#### El Dorado Environmental, Inc.

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

May 10, 1999

Mr. Terrence A. Fox Senior Project Manager Ultramar Inc. 525 West Third Street Hanford, California 93230

Subject:

Fourth Quarter 1998 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 November 30, 1998, 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 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 sampling, 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 west-northwest (Figure 2) at a gradient of approximately 0.02 foot per foot. Ground water elevations beneath the site have decreased an average of 4.68 feet since the previous monitoring event.

FIGURES:	FIGURE 1 SITE LOCATION MAP
	FIGURE 2 GROUND WATER CONTOUR MAP NOVEMBER 30, 1998
	FIGURE 3 DISSOLVED BENZENE DISTRIBUTION MAP NOVEMBER 30, 1998
TABLES:	TABLE 1 GROUND WATER ELEVATION DATA
	TABLE 2 GROUND WATER ANALYTICAL RESULTS
ATTACHMENTS:	A ULTRAMAR FIELD PROCEDURES
	B DOULOS ENVIRONMENTAL FIELD DATA SHEETS
	C LABORATORY REPORT AND CHAIN-OF-CUSTODY FORM

:

#### **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:

- Benzene, toluene, ethylbenzene, and total xylenes (BTEX), by EPA Method 602
- Total petroleum hydrocarbons as gasoline (TPHg), by modified EPA Method 8015
- Methyl-Tertiary-Butyl Ether (MTBE) by EPA Method 602

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 ground water samples collected from monitoring wells MW-1 and MW-5. Dissolved benzene concentrations decreased in the ground water samples collected from monitoring wells MW-2 and MW-6; and increased in the ground water sample collected from monitoring well MW-7 compared to the most recent sampling event. 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 (530) 626-3898.

Regards,

EL DORADO ENVIRONMENTAL, INC.

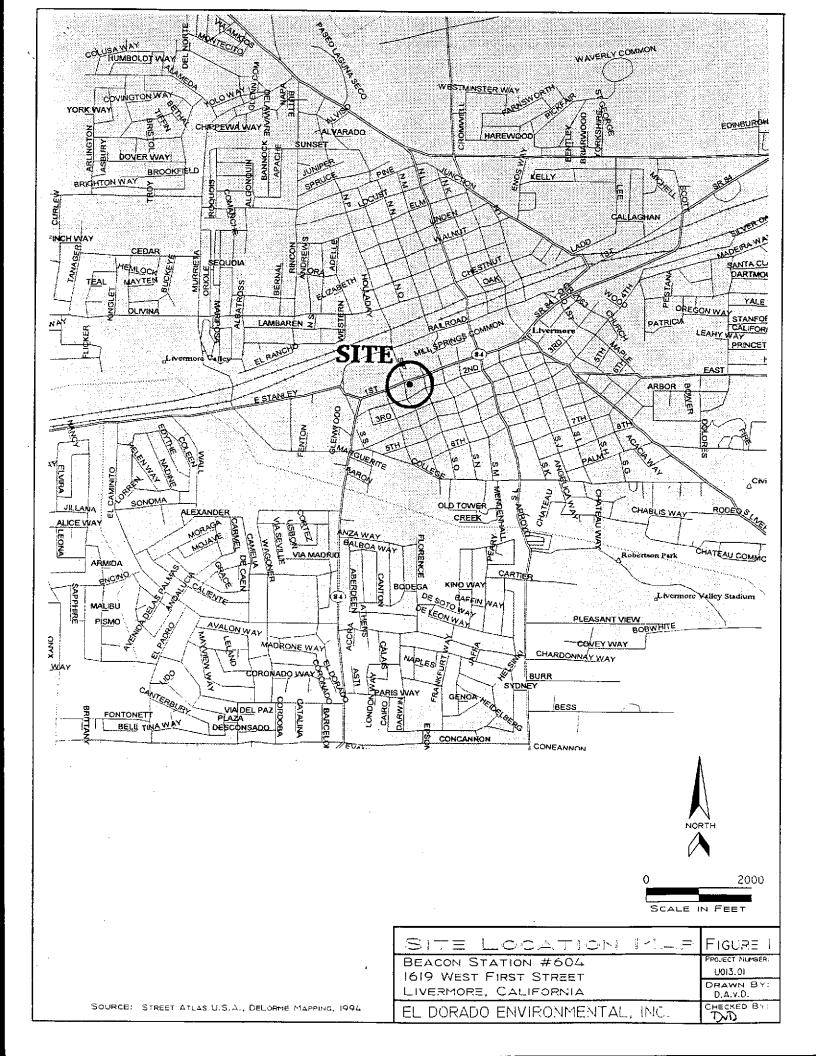
Dale A. van Dam, R.G.

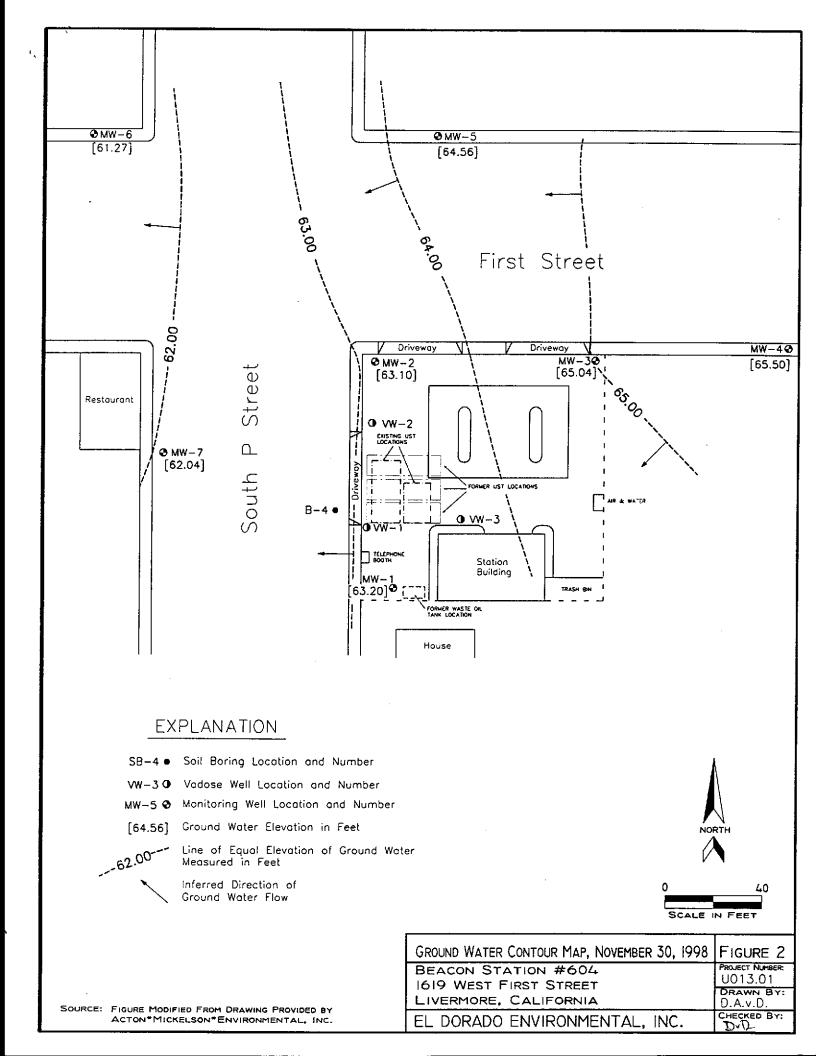
Hydrogeologist

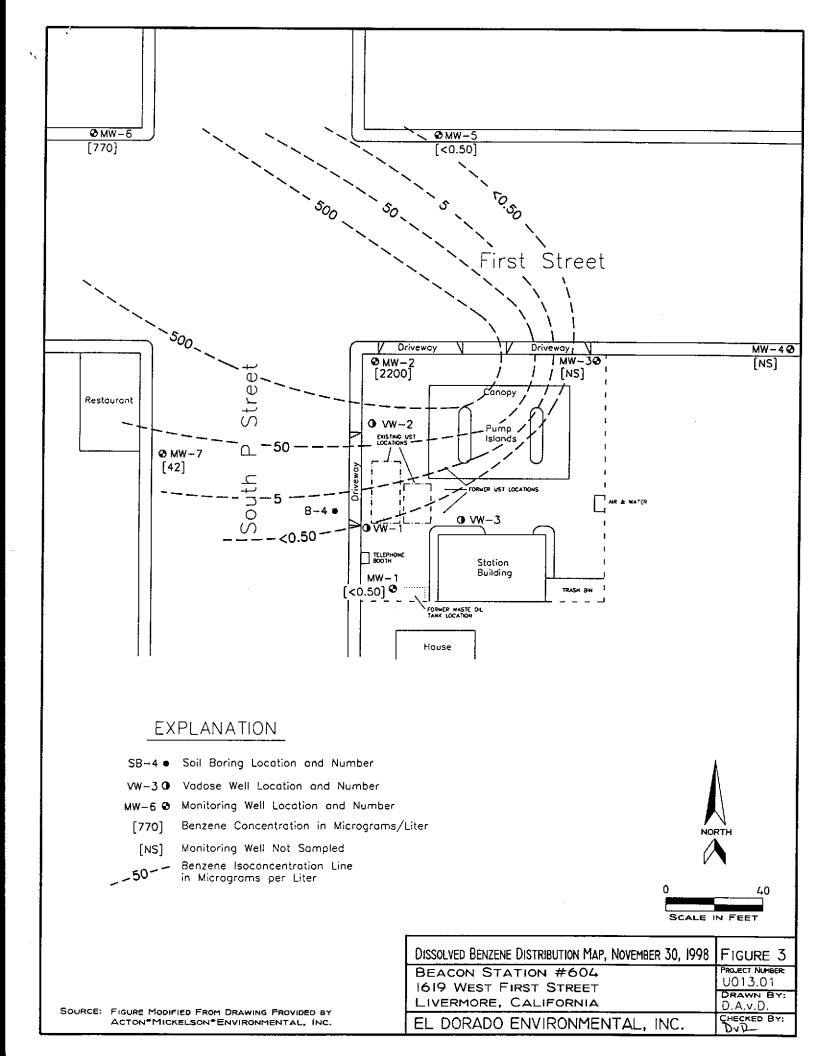
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Attachments









		Depth to				
		Top/Bottom of			Ground Water	
Monitoring	Top of Riser	Screened Interval	Monitoring	Depth to Water	Elevation	Physical
Well	(feet)	(feet)	Date	(feet)	(feet)	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
ļ			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	<i>7</i> 7.14	No Product
			09/16/96	30.04	69.96	No Product
			12/02/96	26.74	73.26	No Product
			03/07/97	20.84	79.16	No Product
			06/12/97	28.71	71.29	No Product
			09/29/97	33.91	66.09	No Product
			12/01/97	34.88	65.12	No Product
			03/19/98	19.83	80.17	No Product
			05/29/98	21.57	78.43	No Product
	ļ		09/15/98	31.68	68.32	No Product
	:		11/30/98	36.80	63.20	No Product

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-2	98.68	34/54	06/01/93 06/22/93 10/06/93 01/13/94 03/30/94 04/25/94 12/14/94 02/10/95 06/15/95 09/26/95 12/15/95 03/21/96 06/13/96 09/16/96 12/02/96 03/07/97 06/12/97 09/29/97 12/01/97 03/19/98 05/29/98 09/15/98 11/30/98	38.02 39.07 43.72 35.85 32.82 34.76 44.33 40.00 32.16 25.93 32.42 29.41 17.47 23.69 31.24 26.90 21.33 29.94 34.22 35.94 20.34 22.63 32.30 36.90	60.66 59.61 54.96 62.83 65.86 63.92 54.35 58.68 66.52 72.75 66.26 69.27 81.21 74.99 67.44 71.78 77.35 68.74 64.46 64.06 79.66 77.37 67.70 63.10	No Product

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 06/22/93 10/06/93 01/13/94 03/30/94 04/25/94 08/12/94 12/14/94 02/10/95 06/15/95 09/26/95 12/15/95 03/21/96 06/13/96 09/16/96 12/02/96 03/07/97 06/12/97 09/29/97 12/01/97 03/19/98 05/29/98 09/15/98 11/30/98	36.18 37.11 41.15 33.95 30.97 32.46 41.72 37.62 29.96 23.66 29.62 27.10 15.85 21.31 28.62 25.55 19.77 27.67 29.60 33.37 18.76 20.64 30.70 34.96	60.90 59.97 55.93 63.13 66.11 64.62 55.36 59.46 67.12 73.42 67.46 69.98 81.23 75.77 68.46 71.53 77.31 69.41 67.48 66.63 81.24 79.36 69.30 65.04	No Product

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-4	99.35	27/47	03/30/94 04/25/94 08/12/94 12/14/94 02/10/95 06/15/95 09/26/95 12/15/95 03/21/96 06/13/96 09/16/96 12/02/96 03/07/97 06/12/97 09/29/97 12/01/97 03/19/98 05/29/98 09/15/98 11/30/98	31.56 32.73 41.61 38.11 30.50 23.63 29.70 27.56 15.63 21.07 28.99 26.04 19.69 28.04 29.91 33.88 18.67 20.16 30.46 34.50	67.79 66.62 57.74 61.24 68.85 75.72 69.65 71.79 83.72 78.28 68.09 71.04 77.39 69.04 67.17 66.12 81.33 79.84 69.54 65.50	No Product

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-5	98.37	27/47	03/30/94 04/25/94 08/12/94 12/14/94 02/10/95 06/15/95 09/26/95 12/15/95 03/21/96 06/13/96 09/16/96 12/02/96 03/07/97 09/29/97 12/01/97 03/19/98 05/29/98 09/15/98 11/30/98	32.07 33.65 42.73 38.89 31.44 24.99 30.20 28.56 16.82 22.61 29.78 26.51 21.91 31.74 34.05 20.93 21.30 31.32 35.44	66.30 64.72 55.64 59.48 66.93 73.38 68.17 69.81 81.55 75.76 68.59 71.86 76.46 66.63 65.95 79.07 78.70 68.68 64.56	No Product

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 04/25/94 08/12/94 12/14/94 02/10/95 06/15/95 09/26/95 12/15/95 03/21/96 06/13/96 09/16/96 12/02/96 03/07/97 06/12/97 09/29/97 12/01/97 03/19/98 05/29/98 09/15/98 11/30/98	33.38 35.49 45.14 40.99 33.34 26.88 33.55 30.32 18.89 24.62 32.64 27.42 22.13 31.02 35.77 37.14 21.10 23.26 33.50 38.73	64.24 62.13 52.48 56.63 64.28 70.74 64.07 67.30 78.73 73.00 65.73 70.95 76.24 67.35 62.60 62.86 78.90 76.74 66.50 61.27	No Product

### 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-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
	İ		06/15/95	25.51	72.52	No Product
			09/26/95	31.43	66.60	No Product
	1		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
			09/16/96	31.35	66.68	No Product
			12/02/96	27.11	70.92	No Product
			03/07/97	21.33	76.70	No Product
			06/12/97	29.90	68.13	No Product
			09/29/97	34.37	63.66	No Product
			12/01/97	36.46	63.54	No Product
			03/19/98	20.33	79.67	No Product
			05/29/98	22.30	77.70	No Product
			09/15/98	32.54	67.46	No Product
			11/30/98	37.96	62.04	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.

Monitoring Well	Monitoring Date	MTBE (1)	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline
MW-1	06/01/93		2200	400	<50	4900	27000
	06/22/93		8000	10000	260	10000	87000
	10/06/93	l	4700	6500	740	5300	40000
	01/13/94	j j	1300	950	110	850	9400
	04/25/94	<b>!</b>	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
ŀ	03/21/96		0.52	< 0.50	< 0.50	0.51	< 50
	06/13/96	<5.0	< 0.50	< 0.50	< 0.50	< 0.50	240*
	09/16/96	<5.0	70	< 0.50	1.0	5.1	720
	12/02/96	<5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 50
	03/07/97	<5.0	6.7	< 0.50	1.2	1.8	600
ļ	06/12/97	<50	180	800	410	1800	18000
i	09/29/97	< 5.0	120	1.5	< 0.50	12	350
į	12/01/97	< 5.0	7.0	< 0.50	< 0.50	< 0.50	< 50
	03/19/98	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 50
ļ	05/29/98	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 50
[	09/15/98	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 50
	11/30/98	<5.0	< 0.50	<0.50	< 0.50	< 0.50	< 50

Monitoring Well	Monitoring Date	MTBE (1)	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline
MW-2	06/01/93 06/22/93 10/06/93 01/13/94 04/25/94 08/12/94 12/14/94 02/10/95 06/15/95 09/26/95 12/15/95 03/21/96 06/13/96 09/16/96 12/02/96 03/07/97 06/12/97 09/29/97 12/01/97 03/19/98 05/29/98 09/15/98 11/30/98	<250 <250 <130 <250 <500 <250 <250 <250 <250 <250 <25	20000 19000 17000 20000 9600 11000 13000 12000 11000 9400 8000 7300 510 4400 1800 7800 1500 900 5600 3900 2200	21000 22000 17000 19000 7300 11000 13000 12000 11000 8300 7700 8800 640 4000 1100 6600 97 37 3600 4700 1200 59	3300 3500 3000 2300 840 2300 2200 2200 1900 2300 2400 1900 180 1300 270 2300 740 860 2000 2400 1400 1400 1200	18000 18000 15000 14000 7800 11000 12000 11000 12000 12000 12000 12000 1300 6100 2000 11000 1800 2400 8300 11000 7800 1500	170000 160000 110000 93000 41000 59000 63000 61000 61000 48000 48000 33000 8600 29000 13000 68000 15000 13000 68000 15000 68000 36000 16000

Monitoring Well	Monitoring Date	MTBE (1)	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline
		ļ.					
MW-3	06/01/93		4.6	< 0.50	<0.50	1.9	270
1.1.1.	06/22/93	l i	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
i	09/26/95		< 0.50	< 0.50	< 0.50	< 0.50	< 50
	12/15/95	i	< 0.50	< 0.50	< 0.50	< 0.50	< 50
1	03/21/96	]	NS	NS	NS	NS	NS
	06/13/96	NS I	NS	NS	NS	NS	NS
	09/16/96	NS	NS	NS	NS	NS	NS
	12/02/96	NS	NS	NS	NS	NS	NS
	03/07/97	NS	NS	NS	NS	NS	NS
	06/12/97	NS	NS	NS	NS	NS	NS
	09/29/97	NS	NS	NS	NS	NS	NS
	12/01/97	NS	NS	NS	NS	NS	NS
	03/19/98	NS	NS	NS	NS	NS	NS
	05/29/98	NS ]	NS	NS	NS	NS	NS
	09/15/98	NS	NS	NS	NS	NS	NS
	11/30/98	NS	NS	NS	NS	NS	NS

Monitoring Well	Monitoring Date	MTBE (1)	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline
}		.					
MW-4	03/30/94 04/25/94 08/12/94 12/14/94 02/10/95 06/15/95 09/26/95 12/15/95 03/21/96 06/13/96 09/16/96 12/02/96 03/07/97 06/12/97 09/29/97 12/01/97 03/19/98 05/29/98	NS NS NS NS NS NS NS	4.2 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 NS NS NS NS NS NS NS NS	15 1.8 <0.50 <0.50 <0.50 <0.50 <0.50 NS NS NS NS NS NS NS	2.5 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 NS NS NS NS NS NS NS NS NS NS	26 2.1 <0.50 <0.50 <0.50 <0.50 <0.50 NS	120 65 < 50 < 50 < 50 < 50 NS NS NS NS NS NS NS
	09/15/98 11/30/98	NS NS	NS NS	NS NS	NS NS	NS NS	NS NS

Monitoring Well	Monitoring Date	MTBE (1)	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline
				]			
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
	06/13/96	< 5.0	38	0.72	1.9	2.0	610
	09/16/96	< 5.0	29	< 0.50	0.95	< 0.50	380
1	12/02/96	<5.0	1.1	0.64	< 0.50	< 0.50	200
	03/07/97	<5.0	74	< 0.50	0.58	1.50	520
	06/12/97	<5.0	5.3	< 0.50	< 0.50	< 0.50	140
	09/29/97	<5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 50
j	12/01/97	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 50
	03/19/98	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 50
	05/29/98	< 5.0	4.1	< 0.50	< 0.50	0.52	540
	09/15/98	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	67
	11/30/98	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	430
				<u> </u>			

Monitoring Well	Monitoring Date	MTBE (1)	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline
				1		,	
MW-6	03/30/94 04/25/94 08/12/94 12/14/94 02/10/95 06/15/95 09/26/95 12/15/95 03/21/96 06/13/96 09/16/96 12/02/96 03/07/97 06/12/97 09/29/97 12/01/97 03/19/98 05/29/98	<250 <250 <500 <250 <100 <100 <100 <100	21000 22000 12000 18000 21000 20000 15000 15000 18000 8600 6400 3000 2000 3900 3500 2100 2900 3500	8600 12000 8100 9500 8400 11000 9600 9000 9800 3300 1800 1100 190 470 370 < 10 460 700	1700 2300 2200 2200 2000 2100 1700 2300 2400 2200 2100 970 520 1600 1600 1200 1100	12000 16000 16000 14000 14000 15000 12000 15000 16000 12000 11000 8300 2300 6200 5200 2200 3400 5200	63000 77000 65000 65000 63000 75000 62000 61000 65000 29000 42000 28000 12000 37000 34000 20000 24000
	09/15/98 11/30/98	<100 <100 <100	1900 770	110 16	1400 820	3000 710	22000 9900

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

Monitoring Well	Monitoring Date	MTBE (1)	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline
MW-7	03/30/94 04/25/94 08/12/94 12/14/94 02/10/95 06/15/95 09/26/95 12/15/95 03/21/96 06/13/96 09/16/96 12/02/96 03/07/97 06/12/97 09/29/97 12/01/97 03/19/98 05/29/98 09/15/98 11/30/98	<50 <25 <50 <25 <5.0 <25 <25 <25 <25 <25 <25 <25	7200 3900 3800 3600 4000 920 200 350 320 98 140 87 35 29 56 24 20 22 15	2400 1000 1400 1200 900 680 150 170 100 19 43 29 19 5.2 9 <2.5 <2.5 7.3 <2.5	1600 940 1300 900 890 740 170 540 730 370 440 290 360 170 340 400 73 290 44	11000 6900 7500 6400 5100 4100 810 1900 2500 620 590 430 470 48 190 250 79 350 5.1	43000 30000 30000 31000 27000 17000 7000 11000 12000 5900 7800 6300 4500 3900 6100 6500 2000 5700 1700 4800

NS = Well Not Sampled on This Date.

\* = Product is not typical gasoline.

MTBE (1) = Methyl-Tertiary-Butyl Ether.

# 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<sup>TM</sup> 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:
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Beacon #604, 1619 West First Street

Livermore, CA

Project No.: 94-604-01

Recorded by:

<u> Hal Hansen</u>

<del>~</del>		1						
Well No	Time	Well Elev. TOC	L	Measured Total Depth	Gr. Water Elevation	Depth to Product	Product Thickness	Comments
mw-1 Mw-2	2:06		36.80	54.12				slight der no han
			36.90	53.76				Betalur odge we cher
mw-3			34.96	52.55				
MW-4			34.50	46-61				
U114-5			35.44	4634				Petralin odor wellor
mw-6			38.73	47.55				Might do in their
MW-7	1:59		37.96	46.61				Sight doe in their
<del></del>								
Notes:								

Notes:

DOULOS ENVIRONMEN	TAL COMPANY		SAMPLING	INFORMATION SHEE
Client: <u>Ultr</u>	amar	S	ampling Date:	11-30-98
Site: Beaco	n #604	· · · · · · · · · · · · · · · · · · ·	Project No.:	95-604-01
<u> 1619 W</u>	est First Str	<u>eet</u> We	ll Designation:	MW-
	ore, CA			•
Is setup of traffic Is there standing was Is top of casing cut Is well cap sealed a Height of well casin Well cover type: 8" 12" BK 12" DWF General condition of	level?		NO (ES	If no, see remark
		•	· · · · · · · · · · · · · · · · · · ·	
	2" PVC b 4" PVC b	ailer ailer	lerSul Dec Cen	ntrifugal pump
Sampled with:				
			6" 8"_	
Purge Vol. Multiplie  Initial Measurement  Time: 206  Depth of well: 54./  Depth to water: 36.	r: 0.16  Rec  Time:  Depth to	0.65 harge Mea	1.47 2.	
Start purge: N	A sam	pling tim	e:2:10_	
Time Temp		рН	Turbidity	Volume
			7	
			/	
Sample appearan	ce:	an	Lock: 1de	1 Spling

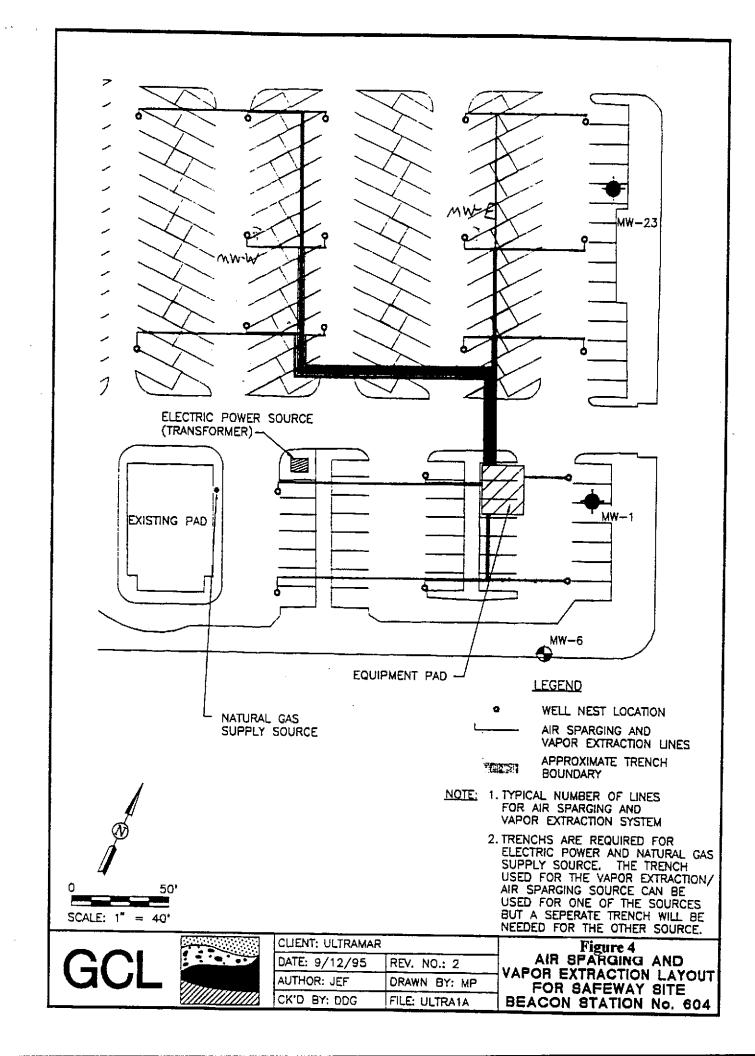
<pre>lquipment rep 2" Locking</pre>		all that apply) Lock #3753:	Note condition of replaced item 7/32 Allenhead:
4" Locking	Cap:	Lock-Dolphin:	9/16 Bolt:
6" Locking	Cap:		Pinned Allenhead (DWP):
Remarks: _			
······································			

Client: <u>Ultrama</u>	r	Sampling	Date: 11-	30-98
Site:Beacon #	604	Proje	ct No.: 9	5-604-01
1619 West	First Street	_ Well Desig	nation: <u>M</u>	w- 2
Livermore		-		
Is setup of traffic con Is there standing water Is top of casing cut le Is well cap sealed and Height of well casing r Well cover type: 8" UV 12" BK 12" DWP General condition of we	in well box? vel? locked? iser (in inche	NO NO	YES Abov YES If	e TOC Below TOC no, see remarks no, see remarks
	2" disposabl 2" PVC baile 4" PVC baile	er er o	Dedica Centr:	rsible pump ated bailer ifugal pump
Sampled with: Dispose Well Diameter:		Terro.	n bailer:_	
Purge Vol. Multiplier:  Initial Measurement  Time: 2:/6  Depth of well: 53-76  Depth to water: 36.96	0.16 0 Rechard Time: Depth to wat	e Measurement	2.61 Calculated Actual	gal/ft.
Start purge: MH	Samplin	g time: 2:/	9_	
Time Temp.	E.C.			Volume
Sample appearance:	<u>Leen</u>	Lock:	Reco.	Flan
Equipment replaced: (Ch 2" Locking Cap: 4" Locking Cap: 6" Locking Cap: Remarks:	Lock #3	753: hin:	7/32 All	replaced item enhead: 6 Bolt: (DWP):
Signature: Nath	<u>/</u>			

	Client:	Ultrama	r	S	Sampling E	ate:	11-30-0	78
	Site:_	Beacon #	604		Projec	t No.:_	95-604-0	1_
		1619 West	First Str	eet We	ell Design	ation:	MW- 5	
	_	Livermore			3	_	•	· .
Is the Is top Is well to Height Well of 12" BK	ere stand of cas l cap so of well cover ty	raffic conding water ing cut lesealed and lesing representation of we	in well b vel? locked? iser (in i 12" CN	ox? nches): " UV I 3	NO NO 12" EI 6" CNI	YES AL YES I YES I MCO	oove TOC E f no, see f no, see _ 8" BK er	elow TOO remarks remarks
Purging Equipment:2" disposable bailerSubmersible pump2" PVC bailerDedicated bailerCentrifugal pump								
S	ampled	with: Disp	posable ba	iler:X	Teflon	bailer	:	
	Well	Diameter:	2"	4"	6"	8"_		
Initia Time:_ Depth Depth	l Measu /:30 of well to wate	ltiplier: <u>rement</u> :	Rech Time: Depth to	harge Mea	1.47 <u>surement</u> *** A C  e: 1:34	alculat Actu	61 gal/med purge:_al purge:_	NA NA
;	Time	Temp.		рн	Turbi		Volume	
		Temp.	н.с.	P.1.	1		1011111	_
					1			-
					V			
Sa	ample a	opearance:	Mea		Lock:	pul	Main	<u>-</u>
2" Lo 4" Lo	ocking ( ocking (	laced: (Ch Cap: Cap:	eck all th Lock Lock-D	at apply) #3753: oolphin:		7/32 <i>I</i>	of replacallenhead: 0/16 Bolt: ead (DWP):	
Remai	rks:							
		11/1	11/1					

C:	lient:	Ultrama	r	s	ampling D	ate: <u>)</u>	-30-	<u>78</u>
	Site:_	Beacon #	604				95-604-	
		1619 West	First Str	e <u>et</u> We	ll Des <b>i</b> gn	ation:_	мw- 6	, 
		Livermore						
Is then Is top Is well Height Well co	re stand of cas l cap so of well	raffic conding water ing cut leveled and leasing relation of we	in well be vel? locked? iser (in in	ox? nches): " IV	NO NO NO 12" E	YES Ab VES I VES I	f no, seef no, seef no, seef	Below TOC e remarks e remarks
		ment: with: Dis						pump wiler pump
		Diameter:		···				
<u>Initia:</u> Time: Depth o	l Measu /:39 of well to wate	ltiplier: rement 47.SS r: 38.7	Recl Time: Depth to	0.65 harge Measwater:	w H	alculat Actu	61 gal, ed purge: al purge:	NA
	Time	Temp.	E.C.	рН	Turbi	dity	Volume	
			/Î		11		1.	
Sa	umple ap	ppearance:	1600	r L	Lock:		26/1/2	1.1
2" Lo	ocking ( ocking ( ocking (	Laced: (Ch Cap: Cap:	Loc)	at apply)  ( #3753:  Oolphin:		7/32	of repla Allenhead 9/16 Bolt ead (DWP)	*
Signatu	re: _	Mu	10/_					

Client	: <u>Ultrama</u>	ir	S	ampling	Date:	11-30	2-98
Site	e: <u>Beacon</u>	604	<del></del>			95-604-	
	1619 West	: First Str	<u>eet</u> We	ll Desig	nation:_	MW-	<u>7</u>
	Livermore					. <u>.</u>	·
Is top of or Is well can Height of Well cover	traffic cortanding water casing cut less sealed and vell casing ratype: 8" UN type: DWP ddition of we	evel? locked? riser (in i	nches):	NO NO 12" E	YES I	f no, se f no, se	ee remarks ee remarks sK
		2" PVC b 4" PVC b	ailer ailer	- -	Ded Cen	mersible icated k trifugal	Daller
Sample	d with: Dis	posable ba	iler: $X$	_ Teflo	n bailer		· · · · · · · · · · · · · · · · · · ·
Wel	l Diameter:	2"	4"	6"	_ 8"	<u></u>	
Initial Mea Time: /: Depth of we Depth to wa	Multiplier: Surement 9 11: 46.67 ter: 37.9.	Rec Time: Depth to	0.65 harge Mea  Water:  pling time	surement AA	Calculat Actu	61 gal ed purge al purge	MA MA
Tim	e Temp.	E.C.	рН	Turb	idity	Volume	
		1/6		//			
Sample	appearance:			Lock:		26/2	in
2" Lockin	eplaced: (Cl g Cap: g Cap: g Cap:	_ Loc	at apply) #3753: oolphin:		7/32 A	Allenhead	aced item d: t: ):
Signature:	Ma	11/					



<u></u>	Client: Ultranan Site: Beacon 604				Sampling Date: /	12-16-98
	Site:	Beacon	504			:
	_	1619 Fm	at st	W	ell Designation	
	-	Sivempre	2			<u>,</u>
Is the Is to Is we: Height	ere star p of cas ll cap s t of wel	craffic conding water sing cut less aled and locasing representation of well-arised to the condition of the conditi	in well   evel? locked?	box?	NO YES NO YES	time: hours Above TOC Below TOC If no, see remarks If no, see remarks 8" BK ther Fair Poor
Purgin	ng Equip	oment:	2" dispo 2" PVC h 4" PVC h	osable bai bailer bailer	lerSi	ubmersible pump edicated bailer entrifugal pump
			_		Teflon baile	er: luba, &
Time:_ Depth Depth	<i>Q 5</i> of well to wate	rement : 64.83 r: <u>16.24</u> 815	Time:	water: 3	Calcula FS4 Act	ited purge:
	Time	Temp.	E.C.	pН	Turbidity	Volume
	816	624	924	714		. /
	817	61,1	9)4	710	San and a second	2
	819	603	708	702		3
	820	61.1	7 36	597		. 4
Sa	ample ar	pearance:	clea		Lock: Man	l
2" Lo 4" Lo	ocking (	aced: (Ch Cap: Cap:	Loc)	nat apply) c #3753: Dolphin:	7/32	n of replaced item Allenhead: 9/16 Bolt: head (DWP):
Remar	ks:					
Signatu	ıre:	I fall	<i></i>			

Client: Ultranan					Sampling Date: 12-16-98			
	Site:	Beacon	604	· 				
		1619 Fi	not lit	W	Well Designation: MW-E			
		Liver	norl Ca			•		
Is to Is we Heigh Well 12" E	etup of nere sta op of ca ell cap :	traffic conding water sing cut less and less and less and less are set to the condition of well are to the condition of well are to the condition of well are the condition of the conditio	ontrol devier in well evel? locked? riser (in V112; C. ellhead as	ces requi box? inches): 2" UV NI sembly:	red? NO YES NO YES NO YES NO YES 12" EMCO 36" CNI	time: hour Above TOC Below T If no, see remar If no, see remar		
		<u></u>	2" PVC 1	bailer bailer	D∈	edicated bailer entrifugal pump		
	Sampled				-1	er: X-luby		
			**************************************		6"8"			
Time: Depth Depth	al Measu 750 of well to wate	ltiplier: rement : 64,75 r: 36.71	Rec Time: Depth to	water:	1.47 2 surement Calcula Act	.61 gal/ft. ted purge: ual purge:		
	Time	Temp.	E.C.			<del></del>		
				Н	Turbidity	Volume		
	75€	93.0	1106	73/		/		
	757	621	1032	726		2		
	758	62,4	1014	722		3		
	800	61.9	982	72/		4		
S	ample ar	pearance:	clear		Lock:	e .		
4" L	ockind C	ap:	neck all th Lock Lock-I	at apply) ( #3753: Dolphin:	7/32	n of replaced item Allenhead:		
Reman	rks:	210	1					
Signatu	ıre:	2 In 1911						

#### ATTACHMENT C

LABORATORY REPORT AND CHAIN-OF-CUSTODY FORM



Date: 12/18/98

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

Subject: 5 Water Samples
Project Name: Beacon 604
Project Number: 94-604-01

Dear Mr. van Dam,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,



Date: 12/18/98

Project Name : Beacon 604
Project Number : 94-604-01

Sample: MW-1

Matrix: Water

Sample Date :11/30/98

Sample Date .1 1/30/96		11-461			
Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8020	12/06/98
Toluene	< 0.50	0.50	ug/L	EPA 8020	12/06/98
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8020	12/06/98
Total Xylenes	< 0.50	0.50	ug/L	EPA 8020	12/06/98
Methyl-t-butyl ether	< 5.0	5.0	ug/L	EPA 8020	12/06/98
TPH as Gasoline	< 50	50	ug/L	M EPA 8015	12/06/98
aaa-Trifluorotoluene (8020 Surrogate)	104		% Recovery	EPA 8020	12/06/98
aaa-Trifluorotoluene (Gasoline Surrogate)	94.5		% Recovery	M EPA 8015	12/06/98

Sample: MW-2

Matrix: Water

Sample Date :11/30/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	2200	25	ug/L	EPA 8020	12/07/98
Toluene	59	25	ug/L	EPA 8020	12/07/98
Ethylbenzene	1200	25	ug/L	EPA 8020	12/07/98
Total Xylenes	1500	25	ug/L	EPA 8020	12/07/98
Methyl-t-butyl ether	< 250	250	ug/L	EPA 8020	12/07/98
TPH as Gasoline	16000	2500	ug/L	M EPA 8015	12/07/98
aaa-Trifluorotoluene (8020 Surrogate)	104		% Recovery	EPA 8020	12/07/98
aaa-Trifluorotoluene (Gasoline Surrogate)	98.1		% Recovery	M EPA 8015	12/07/98

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800



Date: 12/18/98

Project Name : Beacon 604
Project Number : 94-604-01

Sample: MW-5

Matrix: Water

Sample Date :11/30/98

Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
< 0.50	0.50	ug/L	EPA 8260B	12/09/98
< 0.50	0.50	ug/L	EPA 8260B	12/09/98
< 0.50	0.50	ug/L	EPA 8260B	12/09/98
< 0.50	0.50	ug/L	EPA 8260B	12/09/98
< 5.0	5.0	ug/L	EPA 8260B	12/09/98
430	50	ug/L	EPA 8260B	12/09/98
99.7		% Recovery	EPA 8260B	12/09/98
100		% Recovery	EPA 8260B	12/09/98
	Value < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 5.0  430	Measured Value         Reporting Limit           < 0.50         0.50           < 0.50         0.50           < 0.50         0.50           < 0.50         0.50           < 5.0         5.0           430         50           99.7         99.7	Measured Value         Reporting Limit         Units           < 0.50         0.50         ug/L           < 0.50         0.50         ug/L           < 0.50         0.50         ug/L           < 0.50         0.50         ug/L           < 5.0         5.0         ug/L           430         50         ug/L           99.7         % Recovery	Measured Value         Reporting Limit         Units         Analysis Method           < 0.50         0.50         ug/L         EPA 8260B           < 5.0         5.0         ug/L         EPA 8260B           430         50         ug/L         EPA 8260B           99.7         % Recovery         EPA 8260B

Sample: MW-6

Matrix: Water

Sample Date :11/30/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	770	10	ug/L	EPA 8020	12/07/98
Toluene	16	10	ug/L	EPA 8020	12/07/98
Ethylbenzene	820	10	ug/L	EPA 8020	12/07/98
Total Xylenes	710	10	ug/L	EPA 8020	12/07/98
Methyl-t-butyl ether	< 100	100	ug/L	EPA 8020	12/07/98
TPH as Gasoline	9900	1000	ug/L	M EPA 8015	12/07/98
aaa-Trifluorotoluene (8020 Surrogate)	109		% Recovery	EPA 8020	12/07/98
aaa-Trifluorotoluene (Gasoline Surrogate)	102		% Recovery	M EPA 8015	12/07/98

Approved By: Joe Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800



Date: 12/18/98

Project Name : Beacon 604

Project Number: 94-604-01

Sample: MW-7

Matrix: Water

Sample Date :11/30/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	42	2.5	ug/L	EPA 8020	12/07/98
Toluene	12	2.5	ug/L	EPA 8020	12/07/98
Ethylbenzene	270	2.5	ug/L	EPA 8020	12/07/98
Total Xylenes	640	2.5	ug/L	EPA 8020	12/07/98
Methyl-t-butyl ether	< 25	25	ug/L	EPA 8020	12/07/98
TPH as Gasoline	4800	250	ug/L	M EPA 8015	12/07/98
aaa-Trifluorotoluene (8020 Surrogate) aaa-Trifluorotoluene (Gasoline Surrogate)	103 109		% Recovery % Recovery	EPA 8020 M EPA 8015	12/07/98 12/07/98

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800



#### Ultramar Inc. **CHAIN OF CUSTODY REPORT**

BEACON

32-8003 1/90

12837 Beacon Station No. Sampler (Print Name) Form No. Date 11-30-98 1011 604 Project No. **ANALYSES** Hal Hans en Sampler (Signature) Standard TAT Hallanse Affiliation Doulos Env 94-604-01 Project Location BTEX TPH (gasoline) TPH (diesel) Livermore Sample No./Identification Date Time Lab No. **REMARKS** MW-1 11-30-08 210 -01 MW-2 2/9 -0 Z MW-5 134 -03 MW-6 144 00 MW-7 201 -05 Relinquished by: (Signature/Affiliation) Date Received by: (Signature/Affiliation) Time Date Time Hal Hanser Danlos Env 12/1 1454 Relinquished by: (Signature/Affiliation) Date Time Received by: (Signature/Affiliation) Date Time Relinquished by: (Signature/Affiliation) Date Time Received by: (Signature/Affiliation) Date Time 14/54 Report To: Dale wan Dam Bill to: ULTRAMAR INC. 525 West Third Street Hanford, CA 93230
Attention: Tany Fax WHITE: Return to Client with Report YELLOW: Laboratory Copy PINK: Originator Copy