weather Conditions: Rainy

Sampling Time: 2:40 p.m. Water Color: clear Odor: slight

Purging Flow Rate: 0.6 gpm. Sediment Description: None

Did well de-water? ____ If yes; Time: ____ Volume: ____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
2:22	0	6.95	1.96	65.8			
2:25	1.5	6.90	2.01	66.0			
2:28	3	6.88	2.11	65.9			
2:30	4.5	6.94	2.08	65.7			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3	2 VOA		HCL		TPHG, BTEX - MTBE

COMMENTS: ____

Chain-of-Custody-Record

TOSCO

Tosco Marketing Company
2000 Crow Canyon Pl., Ste. 400
San Ramon, California 94583

Facility Number UNOCAL SS # 3538
Facility Address 411 W. MacArthur Blvd. Oakland, CA
Consultant Project Number 180064
Consultant Name Gettler-Ryan Inc. (G-R Inc.)
Address 6747 Sierra Court, Suite J, Dublin, CA 94568
Project Contact (Name) Deanna L. Harding
(Phone) 510-551-7555 (Fax Number) 510-551-7888

Contact (Name) Ms. Tina Berry
(Phone) 510-277-2321
Laboratory Name Sequoia Analytical
Laboratory Release Number
Samples Collected by (Name) Joe Ajemian
Collection Date 1-14-98
Signature Joe Ajemian

Analyses To Be Performed 9801853

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	TPH Gas + BTEX w/MTBE (8016)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)					DO NOT BILL TB-LB ANALYSIS Remarks
TB-LB	1	1	W	G		HCl	Yes	✓												
MW-2	2	2 VOA	W	G	2:15 P.M	HCl	Yes	✓												
MW-3	3	2 VOA	"	"	2:40 P.M	"	"	✓												

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Joe Ajemian	G-R Inc.	1-14-98	D Harden	G-R	1/14/98
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
D Harden	G-R	1/15/98	Tina Tan	SEQ	1/14/98
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
Tina Tan	SEQ	1/15/98	Tina P.	1/15/98	1607

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

JA 15 4 07

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies
6747 Sierra Court Suite J
Dublin, CA 94568

Attention: Deanna Harding

Client Proj. ID: Unocal SS#3538, 180064
Sample Descript: TB-LB
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9801853-01

Sampled: 01/14/98
Received: 01/15/98
Analyzed: 01/26/98
Reported: 01/30/98

QC Batch Number: GC012698BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	73

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Proj. ID: Unocal SS#3538, 180064	Sampled: 01/14/98
6747 Sierra Court Suite J	Sample Descript: MW-3	Received: 01/15/98
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 01/26/98
Attention: Deanna Harding	Lab Number: 9801853-03	Reported: 01/30/98

QC Batch Number: GC012698BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**500**	**7100**
Methyl t-Butyl Ether	**25**	**930**
Benzene	**5.0**	**40**
Toluene	5.0	N.D.
Ethyl Benzene	**5.0**	**380**
Xylenes (Total)	**5.0**	**360**
Chromatogram Pattern:		**GAS**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	106

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Proj. ID: Unocal SS#3538, 180064	Received: 01/15/98
6747 Sierra Court Suite J		
Dublin, CA 94568	Lab Proj. ID: 9801853	Reported: 01/30/98
Attention: Deanna Harding		

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 6 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

pH analysis:
The voas had a pH = 1

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies
6747 Sierra Court, Ste J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#3538, 180064
Matrix: Liquid
Work Order #: 9801853 -01-03
Reported: Jan 30, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC012698BTEX06A	GC012698BTEX06A	GC012698BTEX06A	GC012698BTEX06A	GC012698BTEX06A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	980164201	980164201	980164201	980164201	980164201
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	1/26/98	1/26/98	1/26/98	1/26/98	1/26/98
Analyzed Date:	1/26/98	1/26/98	1/26/98	1/26/98	1/26/98
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	8.7	8.6	8.8	27	50
MS % Recovery:	87	86	88	90	83
Dup. Result:	10	10	10	30	58
MSD % Recov.:	100	100	100	100	97
RPD:	14	15	13	11	15
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK012698	BLK012698	BLK012698	BLK012698	BLK012698
Prepared Date:	1/26/98	1/26/98	1/26/98	1/26/98	1/26/98
Analyzed Date:	1/26/98	1/26/98	1/26/98	1/26/98	1/26/98
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	10	10	11	31	59
LCS % Recov.:	100	100	110	103	98
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Mike Gregory
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.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference