El Dorado Environmental, Inc.

2221 Goldorado Trail, El Dorado, California 95623

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

December 19, 1998

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

Subject: **Third 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 September 15, 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 10.09 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:

- 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, MW-5, MW-6, and 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.

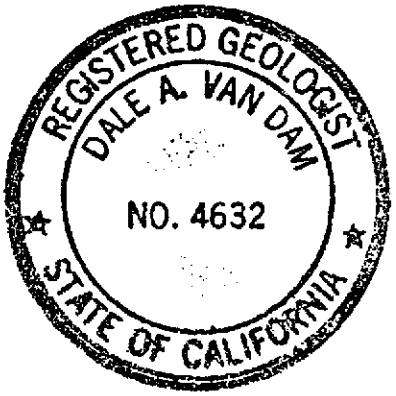
Regards,

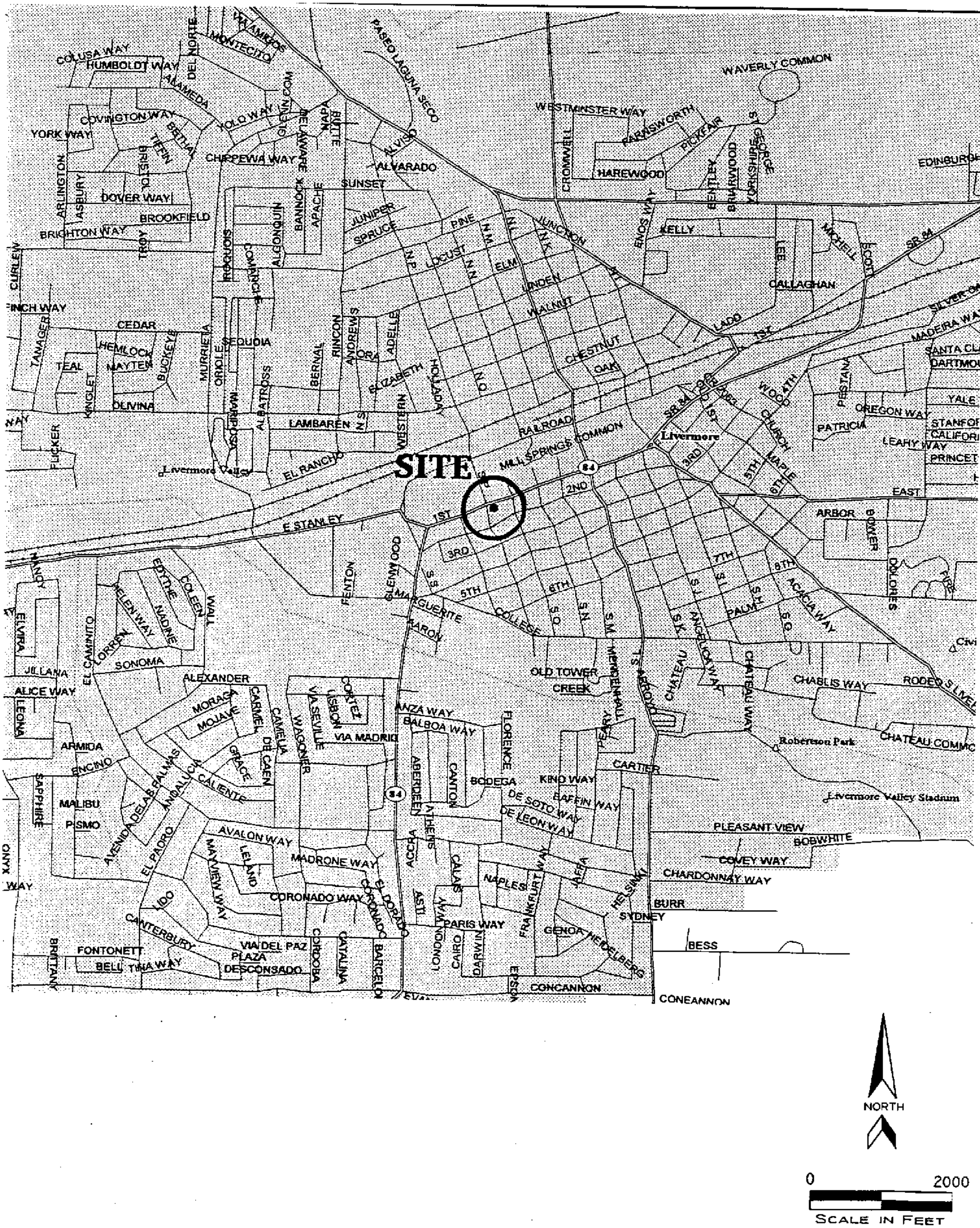
EL DORADO ENVIRONMENTAL, INC.

Dale A. van Dam, R.G.
Hydrogeologist

DAvD/davd

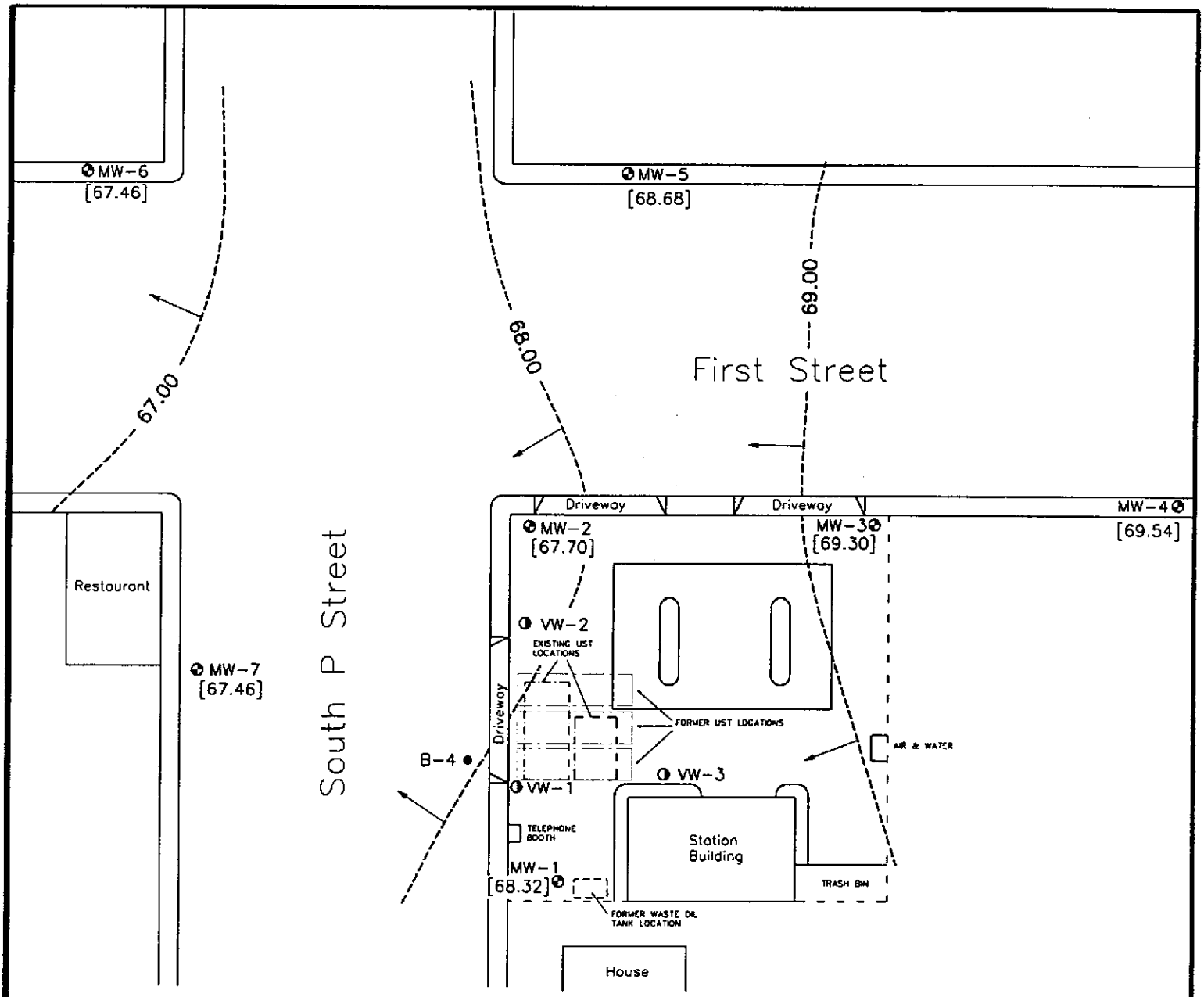
Attachments





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

[68.68] Ground Water Elevation in Feet

69.00 Line of Equal Elevation of Ground Water Measured in Feet

Inferred Direction of Ground Water Flow

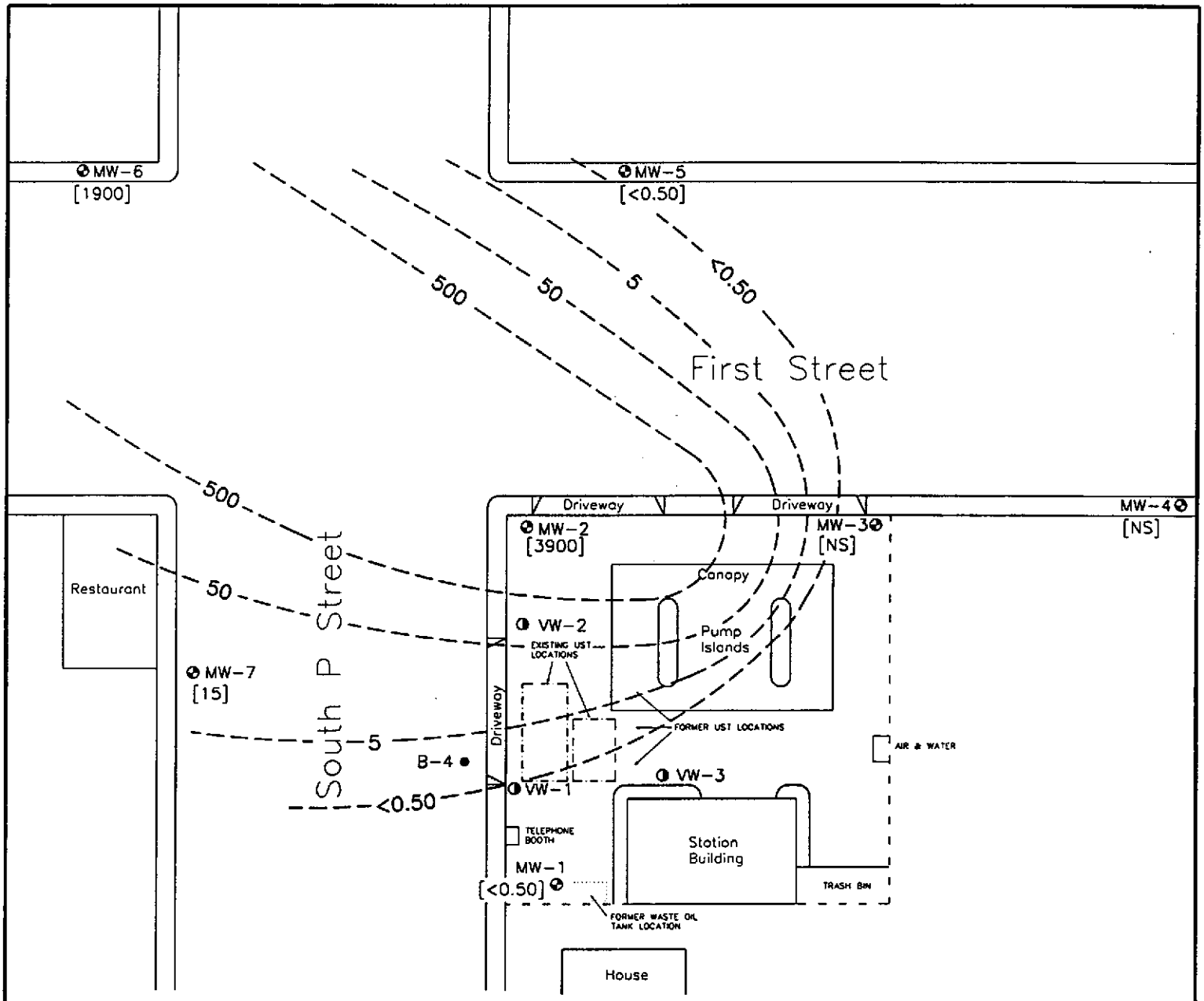
NORTH

0 40

SCALE IN FEET

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

GROUND WATER CONTOUR MAP, SEPTEMBER 15, 1998	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-6 ⊘	Monitoring Well Location and Number
[2900]	Benzene Concentration in Micrograms/Liter
[NS]	Monitoring Well Not Sampled
50	Benzene Isoconcentration Line in Micrograms per Liter

NORTH

0 40

SCALE IN FEET

DISSOLVED BENZENE DISTRIBUTION MAP, SEPTEMBER 15, 1998	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

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

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
			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
			09/15/98	31.68	68.32	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-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
			09/16/96	31.24	67.44	No Product
			12/02/96	26.90	71.78	No Product
			03/07/97	21.33	77.35	No Product
			06/12/97	29.94	68.74	No Product
			09/29/97	34.22	64.46	No Product
			12/01/97	35.94	64.06	No Product
			03/19/98	20.34	79.66	No Product
			05/29/98	22.63	77.37	No Product
			09/15/98	32.30	67.70	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
			09/16/96	28.62	68.46	No Product
			12/02/96	25.55	71.53	No Product
			03/07/97	19.77	77.31	No Product
			06/12/97	27.67	69.41	No Product
			09/29/97	29.60	67.48	No Product
			12/01/97	33.37	66.63	No Product
			03/19/98	18.76	81.24	No Product
			05/29/98	20.64	79.36	No Product
			09/15/98	30.70	69.30	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
			09/16/96	28.99	68.09	No Product
			12/02/96	26.04	71.04	No Product
			03/07/97	19.69	77.39	No Product
			06/12/97	28.04	69.04	No Product
			09/29/97	29.91	67.17	No Product
			12/01/97	33.88	66.12	No Product
			03/19/98	18.67	81.33	No Product
			05/29/98	20.16	79.84	No Product
			09/15/98	30.46	69.54	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-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
			09/16/96	29.78	68.59	No Product
			12/02/96	26.51	71.86	No Product
			03/07/97	21.91	76.46	No Product
			09/29/97	31.74	66.63	No Product
			12/01/97	34.05	65.95	No Product
			03/19/98	20.93	79.07	No Product
			05/29/98	21.30	78.70	No Product
			09/15/98	31.32	68.68	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
			09/16/96	32.64	65.73	No Product
			12/02/96	27.42	70.95	No Product
			03/07/97	22.13	76.24	No Product
			06/12/97	31.02	67.35	No Product
			09/29/97	35.77	62.60	No Product
			12/01/97	37.14	62.86	No Product
			03/19/98	21.10	78.90	No Product
			05/29/98	23.26	76.74	No Product
			09/15/98	33.50	66.50	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
			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

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.

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	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		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
	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
	06/12/97	<50	180	800	410	1800	18000
	09/29/97	<5.0	120	1.5	<0.50	12	350
	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
	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

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	MTBE (1)	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline
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
	06/13/96	<250	7300	8800	1900	12000	33000
	09/16/96	<250	510	640	180	1300	8600
	12/02/96	<130	4400	4000	1300	6100	29000
	03/07/97	<250	1800	1100	270	2000	13000
	06/12/97	<500	7800	6600	2300	11000	68000
	09/29/97	<250	1500	97	740	1800	15000
	12/01/97	<250	900	37	860	2400	13000
	03/19/98	<250	5000	3600	2000	8300	42000
	05/29/98	<250	5600	4700	2400	11000	68000
	09/15/98	<250	3900	1200	1400	7800	36000

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	MTBE (1)	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline
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	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

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	MTBE (1)	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline
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	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
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
	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
	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

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	MTBE (1)	Benzene	Toluene	Ethylbenzene	Xylenes	Total Petroleum Hydrocarbons as Gasoline
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
	06/13/96	<250	8600	3300	2200	12000	29000
	09/16/96	<250	6400	1800	2100	11000	42000
	12/02/96	<500	3000	1100	970	8300	28000
	03/07/97	<250	2000	190	520	2300	12000
	06/12/97	<100	3900	470	1600	6200	37000
	09/29/97	<100	3500	370	1600	5200	34000
	12/01/97	<100	2100	<10	1200	2200	20000
	03/19/98	<100	2900	460	1100	3400	24000
	05/29/98	<100	3500	700	1800	5200	38000
	09/15/98	<100	1900	110	1400	3000	22000
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
	06/13/96	<50	98	19	370	620	5900
	09/16/96	<25	140	43	440	590	7800
	12/02/96	<50	87	29	290	430	6300
	03/07/97	<25	35	19	360	470	4500
	06/12/97	<5.0	29	5.2	170	48	3900
	09/29/97	<25	56	9	340	190	6100
	12/01/97	<25	24	<2.5	400	250	6500
	03/19/98	<25	20	<2.5	73	79	2000
	05/29/98	<25	22	7.3	290	350	5700
	09/15/98	<25	15	<2.5	44	5.1	1700

NS = Well Not Sampled on This Date.
* = Product is not typical gasoline.
MTBE (1) = Methyl-Tertiary-Butyl Ether.

See notes at end of table

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: 9-15-98

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	2:30		31.68	54.13				slight odor no sheen
MW-2	2:33		32.30	53.77				Petroleum odor no sheen
MW-3	2:36		30.70	59.54				
MW-4	2:25		30.46	46.66				
MW-5	2:15		31.32	46.33				Petroleum odor no sheen
MW-6	2:18		33.50	47.52				slight odor no sheen
MW-7	2:20		32.54	46.60				slight odor no sheen

Notes:

DOULOS ENVIRONMENTAL COMPANY — SAMPLING INFORMATION SHEET

Client: Ultramar — Sampling Date: 9-15-98

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): 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 _____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: 2:30
Depth of well: 54.13
Depth to water: 31.68

Recharge Measurement
Time: NP
Depth to water: NP

Calculated purge: NP
Actual purge: NP

Start purge: NA Sampling time: 3:06

Time	Temp.	E.C.	pH	Turbidity	Volume

Sample appearance: clear Lock: [illegible]

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: [signature]

DOULOS ENVIRONMENTAL COMPANY — SAMPLING INFORMATION SHEET

Client: Ultramar — Sampling Date: 9-15-98

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 _____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: 2:33
Depth of well: 53.77
Depth to water: 31.30

Recharge Measurement
Time: NA
Depth to water: NA

Calculated purge: NA
Actual purge: NA

Start purge: NA Sampling time: 3:16

Time	Temp.	E.C.	pH	Turbidity	Volume

Sample appearance: Brown Lock: OK

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: _____

DOULOS ENVIRONMENTAL COMPANY SAMPLING INFORMATION SHEET

Client: Ultramar Sampling Date: 9-15-98

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 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 _____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: 2:15 Depth of well: 46.33 Depth to water: 31.32

Recharge Measurement: Time: N/A Depth to water: N/A

Calculated purge: N/A Actual purge: N/A

Start purge: N/A Sampling time: 2:41

Time	Temp.	E.C.	pH	Turbidity	Volume

Sample appearance: Clear Lock: Combination

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: _____

DOULOS ENVIRONMENTAL COMPANY — SAMPLING INFORMATION SHEET

Client: Ultramar — Sampling Date: 9-15-98

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
_____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: 2:18
Depth of well: 47.52
Depth to water: 33.50

Recharge Measurement
Time: N/A
Depth to water: N/A

Calculated purge: N/A
Actual purge: N/A

Start purge: N/A Sampling time: 2:49

Time	Temp.	E.C.	pH	Turbidity	Volume

Sample appearance: _____ Lock: _____

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: _____

DOULOS ENVIRONMENTAL COMPANY — SAMPLING INFORMATION SHEET

Client: Ultramar — Sampling Date: 9-15-98

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): 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 _____Submersible pump
_____2" PVC bailer _____Dedicated bailer
_____4" PVC bailer _____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: 2:20 Depth of well: 46.60 Depth to water: 32.54

Recharge Measurement: Time: NA Depth to water: NA

Calculated purge: NA Actual purge: NA

Start purge: NA Sampling time: 2:55

Time	Temp.	E.C.	pH	Turbidity	Volume

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: _____

ATTACHMENT C

LABORATORY REPORT AND CHAIN-OF-CUSTODY FORM

KIFF ANALYTICAL LLC

Report Number : 12299
Date : 09/28/98

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

Subject : 5 Water Samples
Project Name : Beacon 604
Project Number : 98-604-01

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,

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 12299

Date : 09/28/98

Project Name : **Beacon 604**

Project Number : **98-604-01**

Sample : **MW-1** Matrix : Water

Sample Date :09/15/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8020	09/22/98
Toluene	**< 0.50**	0.50	ug/L	EPA 8020	09/22/98
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8020	09/22/98
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8020	09/22/98
Methyl-t-butyl ether	**< 5.0**	5.0	ug/L	EPA 8020	09/22/98
TPH as Gasoline	**< 50**	50	ug/L	M EPA 8015	09/22/98
aaa-Trifluorotoluene (8020 Surrogate)	102		% Recovery	EPA 8020	09/22/98
aaa-Trifluorotoluene (Gasoline Surrogate)	92.9		% Recovery	M EPA 8015	09/22/98

Sample : **MW-2** Matrix : Water

Sample Date :09/15/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**3900**	25	ug/L	EPA 8020	09/22/98
Toluene	**1200**	25	ug/L	EPA 8020	09/22/98
Ethylbenzene	**1400**	25	ug/L	EPA 8020	09/22/98
Total Xylenes	**7800**	25	ug/L	EPA 8020	09/22/98
Methyl-t-butyl ether	**< 250**	250	ug/L	EPA 8020	09/22/98
TPH as Gasoline	**36000**	2500	ug/L	M EPA 8015	09/22/98
aaa-Trifluorotoluene (8020 Surrogate)	106		% Recovery	EPA 8020	09/22/98
aaa-Trifluorotoluene (Gasoline Surrogate)	96.6		% Recovery	M EPA 8015	09/22/98

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 12299

Date : 09/28/98

Project Name : **Beacon 604**

Project Number : **98-604-01**

Sample : **MW-5** Matrix : Water

Sample Date :09/15/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	09/24/98
Toluene	**< 0.50**	0.50	ug/L	EPA 8020	09/22/98
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8020	09/22/98
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8020	09/22/98
Methyl-t-butyl ether	**< 5.0**	5.0	ug/L	EPA 8020	09/22/98
TPH as Gasoline	**67**	50	ug/L	M EPA 8015	09/22/98
aaa-Trifluorotoluene (8020 Surrogate)	102		% Recovery	EPA 8020	09/22/98
aaa-Trifluorotoluene (Gasoline Surrogate)	95.0		% Recovery	M EPA 8015	09/22/98

Sample : **MW-6** Matrix : Water

Sample Date :09/15/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1900**	10	ug/L	EPA 8020	09/22/98
Toluene	**110**	10	ug/L	EPA 8020	09/22/98
Ethylbenzene	**1400**	10	ug/L	EPA 8020	09/22/98
Total Xylenes	**3000**	10	ug/L	EPA 8020	09/22/98
Methyl-t-butyl ether	**< 100**	100	ug/L	EPA 8020	09/22/98
TPH as Gasoline	**22000**	1000	ug/L	M EPA 8015	09/22/98
aaa-Trifluorotoluene (8020 Surrogate)	103		% Recovery	EPA 8020	09/22/98
aaa-Trifluorotoluene (Gasoline Surrogate)	103		% Recovery	M EPA 8015	09/22/98

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 12299
Date : 09/28/98

Project Name : **Beacon 604**
Project Number : **98-604-01**

Sample : **MW-7** Matrix : Water
Sample Date :09/15/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**15**	2.5	ug/L	EPA 8020	09/22/98
Toluene	**< 2.5**	2.5	ug/L	EPA 8020	09/22/98
Ethylbenzene	**44**	2.5	ug/L	EPA 8020	09/22/98
Total Xylenes	**5.1**	2.5	ug/L	EPA 8020	09/22/98
Methyl-t-butyl ether	**< 25**	25	ug/L	EPA 8020	09/22/98
TPH as Gasoline	**1700**	250	ug/L	M EPA 8015	09/22/98
aaa-Trifluorotoluene (8020 Surrogate)	103		% Recovery	EPA 8020	09/22/98
aaa-Trifluorotoluene (Gasoline Surrogate)	99.0		% Recovery	M EPA 8015	09/22/98

Approved By: Joel Kiff

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

Ultramar Inc.
CHAIN OF CUSTODY REPORT 12299

BEACON

Beacon Station No.	Sampler (Print Name)			ANALYSES									Date	Form No.
604	Hal Hansen												9-15-98	1 of 1
Project No.	Sampler (Signature)												Standard TAT	
94-604-01	Hal Hansen													
Project Location	Affiliation													
Livermore	Delta Env.													
Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)						No. of Containers	REMARKS	
MW-1	9-15-98	306	-01	X	X							2		
MW-2		316	-02											
MW-5		241	-03											
MW-6		249	-04											
MW-7		255	-05											

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Hal Hansen Delta Env.					
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
			Justin Desch	9/21/98	1430

Report To: Debra van Dam

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

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

32-6003 1/90