El Dorado Environmental, Inc.

2221 Goldorado Trail, El Dorado, California 95623

(916) 626-3898
Fax (916) 626-3899

RECEIVED

AUG 2 6 1996

August 17, 1996

Mr. Terrence A. Fox
Environmental Specialist
Ultramar Inc.
525 West Third Street
Hanford, California 93230

Subject: **Second Quarter 1996 Ground Water Monitoring Report**
Beacon Station #604, 1619 West First Street, Livermore, California

Dear Mr. Fox:

El Dorado Environmental, Inc. (EDE) has prepared this report to document the results of quarterly ground water monitoring conducted on June 13, 1996 at the subject site (Figure 1). Field work, conducted by Doulos Environmental (Doulos), included measurements of depth to ground water, subjective analysis of ground water in wells for the presence or absence of free petroleum product, well purging, and collection of ground water samples. Doulos reports that all field activities were conducted in accordance with field procedures described in Attachment A.

GROUND WATER ELEVATIONS

Prior to well purging, Doulos measured the depth to ground water in each well at the site. Ground water elevation data collected at the site since June 1993 are compiled in Table 1. Copies of Doulos' field data sheets are contained in Attachment B. Current depth to ground water measurements indicate a direction of ground water flow toward the northwest (Figure 2) at a gradient of approximately 0.02 foot per foot. Ground water elevations beneath the site have decreased an average of 5.71 feet since the previous monitoring event.

GROUND WATER SAMPLING AND ANALYSIS

Ground water samples were collected from five monitoring wells at the site. Each sample collected was analyzed for concentrations of dissolved:

what about MTBE ?

- benzene, toluene, ethylbenzene, and total xylenes (BTEX), by EPA method 602
- total petroleum hydrocarbons as gasoline (TPHg), by modified EPA method 8015

Analytical results since June 1993 are compiled in Table 2; copies of certified analytical reports for ground water samples collected during the current monitoring event are contained in Attachment C. Benzene was not present at detectable concentrations in the sample collected from monitoring well MW-1. Dissolved benzene concentrations decreased in the ground water samples collected from monitoring wells MW-2, MW-6, and MW-7 compared to the most recent sampling event. Benzene concentrations increased in the sample collected from monitoring well MW-5. Figure 3 illustrates the current interpreted distribution of dissolved benzene in ground water underlying the site.

A copy of this quarterly monitoring report should be submitted to:

Ms. Eva Chu
Department of Environmental Health
Alameda County Health Care Services
80 Swan Way, Room 20
Oakland, California 94612

Mr. Cecil Fox
California Regional Water Quality Control Board, San Francisco Bay Region
2101 Webster Street, Room 500
Oakland, California 94612

The interpretations and/or conclusions contained in this report represent our professional opinions. These opinions are based on currently available information. Other than this, no warranty is implied nor intended. This report has been prepared solely for the use of Ultramar Inc. Any reliance upon or use of this report by third parties will be at such parties' sole risk.

If you have any comments or questions, please contact the undersigned at (916) 626-3898.

Regards,

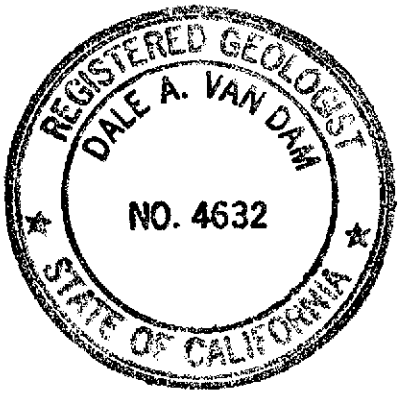
EL DORADO ENVIRONMENTAL, INC.

Dale A. van Dam

Dale A. van Dam, R.G.
Hydrogeologist

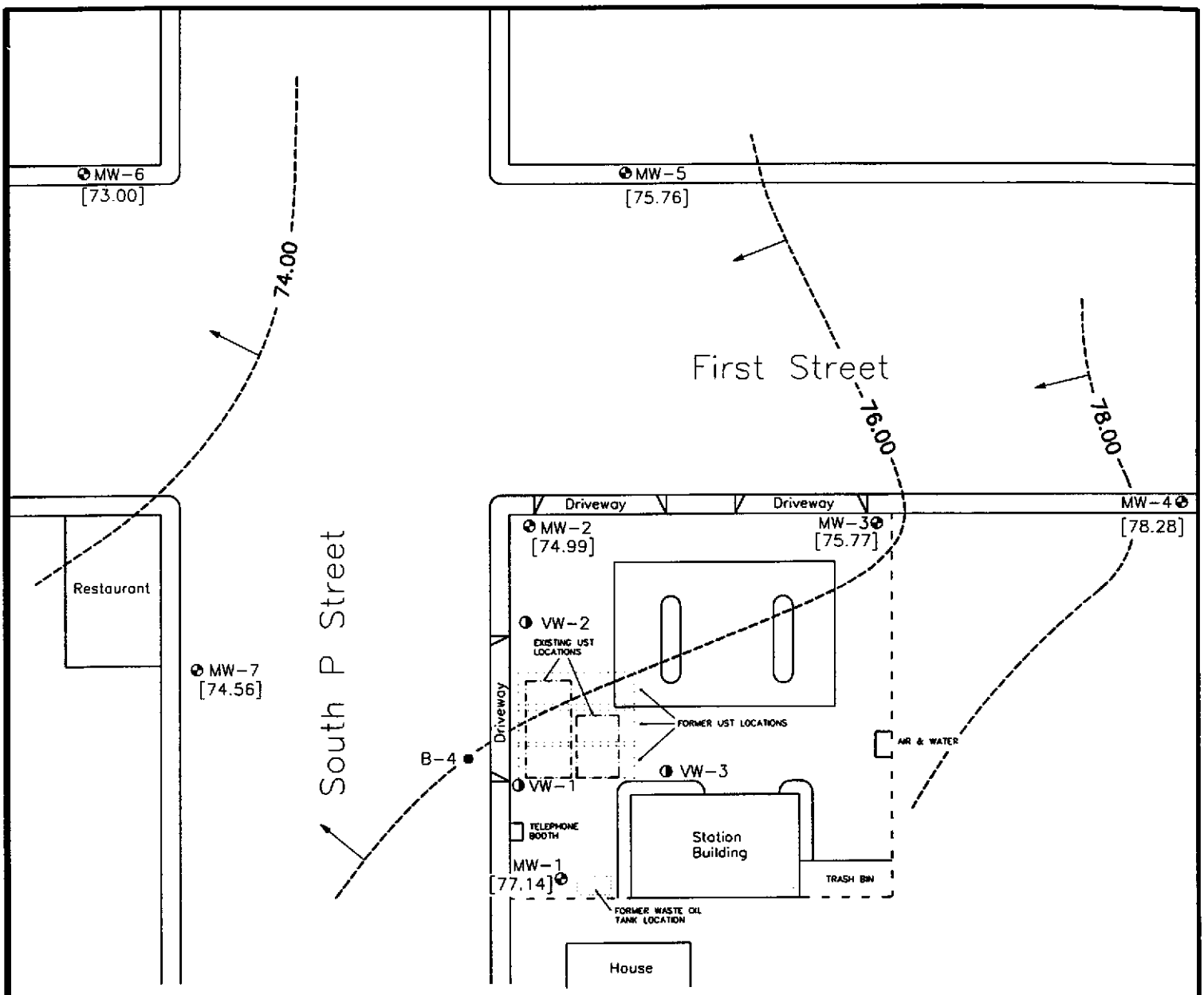
DAvD/davd

Attachments



SOURCE: STREET ATLAS U.S.A., DELORME MAPPING, 1994

SITE LOCATION MAP	FIGURE 1
BEACON STATION #604 1619 WEST FIRST STREET LIVERMORE, CALIFORNIA	PROJECT NUMBER: U013.01 DRAWN BY: D.A.V.D.
EL DORADO ENVIRONMENTAL, INC.	CHECKED BY: DvD



EXPLANATION

SB-4 ● Soil Boring Location and Number

VW-3 ◑ Vadose Well Location and Number

MW-5 ⊕ Monitoring Well Location and Number

[75.76] Ground Water Elevation in Feet

75.00 Line of Equal Elevation of Ground Water Measured in Feet

Inferred Direction of Ground Water Flow

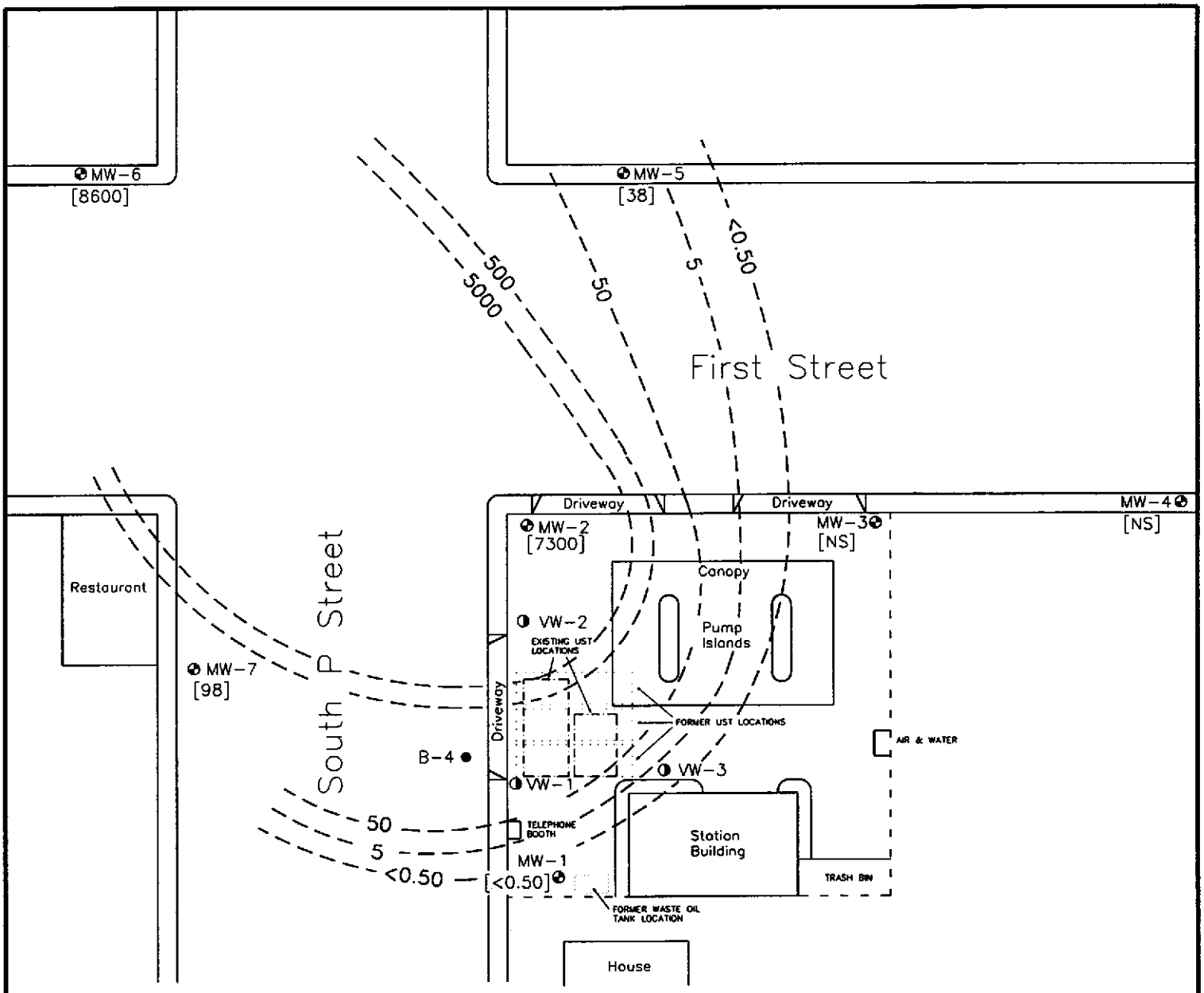
NORTH

0 40

SCALE IN FEET

SOURCE: FIGURE MODIFIED FROM DRAWING PROVIDED BY ACTON*MICKELSON*ENVIRONMENTAL, INC.

GROUND WATER CONTOUR MAP, JUNE 13, 1996	FIGURE 2
BEACON STATION #604 1619 WEST FIRST STREET LIVERMORE, CALIFORNIA	PROJECT NUMBER: U013.01 DRAWN BY: D.A.v.D.
EL DORADO ENVIRONMENTAL, INC.	CHECKED BY: DVD



EXPLANATION

- SB-4 ● Soil Boring Location and Number
- VW-3 ◑ Vadose Well Location and Number
- MW-5 ◕ Monitoring Well Location and Number
- [38] Benzene Concentration in Micrograms/Liter
- [NS] Monitoring Well Not Sampled
- --50-- Benzene Isoconcentration Line in Micrograms per Liter

NORTH

0 40

SCALE IN FEET

SOURCE: FIGURE MODIFIED FROM DRAWING PROVIDED BY ACTON•MICKELSON•ENVIRONMENTAL, INC.

DISSOLVED BENZENE DISTRIBUTION MAP, JUNE 13, 1996	FIGURE 3
BEACON STATION #604 1619 WEST FIRST STREET LIVERMORE, CALIFORNIA	PROJECT NUMBER: U013.01 DRAWN BY: D.A.v.D.
EL DORADO ENVIRONMENTAL, INC.	CHECKED BY: DvD

TABLE 1
GROUND WATER ELEVATION DATA

Beacon Station #604
1619 West First Street, Livermore, California

Monitoring Well	Top of Riser (feet)	Depth to Top/Bottom of Screened Interval (feet)	Monitoring Date	Depth to Water (feet)	Ground Water Elevation (feet)	Physical Observation
MW-1	100.00	34/54	06/01/93	37.50	62.50	No Product
			06/22/93	38.46	61.54	No Product
			10/06/93	42.22	57.78	No Product
			01/13/94	34.52	65.48	No Product
			03/30/94	31.93	68.07	No Product
			04/25/94	33.49	66.51	No Product
			08/12/94	41.03	58.97	No Product
			12/14/94	38.63	61.37	No Product
			02/10/95	30.80	69.20	No Product
			06/15/95	25.46	74.54	No Product
			09/26/95	31.05	68.95	No Product
			12/15/95	28.11	71.89	No Product
			03/21/96	17.67	82.33	No Product
			06/13/96	22.86	77.14	No Product
MW-2	98.68	34/54	06/01/93	38.02	60.66	No Product
			06/22/93	39.07	59.61	No Product
			10/06/93	43.72	54.96	No Product
			01/13/94	35.85	62.83	No Product
			03/30/94	32.82	65.86	No Product
			04/25/94	34.76	63.92	No Product
			08/12/94	44.33	54.35	No Product
			12/14/94	40.00	58.68	No Product
			02/10/95	32.16	66.52	No Product
			06/15/95	25.93	72.75	No Product
			09/26/95	32.42	66.26	No Product
			12/15/95	29.41	69.27	No Product
			03/21/96	17.47	81.21	No Product
			06/13/96	23.69	74.99	No Product

See notes at end of table

TABLE 1
GROUND WATER ELEVATION DATA

Beacon Station #604
1619 West First Street, Livermore, California

Monitoring Well	Top of Riser (feet)	Depth to Top/Bottom of Screened Interval (feet)	Monitoring Date	Depth to Water (feet)	Ground Water Elevation (feet)	Physical Observation
MW-3	97.08	33/53	06/01/93	36.18	60.90	No Product
			06/22/93	37.11	59.97	No Product
			10/06/93	41.15	55.93	No Product
			01/13/94	33.95	63.13	No Product
			03/30/94	30.97	66.11	No Product
			04/25/94	32.46	64.62	No Product
			08/12/94	41.72	55.36	No Product
			12/14/94	37.62	59.46	No Product
			02/10/95	29.96	67.12	No Product
			06/15/95	23.66	73.42	No Product
			09/26/95	29.62	67.46	No Product
			12/15/95	27.10	69.98	No Product
			03/21/96	15.85	81.23	No Product
			06/13/96	21.31	75.77	No Product
MW-4	99.35	27/47	03/30/94	31.56	67.79	No Product
			04/25/94	32.73	66.62	No Product
			08/12/94	41.61	57.74	No Product
			12/14/94	38.11	61.24	No Product
			02/10/95	30.50	68.85	No Product
			06/15/95	23.63	75.72	No Product
			09/26/95	29.70	69.65	No Product
			12/15/95	27.56	71.79	No Product
			03/21/96	15.63	83.72	No Product
			06/13/96	21.07	78.28	No Product
MW-5	98.37	27/47	03/30/94	32.07	66.30	No Product
			04/25/94	33.65	64.72	No Product
			08/12/94	42.73	55.64	No Product
			12/14/94	38.89	59.48	No Product
			02/10/95	31.44	66.93	No Product
			06/15/95	24.99	73.38	No Product
			09/26/95	30.20	68.17	No Product
			12/15/95	28.56	69.81	No Product
			03/21/96	16.82	81.55	No Product
			06/13/96	22.61	75.76	No Product

See notes at end of table

TABLE 1
GROUND WATER ELEVATION DATA

Beacon Station #604
1619 West First Street, Livermore, California

Monitoring Well	Top of Riser (feet)	Depth to Top/Bottom of Screened Interval (feet)	Monitoring Date	Depth to Water (feet)	Ground Water Elevation (feet)	Physical Observation
MW-6	97.62	28/48	03/30/94	33.38	64.24	No Product
			04/25/94	35.49	62.13	No Product
			08/12/94	45.14	52.48	No Product
			12/14/94	40.99	56.63	No Product
			02/10/95	33.34	64.28	No Product
			06/15/95	26.88	70.74	No Product
			09/26/95	33.55	64.07	No Product
			12/15/95	30.32	67.30	No Product
			03/21/96	18.89	78.73	No Product
			06/13/96	24.62	73.00	No Product
MW-7	98.03	27/47	03/30/94	31.98	66.05	No Product
			04/25/94	33.56	64.47	No Product
			08/12/94	43.35	54.68	No Product
			12/14/94	39.34	58.69	No Product
			02/10/95	32.11	65.92	No Product
			06/15/95	25.51	72.52	No Product
			09/26/95	31.43	66.60	No Product
			12/15/95	28.97	69.06	No Product
			03/21/96	17.36	80.67	No Product
			06/13/96	23.47	74.56	No Product

Note: Monitoring well casing elevations were surveyed relative to an arbitrary bench mark at the top of the casing of monitoring well MW-1 with an assumed elevation of 100.00 feet.

TABLE 2
GROUND WATER ANALYTICAL RESULTS

Beacon Station #604
1619 West First Street, Livermore, California
Concentrations in micrograms per Liter

Monitoring Well	Monitoring Date	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline	MTBE
MW-1	06/01/93	2200	400	<50	4900	27000	
	06/22/93	8000	10000	260	10000	87000	
	10/06/93	4700	6500	740	5300	40000	
	01/13/94	1300	950	110	850	9400	
	04/25/94	1500	1800	290	1700	11000	
	08/12/94	550	330	260	1400	11000	
	12/14/94	1000	1200	320	1500	11000	
	02/10/95	1200	1500	280	1500	9300	
	06/15/95	5.6	<0.50	<0.50	<0.50	140	
	09/26/95	140	<0.50	<0.50	43	410	
	12/15/95	250	<1.3	<1.3	87	740	
	03/21/96	0.52	<0.50	<0.50	0.51	<50	<5.0
	06/13/96	<0.50	<0.50	<0.50	<0.50	240*	<5.0
MW-2	06/01/93	20000	21000	3300	18000	170000	
	06/22/93	19000	22000	3500	18000	160000	
	10/06/93	17000	17000	3000	15000	110000	
	01/13/94	20000	19000	2300	14000	93000	
	04/25/94	9600	7300	840	7800	41000	
	08/12/94	11000	11000	2300	11000	59000	
	12/14/94	13000	13000	2200	12000	63000	
	02/10/95	12000	12000	2200	11000	63000	
	06/15/95	11000	12000	1900	11000	61000	
	09/26/95	9400	11000	2300	12000	61000	
	12/15/95	8000	8300	2200	12000	48000	
	03/21/96	8000	7700	2400	12000	48000	<500
	06/13/96	7300	8800	1900	12000	33000	<250

See notes at end of table

TABLE 2
GROUND WATER ANALYTICAL RESULTS

Beacon Station #604
1619 West First Street, Livermore, California
Concentrations in micrograms per Liter

Monitoring Well	Monitoring Date	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline	MTBE
MW-3	06/01/93	4.6	<0.50	<0.50	1.9	270	
	06/22/93	8.2	<0.50	<0.50	0.72	160	
	10/06/93	57	110	24	120	740	
	01/13/94	2.6	0.67	0.78	4.2	83	
	04/25/94	0.75	3.2	0.50	3.6	60	
	08/12/94	7.3	14	2.6	13	310	
	12/14/94	<0.50	<0.50	<0.50	<0.50	75	
	02/10/95	1.4	<0.50	<0.50	1.8	96	
	06/15/95	<0.50	<0.50	<0.50	<0.50	<50	
	09/26/95	<0.50	<0.50	<0.50	<0.50	<50	
	12/15/95	<0.50	<0.50	<0.50	<0.50	<50	
	03/21/96	NS	NS	NS	NS	NS	
	06/13/96	NS	NS	NS	NS	NS	
MW-4	03/30/94	4.2	15	2.5	26	120	
	04/25/94	<0.50	1.8	<0.50	2.1	65	
	08/12/94	<0.50	<0.50	<0.50	<0.50	<50	
	12/14/94	<0.50	<0.50	<0.50	<0.50	<50	
	02/10/95	<0.50	<0.50	<0.50	<0.50	<50	
	06/15/95	<0.50	<0.50	<0.50	<0.50	<50	
	09/26/95	<0.50	<0.50	<0.50	<0.50	<50	
	12/15/95	<0.50	<0.50	<0.50	<0.50	<50	
	03/21/96	NS	NS	NS	NS	NS	
	06/13/96	NS	NS	NS	NS	NS	
MW-5	03/30/94	1300	20	<13	160	7500	
	04/25/94	1100	41	130	740	6500	
	08/12/94	420	2.9	41	98	4000	
	12/14/94	660	<2.5	33	13	4800	
	02/10/95	490	<13	23	19	5200	
	06/15/95	<0.50	<0.50	<0.50	<0.50	460	
	09/26/95	61	<0.50	3.1	<0.50	1400	
	12/15/95	77	1.5	10	1.5	2100	
	03/21/96	35	2.0	2.0	18.00	930	<13.0
	06/13/96	38	0.72	1.9	2.0	610	<5.0

See notes at end of table

TABLE 2
GROUND WATER ANALYTICAL RESULTS

Beacon Station #604
1619 West First Street, Livermore, California
Concentrations in micrograms per Liter

MTBE

Monitoring Well	Monitoring Date	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline	MTBE
MW-6	03/30/94	21000	8600	1700	12000	63000	
	04/25/94	22000	12000	2300	16000	77000	
	08/12/94	12000	8100	2200	16000	65000	
	12/14/94	18000	9500	2200	14000	65000	
	02/10/95	21000	8400	2000	14000	63000	
	06/15/95	20000	11000	2100	15000	75000	
	09/26/95	15000	9600	1700	12000	62000	
	12/15/95	15000	9000	2300	15000	61000	
	03/21/96	18000	9800	2400	16000	65000	<1300
	06/13/96	8600	3300	2200	12000	29000	<250
MW-7	03/30/94	7200	2400	1600	11000	43000	
	04/25/94	3900	1000	940	6900	30000	
	08/12/94	3800	1400	1300	7500	30000	
	12/14/94	3600	1200	900	6400	31000	
	02/10/95	4000	900	890	5100	27000	
	06/15/95	920	680	740	4100	17000	
	09/26/95	200	150	170	810	7000	
	12/15/95	350	170	540	1900	11000	
	03/21/96	320	100	730	2500	12000	<130
	06/13/96	98	19	370	620	5900	<50

NS = Well Not Sampled on This Date.
* = Product is not typical gasoline.

ATTACHMENT A

ULTRAMAR FIELD PROCEDURES

ATTACHMENT A - ULTRAMAR FIELD PROCEDURES

The following section describes procedures used by field personnel in the performance of ground water sampling at Ultramar Inc. sites.

Ground Water Level and Total Depth Determination

A water level indicator is lowered down the well and a measurement of the depth to water from an established reference point on the casing is taken. The indicator probe is used to sound the bottom of the well and a measurement of the total depth of the well is taken. Both the water level and total depth measurements are taken to the nearest 0.01-foot.

Visual Analysis of Ground Water

Prior to purging and sampling ground water monitoring wells, a water sample is collected from each well for subjective analysis. The visual analysis involves gently lowering a clean, disposable, polyethylene bailer to approximately one-half the bailer length past the water table interface. The bailer is then retrieved, and the sample contained within the bailer is examined for floating product or the appearance of a petroleum product sheen. If measurable free product is noted in the bailer, a water/product interface probe is used to determine the thickness of the free product to the nearest 0.01-foot. The thickness of free product is determined by subtracting the depth to product from the depth to water.

Monitoring Well Purging and Sampling

Monitoring wells are purged by removing approximately four casing volumes of water from the well using a clean disposable bailer or electrical submersible purge pump. Purge volumes are calculated prior to purging. During purging, the temperature, pH, and electric conductivity of the purge water are monitored. The well is considered to be sufficiently purged when: The four casing volumes have been removed; the temperature, pH, and conductivity values have stabilized to within 10% of the initial readings; and the ground water being removed is relatively free of suspended solids. After purging, ground water levels are allowed to stabilize to within 80% of the initial water level reading. A water sample is then collected from each well with a clean, disposable polyethylene bailer. If the well is bailed or pumped dry prior to removing the minimum volume of water, the ground water is allowed to recharge. If the well has recharged to within 80% of the initial depth to water reading within two hours, the well will continue to be purged until the minimum volume of water has been removed. If the well has not recharged to at least 80% of the initial depth to water reading within two hours, the well is considered to contain formational water and a ground water sample is collected. Ground water removed from the well is stored in 55-gallon drums at the site and labeled pending disposal.

In wells where free product is detected, the wells will be bailed to remove the free product. An estimate of the volume of product and water well be recorded. If the free product thickness is reduced to the point where a measurable thickness is no longer present in the well, a ground water sample will be collected. If free product persists throughout the purging process, a final free product thickness measurement will be taken and a ground water sample will not be collected.

Ground water samples are stored in 40-milliliter vials so that air passage through the sample is minimized (to prevent volatilization of the sample). The vial is tilted and filled slowly until an upward convex meniscus forms over the mouth of the vial. The Teflon™ side of the septum (in cap) is then placed against the meniscus, and the cap is screwed on tightly. The sample is then inverted and the bottle is tapped lightly to check for air bubbles. If an air bubble is present in the vial, the cap is removed and more sample is transferred from the bailer. The vial is then resealed and rechecked for air bubbles. The sample is then appropriately labeled and stored on ice from the time of collection through the time of delivery to the laboratory. The Chain-of-Custody form is completed to ensure sample integrity. Ground water samples are transported to a state-certified laboratory and analyzed within the U.S. Environmental Protection Agency-specified hold times for the specified analytes.

ATTACHMENT B

DOULOS ENVIRONMENTAL FIELD DATA SHEETS

DOULOS ENVIRONMENTAL COMPANY
GROUNDWATER/LIQUID LEVEL DATA
(measurements in feet)

Project Address: Beacon #604, 1619 West First Street Date: 6-13-96

Livermore, CA Project No.: 94-604-01

Recorded by: Hal Hansen

Well No	Time	Well Elev. TOC	Depth to Gr. Water	Measured Total Depth	Gr. Water Elevation	Depth to Product	Product Thickness	Comments
MW-1	11:01		22.86	54.11				Petroleum odor noted
MW-2	11:24		23.69	53.71				Petroleum odor noted
MW-3	11:04		21.31	52.52				—
MW-4	11:08		21.07	46.60				—
MW-5	11:14		22.61	46.35				no odor noted
MW-6	11:22		24.62	47.51				Petroleum odor noted
MW-7	11:18		23.47	46.58				no odor noted

Notes:

DOULOS ENVIRONMENTAL COMPANY SAMPLING INFORMATION SHEET

Client: Ultramar Sampling Date: 6-13-96

Site: Beacon #604 Project No.: 95-604-01

1619 West First Street Well Designation: MW- 1

Livermore, CA

Is setup of traffic control devices required? (NO) YES time:_____ hours
Is there standing water in well box? (NO) YES Above TOC Below TOC
Is top of casing cut level? NO (YES) If no, see remarks
Is well cap sealed and locked? NO (YES) If no, see remarks
Height of well casing riser (in inches): 6
Well cover type: 8" UV_____ 12" UV_____ 12" EMCO_____ 8" BK_____
12" BK_____ 12" DWP_____ 12" CNI X 36" CNI_____ Other_____
General condition of wellhead assembly: Excellent (Good) Fair Poor

Purging Equipment:
_____2" disposable bailer
_____2" PVC bailer
_____4" PVC bailer
_____Submersible pump
_____Dedicated bailer
X Centrifugal pump

Sampled with: Disposable bailer: X Teflon bailer:_____

Well Diameter: 2"____ 4" X 6"____ 8"____

Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement
Time: 11:01
Depth of well: 54.11
Depth to water: 22.86

Recharge Measurement
Time: 12:15
Depth to water: 23.60

Calculated purge: 81.2 gal
Actual purge: 81.2 gal

Start purge: 11:30 Sampling time: 12:16

Time	Temp.	E.C.	pH	Turbidity	Volume
11:41	76.3	1141	7.61	—	1
11:50	76.4	1127	7.21	—	2
11:58	76.3	1114	7.17	—	3
12:14	76.1	1110	7.18	—	4

Sample appearance: clear Lock: Dolphin

Equipment replaced: (Check all that apply) Note condition of replaced item
2" Locking Cap:_____ Lock #3753:_____ 7/32 Allenhead:_____
4" Locking Cap:_____ Lock-Dolphin:_____ 9/16 Bolt:_____
6" Locking Cap:_____ Pinned Allenhead (DWP):_____

Remarks: _____

Signature: Kevin Simmons

DOULOS ENVIRONMENTAL COMPANY SAMPLING INFORMATION SHEET

Client: Ultramar Sampling Date: 6-13-96

Site: Beacon #604 Project No.: 95-604-01

1619 West First Street Well Designation: MW-2

Livermore, CA

Is setup of traffic control devices required? (NO) YES time:_____ hours
Is there standing water in well box? (NO) YES Above TOC Below TOC
Is top of casing cut level? NO (YES) If no, see remarks
Is well cap sealed and locked? NO (YES) If no, see remarks
Height of well casing riser (in inches): 4
Well cover type: 8" UV_____ 12" UV_____ 12" EMCO_____ 8" BK_____
12" BK_____ 12" DWP_____ 12" CNI X 36" CNI_____ Other_____
General condition of wellhead assembly: Excellent (Good) Fair Poor

Purging Equipment: _____2" disposable bailer _____Submersible pump
_____2" PVC bailer _____Dedicated bailer
_____4" PVC bailer X Centrifugal pump

Sampled with: Disposable bailer: X Teflon bailer:_____

Well Diameter: 2"____ 4" X 6"____ 8"____

Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement
Time: 11:24
Depth of well: 53.71
Depth to water: 23.69

Recharge Measurement
Time: 1:55
Depth to water: 24.71

Calculated purge: 78 gal
Actual purge: 78 gal

Start purge: 1:06 Sampling time: 1:56

Time	Temp.	E.C.	pH	Turbidity	Volume
1:15	88.6	1240	7.46	—	1
1:22	88.1	1210	7.31	—	2
1:36	88.4	1208	7.22	—	3
1:49	88.5	1193	7.18	—	4

Sample appearance: clear Lock: Dolphin

Equipment replaced: (Check all that apply) Note condition of replaced item
2" Locking Cap:_____ Lock #3753:_____ 7/32 Allenhead:_____
4" Locking Cap:_____ Lock-Dolphin:_____ 9/16 Bolt:_____
6" Locking Cap:_____ Pinned Allenhead (DWP):_____

Remarks: _____

Signature: Karl Klonow

DOULOS ENVIRONMENTAL COMPANY SAMPLING INFORMATION SHEET

Client: Ultramar Sampling Date: 6-13-96

Site: Beacon #604 Project No.: 95-604-01

1619 West First Street Well Designation: MW- 5

Livermore, CA

Is setup of traffic control devices required? (NO) YES time:_____ hours
Is there standing water in well box? (NO) YES Above TOC Below TOC
Is top of casing cut level? NO (YES) If no, see remarks
Is well cap sealed and locked? NO (YES) If no, see remarks
Height of well casing riser (in inches): 4
Well cover type: 8" UV_____ 12" UV X 12" EMCO_____ 8" BK_____
12" BK_____ 12" DWP_____ 12" CNI_____ 36" CNI_____ Other_____
General condition of wellhead assembly: Excellent (Good) Fair Poor

Purging Equipment: _____2" disposable bailer _____Submersible pump
_____2" PVC bailer _____Dedicated bailer
_____4" PVC bailer X Centrifugal pump

Sampled with: Disposable bailer: X Teflon bailer:_____

Well Diameter: 2" X 4"____ 6"____ 8"____

Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement
Time: 11:14
Depth of well: 46.35
Depth to water: 22.61

Recharge Measurement
Time: 12:26
Depth to water: 23.78

Calculated purge: 15.1 gal.
Actual purge: 15.1 gal.

Start purge: 12:18 Sampling time: 12:28

Time	Temp.	E.C.	pH	Turbidity	Volume
12:19	77.8	1190	7.67	—	1
12:20	77.8	1140	7.33	—	2
12:21	78.1	1121	7.20	—	3
12:23	78.2	1118	7.18	—	4

Sample appearance: Clear Lock: Dolphin

Equipment replaced: (Check all that apply) Note condition of replaced item
2" Locking Cap:_____ Lock #3753:_____ 7/32 Allenhead:_____
4" Locking Cap:_____ Lock-Dolphin:_____ 9/16 Bolt:_____
6" Locking Cap:_____ Pinned Allenhead (DWP):_____

Remarks: _____

Signature: Karl Kraus

DOULOS ENVIRONMENTAL COMPANY SAMPLING INFORMATION SHEET

Client: Ultramar Sampling Date: 6-13-96

Site: Beacon #604 Project No.: 95-604-01

1619 West First Street Well Designation: MW- 6

Livermore, CA

Is setup of traffic control devices required? (NO) YES time:_____ hours
Is there standing water in well box? (NO) YES Above TOC Below TOC
Is top of casing cut level? NO (YES) If no, see remarks
Is well cap sealed and locked? NO (YES) If no, see remarks
Height of well casing riser (in inches): 4
Well cover type: 8" UV X 12" UV_____ 12" EMCO_____ 8" BK_____
12" BK_____ 12" DWP_____ 12" CNI_____ 36" CNI_____ Other_____
General condition of wellhead assembly: Excellent (Good) Fair Poor

Purging Equipment:
_____2" disposable bailer
_____2" PVC bailer
_____4" PVC bailer
_____Submersible pump
_____Dedicated bailer
X Centrifugal pump

Sampled with: Disposable bailer: X Teflon bailer:_____

Well Diameter: 2" X 4"___ 6"___ 8"___

Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement
Time: 11:22
Depth of well: 47.51
Depth to water: 24.69

Recharge Measurement
Time: 12:55
Depth to water: 26.17

Calculated purge: 14.7 g
Actual purge: 14.7 g

Start purge: 12:45 Sampling time: 1:00

Time	Temp.	E.C.	pH	Turbidity	Volume
12:46	80.5	1371	7.37	—	1
12:47	80.7	1261	7.21	—	2
12:49	80.6	1240	7.15	—	3
12:51	80.7	1220	7.10	—	4

Sample appearance: Clear Lock: Dolphin

Equipment replaced: (Check all that apply) Note condition of replaced item
2" Locking Cap:_____ Lock #3753:_____ 7/32 Allenhead:_____
4" Locking Cap:_____ Lock-Dolphin:_____ 9/16 Bolt:_____
6" Locking Cap:_____ Pinned Allenhead (DWP):_____

Remarks: _____

Signature: Karl Hansen

DOULOS ENVIRONMENTAL COMPANY SAMPLING INFORMATION SHEET

Client: Ultramar Sampling Date: 6-13-96

Site: Beacon #604 Project No.: 95-604-01

1619 West First Street Well Designation: MW- 7

Livermore, CA

Is setup of traffic control devices required? (NO) YES time:_____ hours
Is there standing water in well box? (NO) YES Above TOC Below TOC
Is top of casing cut level? NO (YES) If no, see remarks
Is well cap sealed and locked? NO (YES) If no, see remarks
Height of well casing riser (in inches): 10
Well cover type: 8" UV X 12" UV_____ 12" EMCO_____ 8" BK_____
12" BK_____ 12" DWP_____ 12" CNI_____ 36" CNI_____ Other_____
General condition of wellhead assembly: Excellent (Good) Fair Poor

Purging Equipment: _____2" disposable bailer _____Submersible pump
_____2" PVC bailer _____Dedicated bailer
_____4" PVC bailer X Centrifugal pump

Sampled with: Disposable bailer: X Teflon bailer:_____

Well Diameter: 2" X 4"____ 6"____ 8"____

Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement
Time: 11:18
Depth of well: 46.58
Depth to water: 23.47

Recharge Measurement
Time: 12:40
Depth to water: 24.67

Calculated purge: 14.7 gal
Actual purge: 14.7 gal

Start purge: 12:31 Sampling time: 12:41

Time	Temp.	E.C.	pH	Turbidity	Volume
12:32	78.7	1240	7.71	—	1
12:34	78.8	1231	7.56	—	2
12:35	78.9	1179	7.46	—	3
12:36	78.9	1178	7.31	—	4

Sample appearance: clear Lock: Dolphin

Equipment replaced: (Check all that apply) Note condition of replaced item
2" Locking Cap:_____ Lock #3753:_____ 7/32 Allenhead:_____
4" Locking Cap:_____ Lock-Dolphin:_____ 9/16 Bolt:_____
6" Locking Cap:_____ Pinned Allenhead (DWP):_____

Remarks: _____

Signature: Hal Hansen

ATTACHMENT C

LABORATORY REPORT AND CHAIN-OF-CUSTODY FORM

WEST LABORATORY

June 25, 1996
Sample Log 14908

Dale van Dam
El Dorado Environmental
2221 Goldorado Trail
El Dorado, CA 95623

Subject: Analytical Results for 5 Water Samples
Identified as: Beacon 604 (Proj. # 94-604-01)
Received: 06/14/96

Dear Mr. van Dam:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on June 25, 1996 and describes procedures used to analyze the samples.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 602/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)

Please refer to the following table(s) for summarized analytical results and contact us at 916-753-9500 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Joel Kiff
Senior Chemist

WEST LABORATORY

Sample Log 14908

MTBE (Methyl-t-butyl ether) By EPA Method 8020/602

From : Beacon 604 (Proj. # 94-604-01)
Sampled : 06/13/96
Received : 06/14/96
Matrix : Water

MTBE	(MRL) ug/L	Measured Value ug/L
MW-1	(5.0)	<5.0
MW-2	(250)	<250
MW-5	(5.0)	<5.0
MW-6	(250)	<250
MW-7	(50)	<50

Approved By:

Joel Kiff
Senior Chemist

WEST LABORATORY

Sample Log 14908

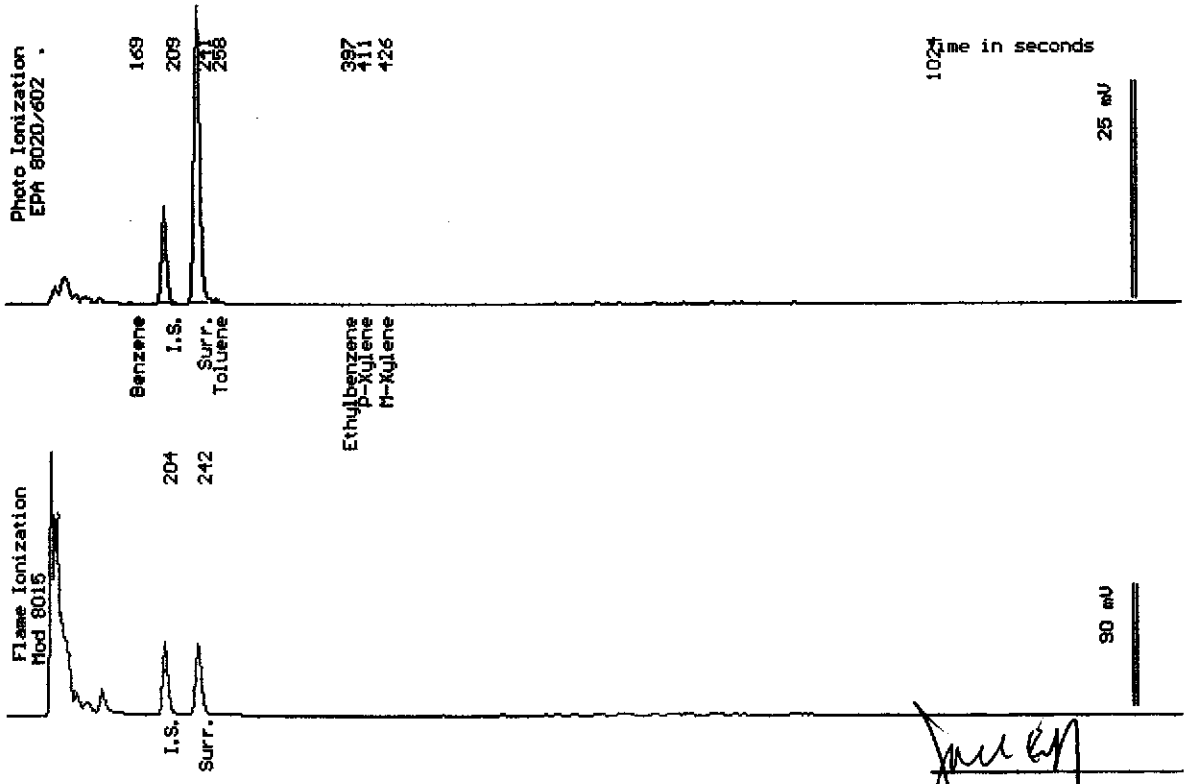
14908-01

Sample: **MW-1**

From : Beacon 604 (Proj. # 94-604-01)
Sampled : 06/13/96
Dilution : 1:1 QC Batch : 4148H
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	240 *
Surrogate Recovery		104 %

* Product is not typical gasoline.



Date Analyzed: 06-25-96
Column : 0.53mm ID X 30m DB4WAX (J&W Scientific)

Joel Kiff
Senior Chemist

WEST LABORATORY

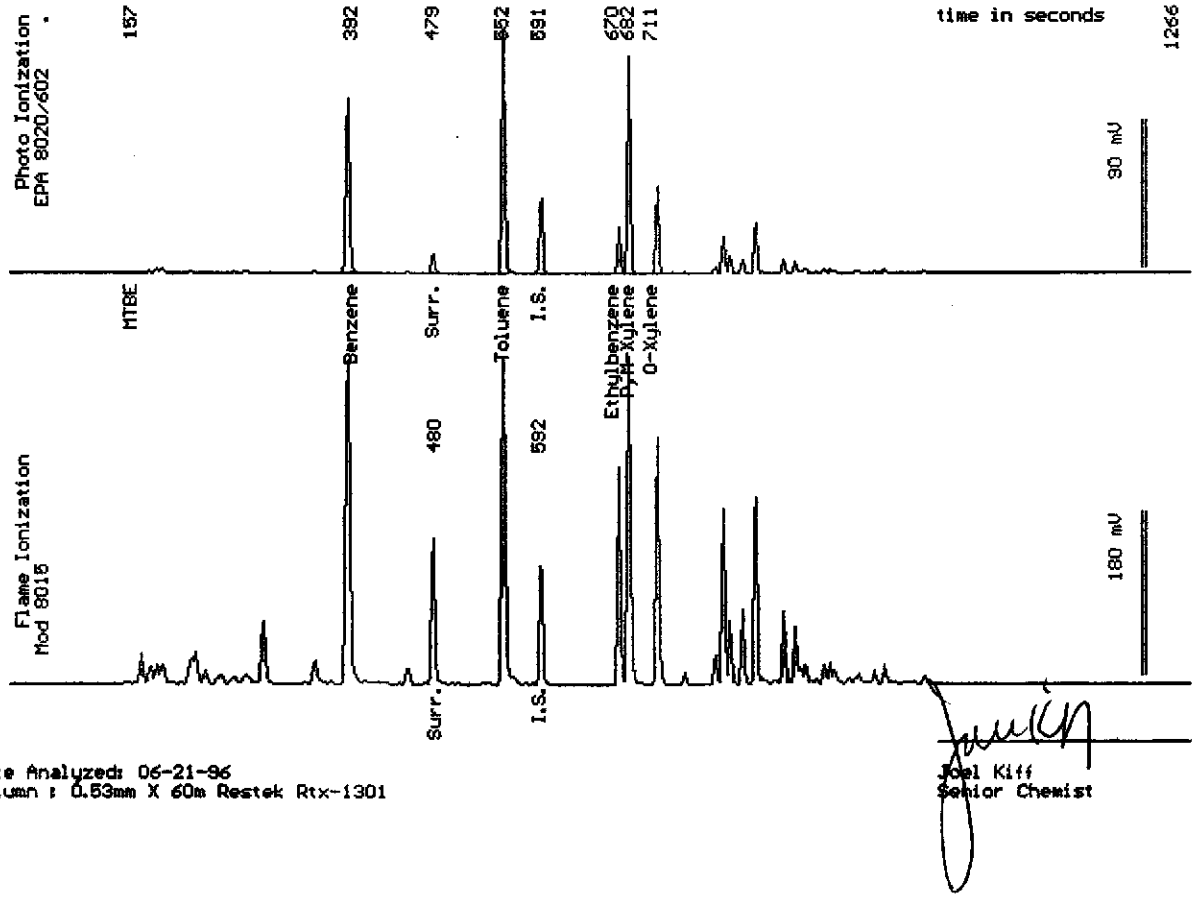
Sample Log 14908

14908-02

Sample: **MW-2**

From : Beacon 604 (Proj. # 94-604-01)
Sampled : 06/13/96
Dilution : 1:50 QC Batch : 2145E
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(25)	7300
Toluene	(25)	8800
Ethylbenzene	(25)	1900
Total Xylenes	(25)	12000
TPH as Gasoline	(2500)	33000
Surrogate Recovery		95 %



Date Analyzed: 06-21-96
Column : 0.53mm X 60m Restek Rtx-1301

Joel Kiff
Senior Chemist

WEST LABORATORY

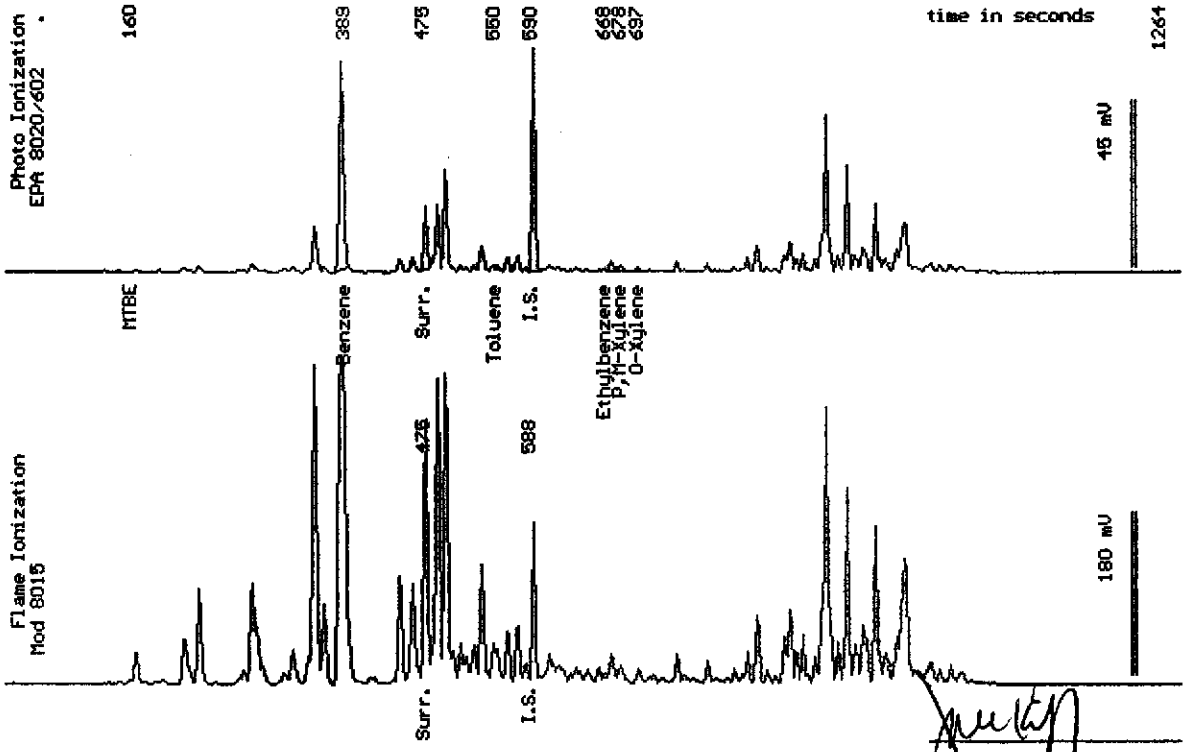
Sample Log 14908

14908-03

Sample: **MW-5**

From : Beacon 604 (Proj. # 94-604-01)
Sampled : 06/13/96
Dilution : 1:1 QC Batch : 2145D
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L	
Benzene	(.50)	38	
Toluene	(.50)	.72	
Ethylbenzene	(.50)	1.9	
Total Xylenes	(.50)	2.0	
TPH as Gasoline	(50)	610	
Surrogate Recovery		118	%



Date Analyzed: 06-21-96
Column : 0.53mm X 60m Restek Rtx-1301

Joel Kiff
Senior Chemist

WEST LABORATORY

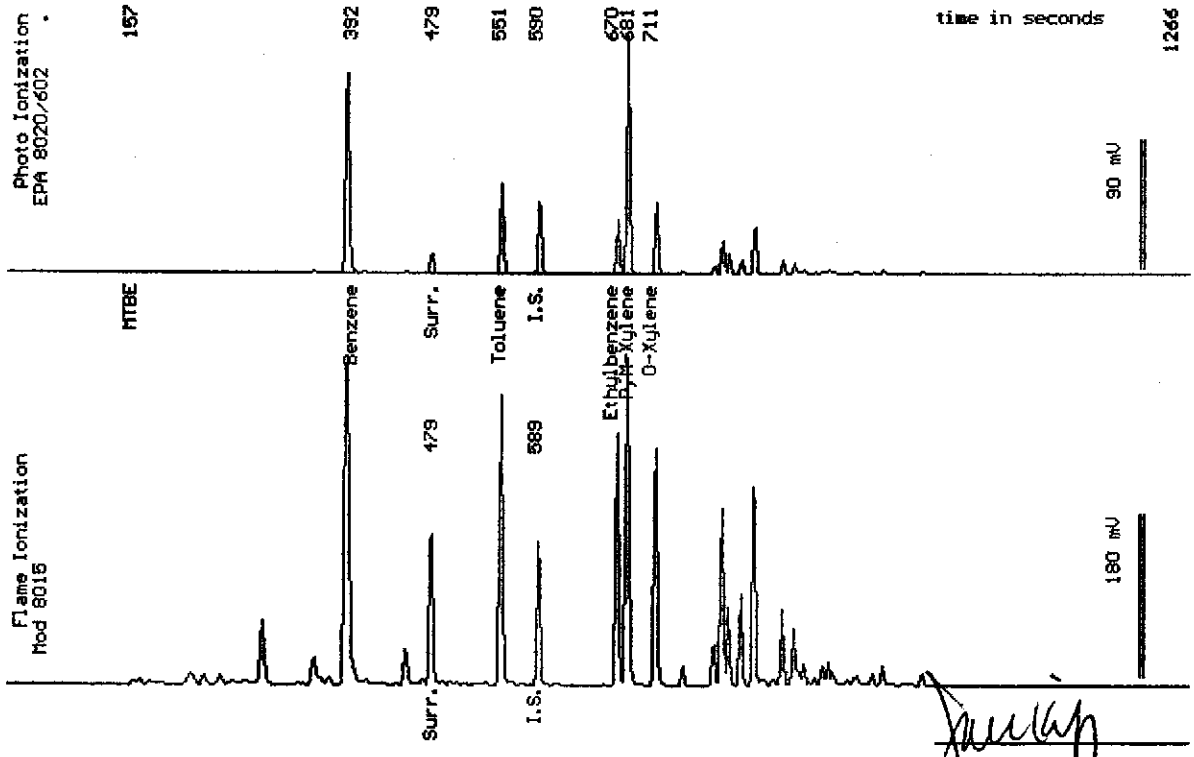
Sample Log 14908

14908-04

Sample: **MW-6**

From : Beacon 604 (Proj. # 94-604-01)
Sampled : 06/13/96
Dilution : 1:50 QC Batch : 2145E
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(25)	8600
Toluene	(25)	3300
Ethylbenzene	(25)	2200
Total Xylenes	(25)	12000
TPH as Gasoline	(2500)	29000
Surrogate Recovery		95 %



Date Analyzed: 06-21-96
Column : 0.53mm X 60m Restek Rtx-1301

Joel Kiff
Senior Chemist

WEST LABORATORY

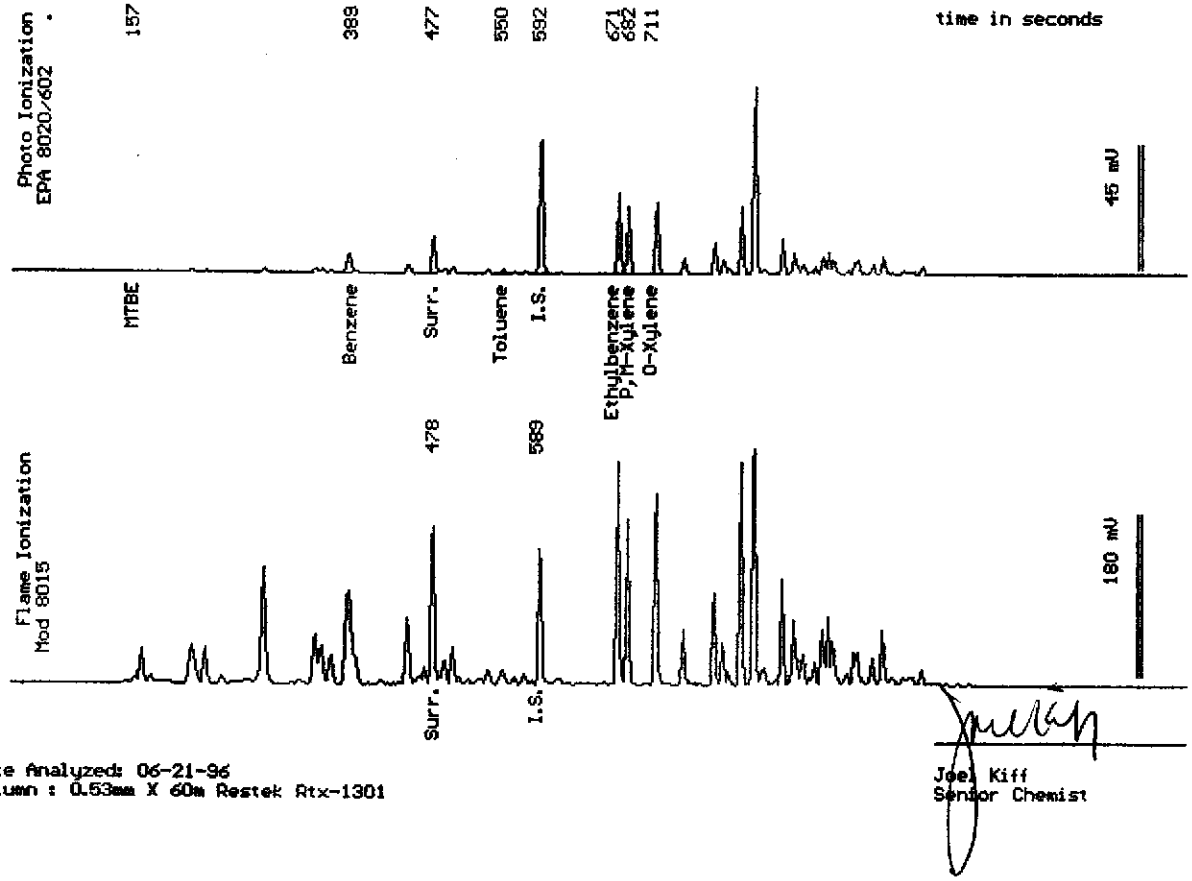
Sample Log 14908

14908-05

Sample: **MW-7**

From : Beacon 604 (Proj. # 94-604-01)
Sampled : 06/13/96
Dilution : 1:10 QC Batch : 2145E
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(5.0)	98
Toluene	(5.0)	19
Ethylbenzene	(5.0)	370
Total Xylenes	(5.0)	620
TPH as Gasoline	(500)	5900
Surrogate Recovery		99 %



Date Analyzed: 06-21-96
Column : 0.53mm X 60m Restek Rtx-1301

Joel Kiff
Senior Chemist

Ultramar Inc.

CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No.	Sampler (Print Name)	Date	Form No.
604	Hal Hansen	6-13-96	1 of 1

Project No.	Sampler (Signature)
94-604-01	Hal Hansen

Project Location	Affiliation
Livermore	Doulos Env.

ANALYSES

Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)						No. of Containers	REMARKS
MW-1	6-13-96	1216	14908-01	X	X							2	Standard TAT
MW-2	↓	156	02	↓	↓							↓	
MW-5	↓	1228	03	↓	↓							↓	
MW-6	↓	100	04	↓	↓							↓	
MW-7	↓	1241	05	↓	↓							↓	RECEIVED DATE 06/14/96 1300 0°

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Hal Hansen Doulos Env.	6-14-96	11:50	Troy S. Luzon CWEST	6-14-96	11:50
Troy S. Luzon / WEST	06/14/96	1300			
			John Marty	06/14/96	1300

Report To: Dale van Dam

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: Terry Fox

WHITE: Return to Client with Report YELLOW: Laboratory Copy PINK: Originator Copy

32-8003 1/90