Kelleher & Associates
Environmental Management

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April 22, 2003

Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502

Cecil Fox
San Francisco Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Site: TESORO STATION # 67076 (former Beacon # 3604), 1619 West First Street, Livermore, CA

Dear Ms. Chu and Mr. Fox:

Please find enclosed herewith a copy of the following technical report prepared by TRC, Concord, CA:

Quarterly Groundwater Monitoring Report First Quarter 2003 dated April 10, 2003.

As an authorized representative of Tesoro Petroleum and Refining Company (Tesoro), I have reviewed the enclosed report and declare under penalty of perjury that to the best of my knowledge the information contained in the report is true and correct.

The report covers the groundwater-monitoring event Doulas Environmental conducted on March 4, 2003 during which they sounded seven monitoring wells, purged and sampled four wells, and provided for certified analyses of total petroleum hydrocarbon constituents, BTEX, and MTBE via EPA Method 8260B. The next quarterly monitoring event is scheduled for the second quarter 2003.

With respect to Alameda County correspondence dated January 18, 2002, Tesoro has tentatively contracted TRC to install three additional offsite wells as called for in the Doulas Environmental April 2001 "Workplan for Additional Subsurface Assessment Activities." We are currently assisting Tesoro in entering into a site access agreement with the new owner of the associated property (the property changed hands last year). We anticipate that TRC will complete the associated well-installation work during the second quarter 2003. During the fourth quarter 2002, we explored the possibility of using existing monitoring wells in the former Arcade Shopping Center (now Vintner Shopping Center) to complete the delineation of the lateral extent of contamination rather than installing new wells. It has recently come to our attention, however, that all remaining shopping center wells were removed last year.

Sincerely,

Brian T. Kelleher
Project Coordinator
Enclosure: CC with enclosure: Robert Donovan, Tesoro; Glenn Dembroff, Ultramar; Tracy Walker, TRC (cover letter only).

TRC

Customer-Focused Solutions

April 10, 2003 Project No. 41-0362-03

Mr. Robert Donovan
Tesoro Refining and Marketing Company
3450 South 344th Way #100
Auburn, Washington 98001

SITE: TESORO STATION 67076
FORMER BEACON STATION 3604
1619 WEST FIRST STREET
LIVERMORE, CALIFORNIA

RE: FIRST QUARTER 2003 GROUNDWATER MONITORING REPORT

Dear Mr. Donovan:

On Behalf of Tesoro Refining and Marketing Company (Tesoro), TRC has prepared this report to document the results of the Fourth Quarter groundwater monitoring event conducted on March 4, 2003 at the subject site (Figure 1). The monitoring, conducted by Doulos Environmental (Doulos), included measurements of depth to groundwater, subjective analysis for the presence or absence of free product, groundwater purging, and collection of groundwater samples. According to Doulos, all field activities were conducted in accordance with the Field Procedures described in Attachment A.

1.0 GROUNDWATER ELEVATIONS

Pursuant to Alameda County Health Care correspondence dated January 18, 2002, Doulos sounds all wells and purges and samples wells MW-2, -6, and -7 on a quarterly basis. Well MW-5 is sampled semi-annually during the First and Third quarters. Wells MW-1, -3, and -4 are no longer sampled.

Prior to purging, Doulos collected depth-to-groundwater measurements. Copies of Doulos' field data sheets are included in Attachment B. Groundwater elevation data collected since June 1993 are summarized in Table 1. Based on groundwater levels measured on March 4, 2003, groundwater flows toward the west at a gradient of 0.02 foot per foot (Figure 2). Groundwater levels have increased an average of 3.34 feet as compared to the Fourth Quarter 2002 monitoring event.

5052 Commercial Circle • Concord, California 94520-1248
Telephone 925-688-1200 • Fax 925-688-0388

2.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater samples were collected from three monitoring wells (MW-2, MW-6 and MW-7) on March 4, 2003. All groundwater samples were analyzed using EPA Method 8260B for concentrations of:

- total petroleum hydrocarbons as gasoline (TPH-G);
- benzene, toluene, ethyl benzene, and total xylenes (BTEX); and
- methyl tert butyl ether (MTBE).

The distribution of dissolved-phase benzene and MTBE based on the current data is shown in Figures 3 and 4, respectively.

Analytical results collected since June 1993 are summarized in Table 1. The laboratory reports and chain-of-custody forms for the current sampling event are contained in Attachment C.

3.0 CONCLUSIONS

Benzene was detected in all four wells sampled. MW-6 had the highest benzene concentration detected at 1,700 micrograms per liter (µg/l). These levels are consistent with historical data.

TPH-G was detected in all four wells sampled. MW-6 had the highest TPH-G concentration detected at 16,000 µg/l. These levels are consistent with historical data.

MTBE was detected in MW-2, MW-5 and MW-6. The highest MTBE concentration was detected at MW-6 (7,700µg/l). MTBE was not detected in MW-7 above the reporting limit. These levels are consistent with historical data.

4.0 RECOMMENDATIONS

TRC recommends that groundwater monitoring and sampling of selected wells be continued to assess plume stability and concentration trends at key wells.

The interpretations and/or conclusions that may be contained within this report represent our professional opinions. These opinions are based on currently available information. Other than this, no warranty is implied or intended. This report has been prepared solely for the use of Tesoro Refining and Marketing Company. Any reliance on this report by third parties will be at such parties' sole risk.

TRC recommends you submit copies of this report to:

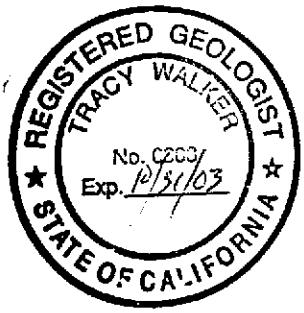
1. Ms. Eva Chu
   Alameda County Health Care Services Agency
   1131 Harbor Bay Parkway, Room 250
   Alameda, CA 94502

2. Mr. Cecil Fox
   Regional Water Quality Control Board
   San Francisco Bay Region
   1515 Clay Street, Suite 1400
   Oakland, CA 94612

If you have any questions or comments, please contact me at (925) 688-2476.

Sincerely,
TRC

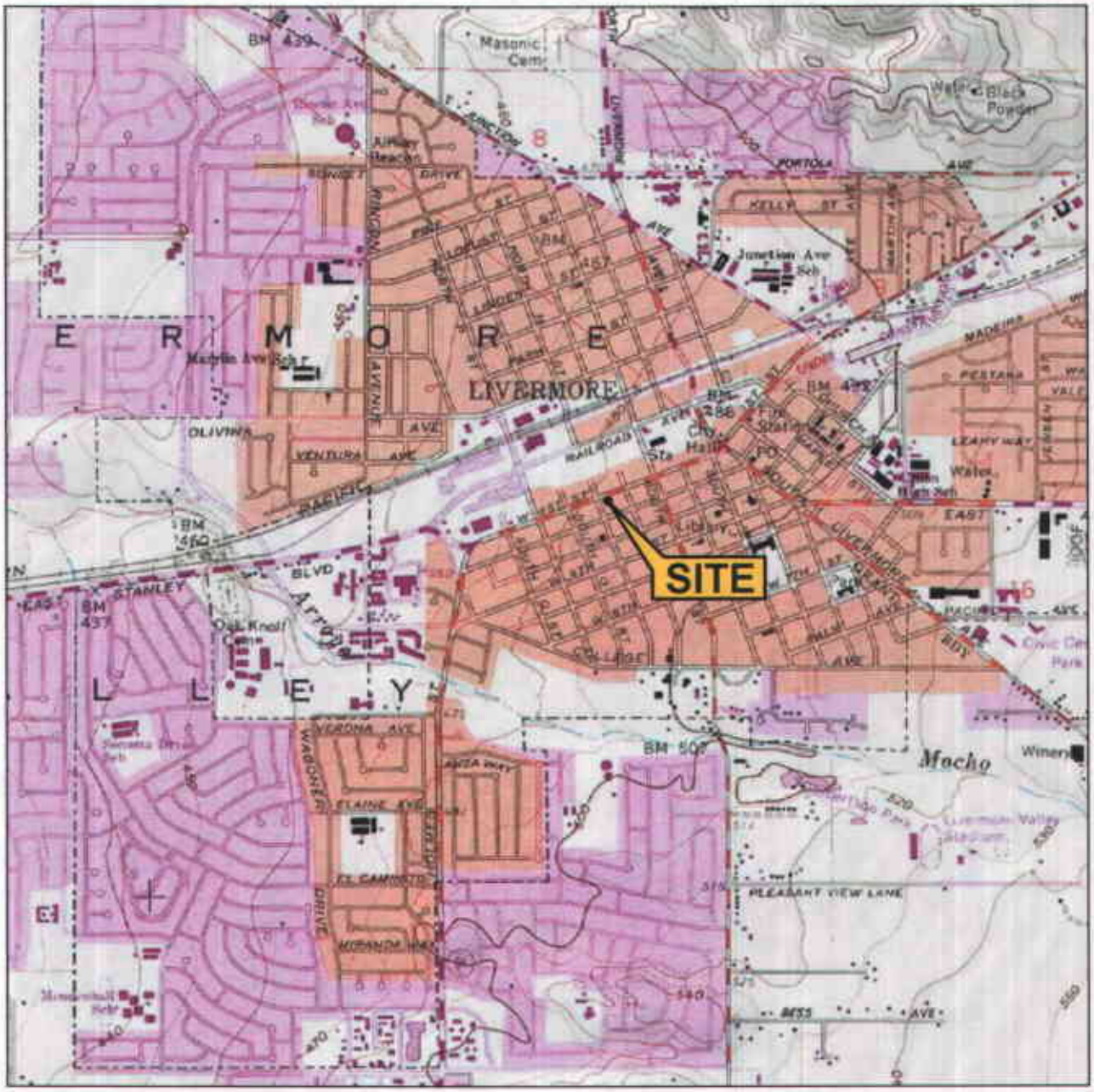
Tracy L. Walker, RG
Associate



ATTACHMENTS:

Figure 1:	Vicinity Map
Figure 2:	Groundwater Elevation Contour Map – March 4, 2003
Figure 3:	Dissolved-Phase Benzene Concentrations – March 4, 2003
Figure 4:	Dissolved-Phase MTBE Concentrations – March 4, 2003
Table 1:	Summary of Groundwater Monitoring and Chemical Analysis
Appendix A:	Field Procedures
Appendix B:	Doulos Environmental Field Data Sheets
Appendix C:	Official Laboratory Reports and Chain-of-Custody Records

cc: Brian Kelleher



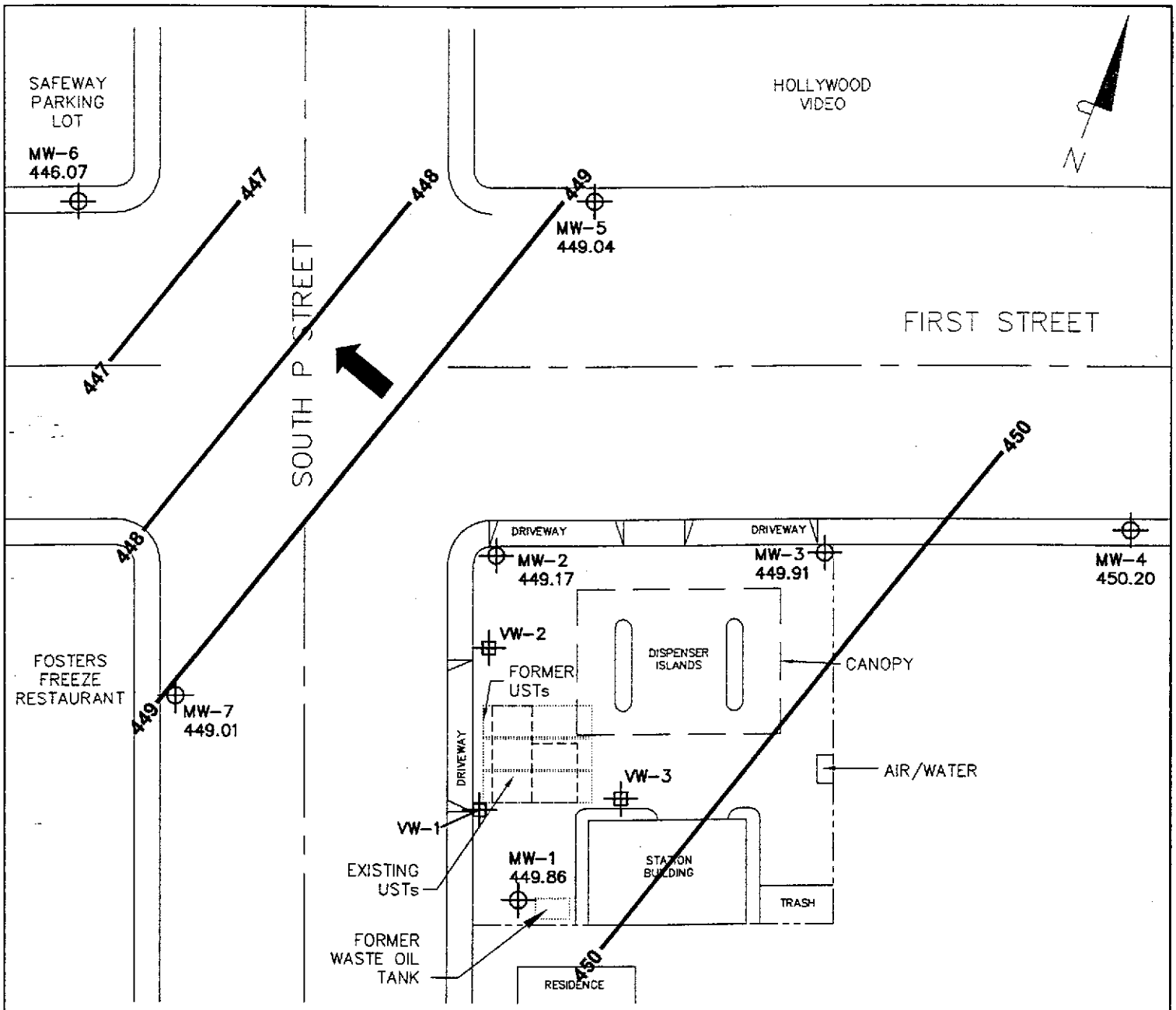
SOURCE:
United States Geological Survey
7.5 Minute Topographic Maps:
Livermore Quadrangle

VICINITY MAP

Tesoro Station No. 67076
(Former Beacon Station No. 3604)
1619 West First Street
Livermore, California

TRC

FIGURE 1



LEGEND

- Property line
- Groundwater monitoring well
- Vapor extraction well
- 449.86 — Groundwater elevation (in feet above mean sea level)
- 450 — Groundwater elevation contour line
- General direction of groundwater gradient

NOTES: Contour lines are interpretive based on fluid level measurements taken on March 4, 2003. Contour interval = 1 foot.

APPROXIMATE SCALE (FEET)

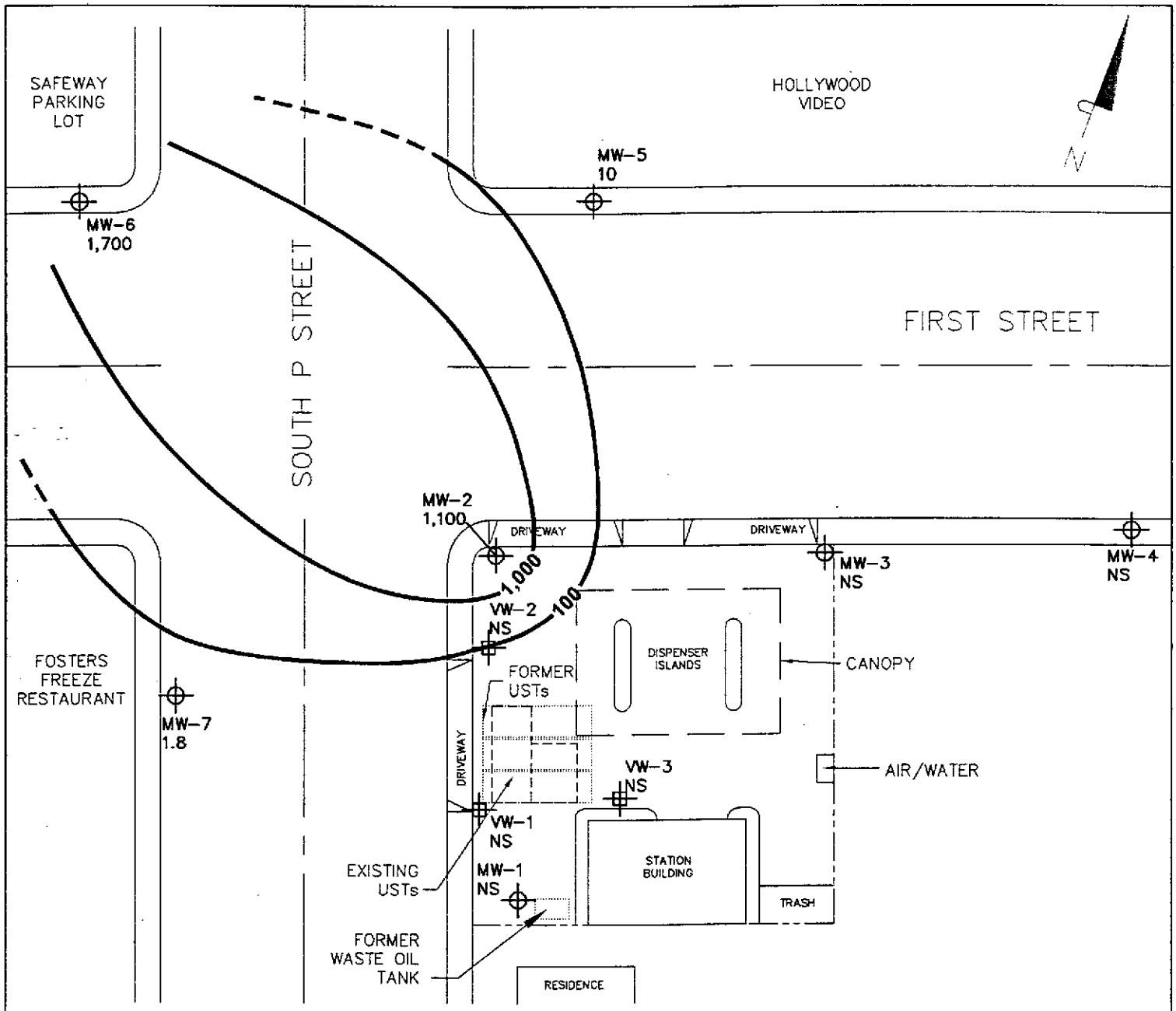
0 40 80

SOURCE: Doulos Environmental, Inc. site plan. Wells resurveyed by Advanced Geomatic Engineering on 1/22/02.

GROUNDWATER ELEVATION CONTOUR MAP
March 4, 2003
Tesoro Station No. 67076
(Former Beacon Station 3604)
1619 West First Street
Livermore, California

TRC

FIGURE 2



LEGEND

- Property line
- Groundwater monitoring well
- Vapor extraction well
- 10 — Dissolved-phase benzene concentration (µg/l)
- 100 — Benzene isoconcentration line (µg/l)

SOURCE: Doulos Environmental, Inc. site plan. Wells resurveyed by Advanced Geomatic Engineering on 1/22/02.

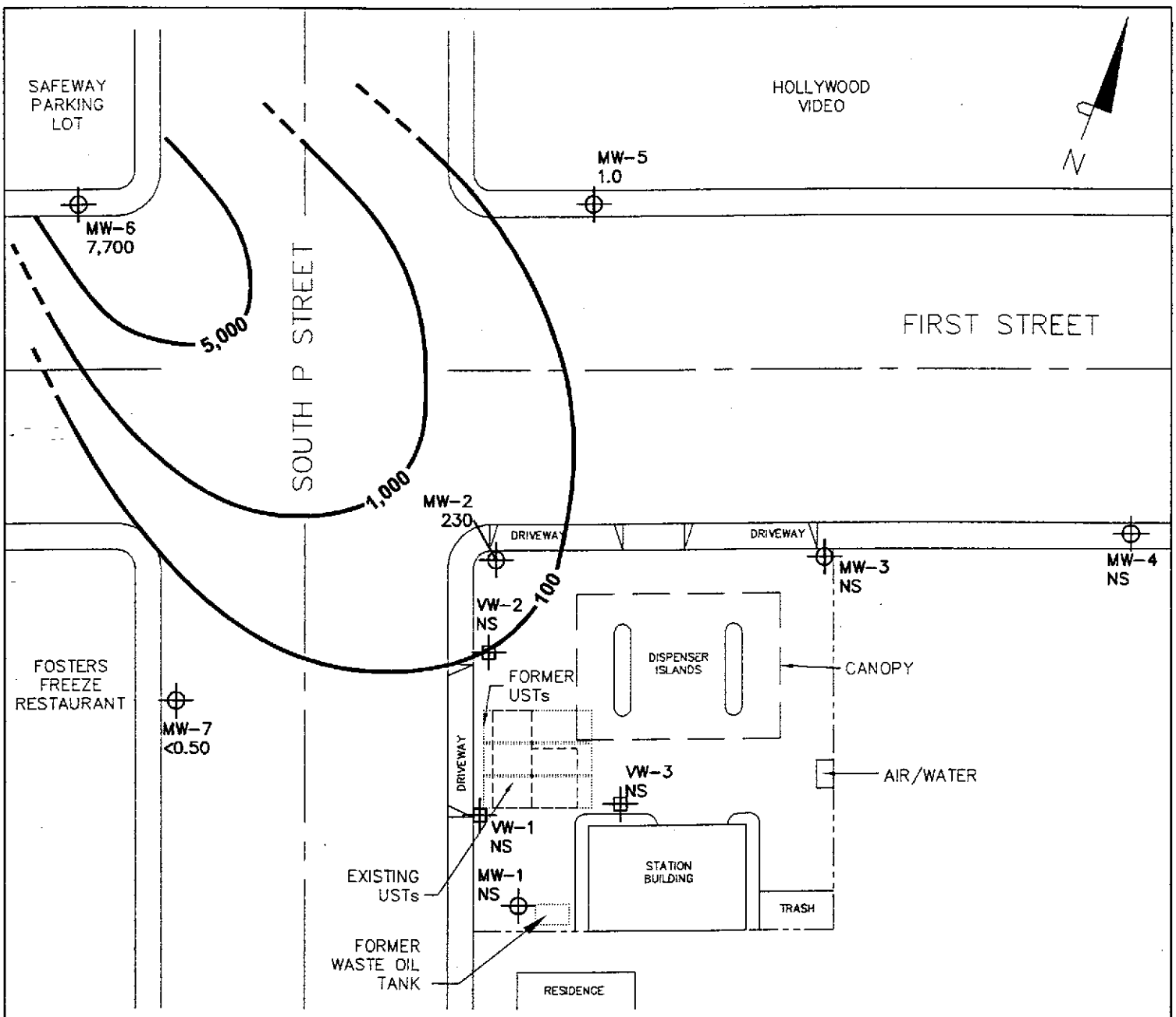
NOTES: Contour lines are interpretive based on laboratory analysis of groundwater samples collected on March 4, 2003. µg/l = micrograms per liter (parts per billion); < = not detected at or above the stated method detection limit; NS = not sampled.

APPROXIMATE SCALE (FEET)

0 40 80

DISSOLVED-PHASE BENZENE CONCENTRATIONS
March 4, 2003
Tesoro Station No. 67076
(Former Beacon Station 3604)
1619 West First Street
Livermore, California

TRC | **FIGURE 3**



LEGEND

- Property line
- Groundwater monitoring well
- Vapor extraction well
- 230 — Dissolved-phase MTBE concentration (µg/l)
- 100 — MTBE isoconcentration line (µg/l)

SOURCE: Doulos Environmental, inc. site plan. Wells resurveyed by Advanced Geomatic Engineering on 1/22/02.

NOTES: Contour lines are interpretive based on laboratory analysis of groundwater samples collected on March 4, 2003. MTBE = methyl tert butyl ether; µg/l = micrograms per liter (parts per billion); < = not detected at or above the stated method detection limit; NS = not sampled.

APPROXIMATE SCALE (FEET)

0 40 80

DISSOLVED-PHASE MTBE CONCENTRATIONS
March 4, 2003
Tesoro Station No. 67076
(Former Beacon Station 3604)
1619 West First Street
Livermore, California

TRC | **FIGURE 4**

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2 DCA (µg/l)	1,2 DBE (µg/l)
MW-1	06/01/93	100.00	37.50	62.50	27,000	2,200	400	<0.50	4,900	—	—	—	—	—	—	—	—	—
MW-1	06/22/93	100.00	38.46	61.54	87,000	8,000	10,000	260	10,000	—	—	—	—	—	—	—	—	—
MW-1	10/06/93	100.00	42.22	57.78	40,000	4,700	6,500	740	5,300	—	—	—	—	—	—	—	—	—
MW-1	01/13/94	100.00	34.52	65.48	9,400	1,300	9,500	110	850	—	—	—	—	—	—	—	—	—
MW-1	03/30/94	100.00	31.93	68.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-1	04/25/94	100.00	33.49	66.51	11,000	1,500	1,800	290	1,700	—	—	—	—	—	—	—	—	—
MW-1	08/12/94	100.00	41.03	58.97	11,000	550	330	260	1,400	—	—	—	—	—	—	—	—	—
MW-1	12/14/94	100.00	38.63	61.37	11,000	1,000	1,200	320	1,500	—	—	—	—	—	—	—	—	—
MW-1	02/10/95	100.00	30.80	69.20	9,300	1,200	1,500	280	1,500	—	—	—	—	—	—	—	—	—
MW-1	06/15/95	100.00	25.46	74.54	140	5.6	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—
MW-1	09/26/95	100.00	31.05	68.95	410	140	<0.50	<0.50	43	—	—	—	—	—	—	—	—	—
MW-1	12/15/95	100.00	28.11	71.89	740	250	<1.3	<1.3	87	—	—	—	—	—	—	—	—	—
MW-1	03/21/96	100.00	17.67	82.33	<50	0.52	<0.50	<0.50	0.51	—	—	—	—	—	—	—	—	—
MW-1	06/13/96	100.00	22.86	77.14	240*	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—
MW-1	09/16/96	100.00	30.04	69.96	720	70	<0.50	1.0	5.1	<5.0	—	—	—	—	—	—	—	—
MW-1	12/02/96	100.00	26.74	73.26	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-1	03/07/97	100.00	20.84	79.16	600	6.7	<0.50	1.2	1.8	<5.0	—	—	—	—	—	—	—	—
MW-1	06/12/97	100.00	28.71	71.29	18,000	180	800	410	1,800	<5.0	—	—	—	—	—	—	—	—
MW-1	09/29/97	100.00	33.91	66.09	350	120	1.5	<0.50	12	<50	—	—	—	—	—	—	—	—
MW-1	12/01/97	100.00	34.88	65.12	<50	7.0	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-1	03/19/98	100.00	19.83	80.17	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-1	05/29/98	100.00	21.57	78.43	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-1	09/15/98	100.00	31.68	68.32	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-1	11/30/98	100.00	36.80	63.20	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-1	01/17/99	100.00	30.02	69.98	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-1	06/10/99	100.00	29.30	70.70	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-1	09/07/99	100.00	31.41	68.59	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-1	12/13/99	100.00	32.95	67.05	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-1	03/13/00	100.00	25.74	74.26	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-1	06/12/00	100.00	28.24	71.76	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-1	11/10/00	100.00	30.56	69.44	<50	<0.50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—
MW-1	12/31/00	100.00	31.71	68.29	<50	<0.50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—
MW-1	03/27/01	100.00	30.43	69.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—
MW-1	06/30/01	100.00	36.61	63.39	<50	<0.50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2 DCA (µg/l)	1,2 DBE (µg/l)
MW-1	09/26/01	100.00	45.10	54.90	90	<0.50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—
MW-1	12/18/01	100.00	39.39	60.61	<50	<0.50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—
MW-1	01/22/02	483.58	Well resurveyed to new reference point								—	—	—	—	—	—	—	—
MW-1	03/18/02	483.58	38.24	445.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-1	06/05/02	483.58	Well inaccessible								—	—	—	—	—	—	—	—
MW-1	08/21/02	483.58	36.71	446.87	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-1	12/03/02	483.58	36.85	446.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-1	03/04/03	483.58	33.72	449.86	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-2	06/01/93	98.68	38.02	60.66	170,000	20,000	21,000	3,300	18,000	—	—	—	—	—	—	—	—	—
MW-2	06/22/93	98.68	39.07	59.61	160,000	19,000	22,000	3,500	18,000	—	—	—	—	—	—	—	—	—
MW-2	10/06/93	98.68	43.72	54.96	110,000	17,000	17,000	3,000	15,000	—	—	—	—	—	—	—	—	—
MW-2	01/13/94	98.68	35.85	62.83	93,000	20,000	19,000	2,300	14,000	—	—	—	—	—	—	—	—	—
MW-2	03/30/94	98.68	32.82	65.86	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-2	04/25/94	98.68	34.76	63.92	41,000	9,600	7,300	840	7,800	—	—	—	—	—	—	—	—	—
MW-2	08/12/94	98.68	44.33	54.35	59,000	11,000	11,000	2,300	11,000	—	—	—	—	—	—	—	—	—
MW-2	12/14/94	98.68	40.00	58.68	63,000	13,000	13,000	2,200	12,000	—	—	—	—	—	—	—	—	—
MW-2	02/10/95	98.68	32.16	66.52	63,000	12,000	12,000	2,200	11,000	—	—	—	—	—	—	—	—	—
MW-2	06/15/95	98.68	25.93	72.75	61,000	11,000	12,000	1,900	11,000	—	—	—	—	—	—	—	—	—
MW-2	09/26/95	98.68	32.42	66.26	61,000	9,400	11,000	2,300	12,000	—	—	—	—	—	—	—	—	—
MW-2	12/15/95	98.68	29.41	69.27	48,000	8,000	8,300	2,200	12,000	—	—	—	—	—	—	—	—	—
MW-2	03/21/96	98.68	17.47	81.21	48,000	8,000	7,700	2,400	12,000	—	—	—	—	—	—	—	—	—
MW-2	06/13/96	98.68	23.69	74.99	33,000	7,300	8,800	1,900	12,000	<250	—	—	—	—	—	—	—	—
MW-2	09/16/96	98.68	31.24	67.44	8,600	510	640	180	1,300	<250	—	—	—	—	—	—	—	—
MW-2	12/02/96	98.68	26.90	71.78	29,000	4,400	4,000	1,300	6,100	<130	—	—	—	—	—	—	—	—
MW-2	03/07/97	98.68	21.33	77.35	13,000	1,800	1,100	270	2,000	<250	—	—	—	—	—	—	—	—
MW-2	06/12/97	98.68	29.94	68.74	68,000	7,800	6,600	2,300	11,000	<500	—	—	—	—	—	—	—	—
MW-2	09/29/97	98.68	34.22	64.46	15,000	1,500	97	740	1,800	<250	—	—	—	—	—	—	—	—
MW-2	12/01/97	98.68	35.94	62.74	13,000	900	37	860	2,400	<250	—	—	—	—	—	—	—	—
MW-2	03/19/98	98.68	20.34	78.34	42,000	5,000	3,600	2,000	8,300	<250	—	—	—	—	—	—	—	—
MW-2	05/29/98	98.68	22.63	76.05	68,000	5,600	4,700	2,400	11,000	<250	—	—	—	—	—	—	—	—
MW-2	09/15/98	98.68	32.30	66.38	36,000	3,900	1,200	1,400	7,800	<250	—	—	—	—	—	—	—	—
MW-2	11/30/98	98.68	36.90	61.78	16,000	2,200	59	1,200	1,500	<250	—	—	—	—	—	—	—	—
MW-2	01/17/99	98.68	30.17	68.51	30,000	4,000	2,200	2,100	9,500	<250	—	—	—	—	—	—	—	—

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2 DCA (µg/l)	1,2 DBE (µg/l)
MW-2	06/10/99	98.68	29.98	68.70	70,000	6,300	1,800	3,600	14,000	<500	—	—	—	—	—	—	—	—
MW-2	09/07/99	98.68	31.85	66.83	42,000	3,800	840	1,900	8,000	150	—	—	—	—	—	—	—	—
MW-2	12/13/99	98.68	33.72	64.96	14,000	1,400	87	690	110	34	—	—	—	—	—	—	—	—
MW-2	03/13/00	98.68	26.54	72.14	38,000	2,400	2,300	1,600	6,400	2,400	—	—	—	—	—	—	—	—
MW-2	06/12/00	98.68	28.44	70.24	56,000	4,000	950	2,300	7,200	<50	—	—	—	—	—	—	—	—
MW-2	11/10/00	98.68	31.31	67.37	35,000	5,100	850	1,500	3,200	230	—	—	—	—	—	—	—	—
MW-2	12/31/00	98.68	32.68	66.00	21,000	3,200	420	1,300	1,200	440	—	—	—	—	—	—	—	—
MW-2	03/27/01	98.68	30.81	67.87	3,500	420	64	16	280	120	—	—	—	—	—	—	—	—
MW-2	06/30/01	98.68	37.58	61.10	1,200	88	4.5	65	37	29	—	—	—	—	—	—	—	—
MW-2	09/26/01	98.68	44.97	53.71	53,000	8,500	1,500	2,400	4,600	270	—	—	—	—	—	—	—	—
MW-2	12/18/01	98.68	40.67	58.01	26,000	5,400	900	1,500	2,200	430	—	—	—	—	—	—	—	—
MW-2	01/22/02	482.77	Well resurveyed to new reference point								—	—	—	—	—	—	—	—
MW-2	03/18/02	482.77	38.94	443.83	4,200	240	7.3	200	53	89	—	—	—	—	—	—	—	—
MW-2	06/05/02	482.77	36.45	446.32	25,000	3,500	390.0	1,400	2,400	550	—	—	—	—	—	—	—	—
MW-2	08/21/02	482.77	37.15	445.62	10,000	1,200	32.0	620	300	160	—	—	—	—	—	—	—	—
MW-2	12/03/02	482.77	36.76	446.01	3,700	110	2.5	130	11	29	—	—	—	—	—	—	—	—
MW-2	03/04/03	482.77	33.60	449.17	8,700	1,100	77.0	350	540	230	<0.50	<0.50	<10	21	<150	<5.0	<0.50	<0.50
MW-3	06/01/93	97.08	36.18	60.90	270	4.6	<0.50	<0.50	1.9	—	—	—	—	—	—	—	—	—
MW-3	06/22/93	97.08	37.11	59.97	160	8.2	<0.50	<0.50	0.72	—	—	—	—	—	—	—	—	—
MW-3	10/06/93	97.08	41.15	55.93	740	57	110	24	120	—	—	—	—	—	—	—	—	—
MW-3	01/13/94	97.08	33.95	63.13	83	2.6	0.67	0.78	4.2	—	—	—	—	—	—	—	—	—
MW-3	03/30/94	97.08	30.97	66.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	04/25/94	97.08	32.46	64.62	60	0.75	3.2	0.50	3.6	—	—	—	—	—	—	—	—	—
MW-3	08/12/94	97.08	41.72	55.36	310	7.3	14	2.6	13	—	—	—	—	—	—	—	—	—
MW-3	12/14/94	97.08	37.62	59.46	75	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—
MW-3	02/10/95	97.08	29.96	67.12	96	1.4	<0.50	<0.50	1.8	—	—	—	—	—	—	—	—	—
MW-3	06/15/95	97.08	23.66	73.42	<50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—
MW-3	09/26/95	97.08	29.62	67.46	<50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—
MW-3	12/15/95	97.08	27.10	69.98	<50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—
MW-3	03/21/96	97.08	15.85	81.23	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	06/13/96	97.08	21.31	75.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	09/16/96	97.08	28.62	68.46	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	12/02/96	97.08	25.55	71.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2 DCA (µg/l)	1,2 DBE (µg/l)
MW-3	03/07/97	97.08	19.77	77.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	06/12/97	97.08	27.67	69.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	09/29/97	97.08	29.60	67.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	12/01/97	97.08	33.37	63.71	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	03/19/98	97.08	18.76	78.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	05/29/98	97.08	20.64	76.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	09/15/98	97.08	30.70	66.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	11/30/98	97.08	34.96	62.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	01/17/99	97.08	28.81	68.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	06/10/99	97.08	28.10	68.98	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	09/07/99	97.08	30.38	66.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	12/13/99	97.08	31.46	65.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	03/13/00	97.08	24.28	72.80	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	06/12/00	97.08	26.80	70.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	11/10/00	97.08	29.47	67.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	12/31/00	97.08	31.38	65.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	03/27/01	97.08	29.94	67.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	06/30/01	97.08	37.54	59.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	09/26/01	97.08	45.17	51.91	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	12/18/01	97.08	39.41	57.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	01/22/02	482.66	ed to new reference point															
MW-3	03/18/02	482.66	37.73	444.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	06/05/02	482.66	35.35	447.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	08/21/02	482.66	36.21	446.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	12/03/02	482.66	35.92	446.74	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	03/04/03	482.66	32.75	449.91	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	03/30/94	99.35	31.56	67.79	120	4.2	15	2.5	26	—	—	—	—	—	—	—	—	—
MW-4	04/25/94	99.35	32.73	66.62	65	<0.50	1.8	<0.50	2.1	—	—	—	—	—	—	—	—	—
MW-4	08/12/94	99.35	41.61	57.74	<50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—
MW-4	12/14/94	99.35	38.11	61.24	<50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—
MW-4	02/10/95	99.35	30.50	68.85	<50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—
MW-4	06/15/95	99.35	23.63	75.72	<50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—
MW-4	09/26/95	99.35	29.70	69.65	<50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2 DCA (µg/l)	1,2 DBE (µg/l)
MW-4	12/15/95	99.35	27.56	71.79	<50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—
MW-4	03/21/96	99.35	15.63	83.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	06/13/96	99.35	21.07	78.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	09/16/96	99.35	28.99	70.36	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	12/02/96	99.35	26.04	73.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	03/07/97	99.35	19.69	79.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	06/12/97	99.35	28.04	71.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	09/29/97	99.35	29.91	69.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	12/01/97	99.35	33.88	65.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	03/19/98	99.35	18.67	80.68	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	05/29/98	99.35	20.16	79.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	09/15/98	99.35	30.46	68.89	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	11/30/98	99.35	34.50	64.85	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	01/17/99	99.35	28.30	71.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	06/10/99	99.35	27.60	71.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	09/07/99	99.35	30.79	68.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	12/13/99	99.35	31.60	67.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	03/13/00	99.35	24.35	75.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	06/12/00	99.35	26.91	72.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	11/10/00	99.35	29.71	69.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	12/31/00	99.35	31.79	67.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	03/27/01	99.35	29.98	69.37	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	06/30/01	99.35	36.88	62.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	09/26/01	99.35	43.87	55.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	12/18/01	99.35	39.30	60.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	01/22/02	482.93	ed to new reference point															
MW-4	03/18/02	482.93	37.75	445.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	06/05/02	482.93	35.68	447.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	08/21/02	482.93	36.58	446.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	12/03/02	482.93	35.90	447.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-4	03/04/03	482.93	32.73	450.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-5	03/30/94	98.37	32.07	66.30	7,500	1,300	20	<13	160	—	—	—	—	—	—	—	—	—
MW-5	04/25/94	98.37	33.65	64.72	6,500	1,100	41	130	740	—	—	—	—	—	—	—	—	—

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2 DCA (µg/l)	1,2 DBE (µg/l)
MW-5	08/12/94	98.37	42.73	55.64	4,000	420	2.9	41	98	—	—	—	—	—	—	—	—	—
MW-5	12/14/94	98.37	38.89	59.48	4,800	660	<2.5	33	13	—	—	—	—	—	—	—	—	—
MW-5	02/10/95	98.37	31.44	66.93	5,200	490	<13	23	19	—	—	—	—	—	—	—	—	—
MW-5	06/15/95	98.37	24.99	73.38	460	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—	—
MW-5	09/26/95	98.37	30.20	68.17	1,400	61	<0.50	3.1	<0.50	—	—	—	—	—	—	—	—	—
MW-5	12/15/95	98.37	28.56	69.81	2,100	77	1.5	10	1.5	—	—	—	—	—	—	—	—	—
MW-5	03/21/96	98.37	16.82	81.55	930	35	2.0	2.0	18	—	—	—	—	—	—	—	—	—
MW-5	06/13/96	98.37	22.61	75.76	610	38	0.72	1.9	2.0	<5.0	—	—	—	—	—	—	—	—
MW-5	09/16/96	98.37	29.78	68.59	380	29	<0.50	0.95	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	12/02/96	98.37	26.51	71.86	200	1.1	0.64	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	03/07/97	98.37	21.91	76.46	520	74	<0.50	0.58	1.5	<5.0	—	—	—	—	—	—	—	—
MW-5	06/12/97	98.37	—	—	140	5.3	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	09/29/97	98.37	31.74	66.63	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	12/01/97	98.37	34.05	64.32	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	03/19/98	98.37	20.93	77.44	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	05/29/98	98.37	21.30	77.07	540	4.1	<0.50	<0.50	0.52	<5.0	—	—	—	—	—	—	—	—
MW-5	09/15/98	98.37	31.32	67.05	67	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	11/30/98	98.37	35.44	62.93	430	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	01/17/99	98.37	29.59	68.78	500	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	06/10/99	98.37	28.05	70.32	66	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	09/07/99	98.37	31.11	67.26	820	46	1.7	10	21	<5.0	—	—	—	—	—	—	—	—
MW-5	12/13/99	98.37	32.66	65.71	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	03/13/00	98.37	25.87	72.50	270	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	06/12/00	98.37	28.15	70.22	<50	<0.50	<0.50	<0.50	<0.50	<5.0	—	—	—	—	—	—	—	—
MW-5	11/10/00	98.37	30.05	68.32	2,200	42	1.1	25	30	8.6	—	—	—	—	—	—	—	—
MW-5	12/31/00	98.37	31.81	66.56	1,300	21	<0.50	4.3	2.6	10	—	—	—	—	—	—	—	—
MW-5	03/27/01	98.37	30.57	67.80	1,200	11	<0.50	2.6	<0.50	21	—	—	—	—	—	—	—	—
MW-5	06/30/01	98.37	37.24	61.13	1,400	4.8	<0.50	1.5	0.56	14	—	—	—	—	—	—	—	—
MW-5	09/26/01	98.37	44.53	53.84	660	<0.50	<0.50	<0.50	<0.50	3.0	—	—	—	—	—	—	—	—
MW-5	12/18/01	98.37	40.65	57.72	240	<0.50	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—
MW-5	01/22/02	481.94	Well resurveyed to new reference point															
MW-5	03/18/02	481.94	38.75	443.19	890	0.65	<0.50	<0.50	<0.50	3.1	—	—	—	—	—	—	—	—
MW-5	06/05/02	481.94	36.21	445.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-5	08/21/02	481.94	36.76	445.18	2,100	20	<0.50	63	4	7	—	—	—	—	—	—	—	—

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2 DCA (µg/l)	1,2 DBE (µg/l)
MW-5	12/03/02	481.94	36.12	445.82	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-5	03/04/03	481.94	32.90	449.04	490	10	<0.50	2	<0.50	1	<0.50	<0.50	<0.50	<5.0	<50	<5.0	<0.50	<0.50
MW-6	03/30/94	97.62	33.38	64.24	63,000	21,000	8,600	1,700	12,000	—	—	—	—	—	—	—	—	—
MW-6	04/25/94	97.62	35.49	62.13	77,000	22,000	12,000	2,300	16,000	—	—	—	—	—	—	—	—	—
MW-6	08/12/94	97.62	45.14	52.48	65,000	12,000	8,100	2,200	16,000	—	—	—	—	—	—	—	—	—
MW-6	12/14/94	97.62	40.99	56.63	65,000	18,000	9,500	2,200	14,000	—	—	—	—	—	—	—	—	—
MW-6	02/10/95	97.62	33.34	64.28	63,000	21,000	8,400	2,000	14,000	—	—	—	—	—	—	—	—	—
MW-6	06/15/95	97.62	26.88	70.74	75,000	20,000	11,000	2,100	15,000	—	—	—	—	—	—	—	—	—
MW-6	09/26/95	97.62	33.55	64.07	62,000	15,000	9,600	1,700	12,000	—	—	—	—	—	—	—	—	—
MW-6	12/15/95	97.62	30.32	67.30	61,000	15,000	9,000	2,300	15,000	—	—	—	—	—	—	—	—	—
MW-6	03/21/96	97.62	18.89	78.73	65,000	18,000	9,800	2,400	16,000	—	—	—	—	—	—	—	—	—
MW-6	06/13/96	97.62	24.62	73.00	29,000	8,600	3,300	2,200	12,000	<250	—	—	—	—	—	—	—	—
MW-6	09/16/96	97.62	32.64	64.98	42,000	6,400	1,800	2,100	11,000	<250	—	—	—	—	—	—	—	—
MW-6	12/02/96	97.62	27.42	70.20	28,000	3,000	1,100	970	8,300	<500	—	—	—	—	—	—	—	—
MW-6	03/07/97	97.62	22.13	75.49	12,000	2,000	190	520	2,300	<250	—	—	—	—	—	—	—	—
MW-6	06/12/97	97.62	31.02	66.60	37,000	3,900	470	1,600	6,200	<100	—	—	—	—	—	—	—	—
MW-6	09/29/97	97.62	35.77	61.85	34,000	3,500	370	1,600	5,200	<100	—	—	—	—	—	—	—	—
MW-6	12/01/97	97.62	37.14	60.48	20,000	2,100	<10	1,200	2,200	<100	—	—	—	—	—	—	—	—
MW-6	03/19/98	97.62	21.10	76.52	24,000	2,900	460	1,100	3,400	<100	—	—	—	—	—	—	—	—
MW-6	05/29/98	97.62	23.26	74.36	38,000	3,500	700	1,800	5,200	<100	—	—	—	—	—	—	—	—
MW-6	09/15/98	97.62	33.50	64.12	22,000	1,900	110	1,400	3,000	<100	—	—	—	—	—	—	—	—
MW-6	11/30/98	97.62	38.73	58.89	9,900	770	16	820	710	<100	—	—	—	—	—	—	—	—
MW-6	01/17/99	97.62	32.05	65.57	14,000	2,200	160	1,700	3,600	<100	—	—	—	—	—	—	—	—
MW-6	06/10/99	97.62	31.44	66.18	22,000	1,600	160	1,400	2,900	5.5	—	—	—	—	—	—	—	—
MW-6	09/07/99	97.62	33.94	63.68	17,000	1,400	33	1,300	1,800	<50	—	—	—	—	—	—	—	—
MW-6	12/13/99	97.62	35.84	61.78	16,000	790	9.2	840	780	<25	—	—	—	—	—	—	—	—
MW-6	03/13/00	97.62	28.45	69.17	16,000	790	85	780	1,600	<25	—	—	—	—	—	—	—	—
MW-6	06/12/00	97.62	30.52	67.10	24,000	1,100	150	1,300	2,300	5,600	—	—	—	—	—	—	—	—
MW-6	11/10/00	97.62	32.99	64.63	13,000	440	6.6	760	350	1,000	—	—	—	—	—	—	—	—
MW-6	12/31/00	97.62	34.95	62.67	12,000	680	7.6	820	190	1,400	—	—	—	—	—	—	—	—
MW-6	03/27/01	97.62	32.72	64.90	14,000	330	17	940	670	380	—	—	—	—	—	—	—	—
MW-6	06/30/01	97.62	39.86	57.76	750	45	0.93	47	14	54	—	—	—	—	—	—	—	—
MW-6	09/26/01	97.62	Dry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2 DCA (µg/l)	1,2 DBE (µg/l)
MW-6	12/18/01	97.62	43.36	54.26	43,000	3,800	350	1,900	3,000	900	—	—	—	—	—	—	—	—
MW-6	01/22/02	481.20	ed to new reference point															
MW-6	03/18/02	481.20	41.29	439.91	33,000	2,600	120	1,800	2,800	740	—	—	—	—	—	—	—	—
MW-6	06/05/02	481.20	38.35	442.85	10,000	1,100	16	700	180	600	—	—	—	—	—	—	—	—
MW-6	08/21/02	481.20	39.02	442.18	10,000	1,200	23	710	290	370	—	—	—	—	—	—	—	—
MW-6	12/03/02	481.20	38.76	442.44	16,000	1,700	63	970	630	1,500	—	—	—	—	—	—	—	—
MW-6	03/04/03	481.20	35.13	446.07	16,000	1,700	25	1,200	40	7,700	<20	<20	<70	<200	<2000	<200	<20	<20
MW-7	03/30/94	98.03	31.98	66.05	43,000	7,200	2,400	1,600	11,000	—	—	—	—	—	—	—	—	—
MW-7	04/25/94	98.03	33.56	64.47	30,000	3,900	1,000	940	6,900	—	—	—	—	—	—	—	—	—
MW-7	08/12/94	98.03	43.35	54.68	30,000	3,800	1,400	1,300	7,500	—	—	—	—	—	—	—	—	—
MW-7	12/14/94	98.03	39.34	58.69	31,000	3,600	1,200	900	6,400	—	—	—	—	—	—	—	—	—
MW-7	02/10/95	98.03	32.11	65.92	27,000	4,000	900	890	5,100	—	—	—	—	—	—	—	—	—
MW-7	06/15/95	98.03	25.51	72.52	17,000	920	680	740	4,100	—	—	—	—	—	—	—	—	—
MW-7	09/26/95	98.03	31.43	66.60	7,000	200	150	170	810	—	—	—	—	—	—	—	—	—
MW-7	12/15/95	98.03	28.97	69.06	11,000	350	170	540	1,900	—	—	—	—	—	—	—	—	—
MW-7	03/21/96	98.03	17.36	80.67	12,000	320	100	730	2,500	—	—	—	—	—	—	—	—	—
MW-7	06/13/96	98.03	23.47	74.56	5,900	98	19	370	620	<50	—	—	—	—	—	—	—	—
MW-7	09/16/96	98.03	31.35	66.68	7,800	140	43	440	590	<25	—	—	—	—	—	—	—	—
MW-7	12/02/96	98.03	27.11	70.92	6,300	87	29	290	430	<50	—	—	—	—	—	—	—	—
MW-7	03/07/97	98.03	21.33	76.70	4,500	35	19	360	470	<25	—	—	—	—	—	—	—	—
MW-7	06/12/97	98.03	29.90	68.13	3,900	29	5.2	170	48	<5.0	—	—	—	—	—	—	—	—
MW-7	09/29/97	98.03	34.37	63.66	6,100	56	9	340	190	<25	—	—	—	—	—	—	—	—
MW-7	12/01/97	98.03	36.46	61.57	6,500	24	<2.5	400	250	<25	—	—	—	—	—	—	—	—
MW-7	03/19/98	98.03	20.33	77.70	2,000	20	<2.5	73	79	<25	—	—	—	—	—	—	—	—
MW-7	05/29/98	98.03	22.30	75.73	5,700	22	7.3	290	350	<25	—	—	—	—	—	—	—	—
MW-7	09/15/98	98.03	32.54	65.49	1,700	15	<2.5	44	5.1	<25	—	—	—	—	—	—	—	—
MW-7	11/30/98	98.03	37.96	60.07	4,800	42	12	270	640	<25	—	—	—	—	—	—	—	—
MW-7	01/17/99	98.03	31.04	66.99	3,400	33	<5.0	200	190	<50	—	—	—	—	—	—	—	—
MW-7	06/10/99	98.03	29.89	68.14	1,700	7.8	1.5	23	4.1	<5.0	—	—	—	—	—	—	—	—
MW-7	09/07/99	98.03	32.38	65.65	1,900	9.7	2.1	70	2.9	<5.0	—	—	—	—	—	—	—	—
MW-7	12/13/99	98.03	33.98	64.05	1,900	8.0	1.1	10	1.1	<5.0	—	—	—	—	—	—	—	—
MW-7	03/13/00	98.03	27.09	70.94	1,500	7.5	<0.50	6.7	2.9	<5.0	—	—	—	—	—	—	—	—
MW-7	06/12/00	98.03	28.76	69.27	1,200	5.4	<0.50	5.2	1.0	<5.0	—	—	—	—	—	—	—	—

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2 DCA (µg/l)	1,2 DBE (µg/l)
MW-7	11/10/00	98.03	31.54	66.49	1,000	3.9	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—
MW-7	12/31/00	98.03	32.76	65.27	620	1.8	<0.50	<0.50	<0.50	<0.50	—	—	—	—	—	—	—	—
MW-7	03/27/01	98.03	30.97	67.06	1,200	4.8	<0.50	6.7	0.94	<0.50	—	—	—	—	—	—	—	—
MW-7	06/30/01	98.03	37.50	60.53	2,800	10	1.7	75	170	<0.50	—	—	—	—	—	—	—	—
MW-7	09/26/01	98.03	45.11	52.92	1,900	16	0.89	2.3	25	<0.50	—	—	—	—	—	—	—	—
MW-7	12/18/01	98.03	41.13	56.90	3,000	13	0.88	3.4	3.4	<0.50	—	—	—	—	—	—	—	—
MW-7	01/22/02	481.61	ed to new reference point															
MW-7	03/18/02	481.61	39.22	442.39	3,100	7.3	1.5	38	110	<0.50	—	—	—	—	—	—	—	—
MW-7	06/05/02	481.61	36.55	445.06	1,800	7.6	1.0	39	20	<0.50	—	—	—	—	—	—	—	—
MW-7	08/21/02	481.61	36.81	444.80	3,300	7.6	0.7	85	36	<0.50	—	—	—	—	—	—	—	—
MW-7	12/03/02	481.61	36.52	445.09	1,700	5.4	<0.50	15	5.5	<0.50	—	—	—	—	—	—	—	—
MW-7	03/04/03	481.61	32.60	449.01	440	1.8	<0.50	0.54	2.9	<0.50	<0.50	<0.50	<0.50	<5.0	<50	<5.0	<0.50	<0.50
MW-A	01/17/99	—	30.13	—	5,800	1,700	85	65	320	<5.0								
MW-A	06/10/99	Well abandoned																
MW-B	01/17/99	—	30.29	—	4,400	240	30	21	39	<5.0								
MW-B	06/10/99	Well abandoned																
MW-C	01/17/99	—	30.60	—	—	—	—	—	—	—								
MW-C	06/10/99	Well abandoned																
MW-D	01/17/99	—	31.32	—	5,600	1,600	130	66	220	<5.0								
MW-D	06/10/99	Well abandoned																
MW-E	01/17/99	—	31.36	—	5,700	1,600	180	180	310	<50								
MW-E	06/10/99	—	—	—	5,000	1,300	130	320	450	<25								
MW-E	09/07/99	Well abandoned																
MW-W	01/17/99	—	30.91	—	23,000	7,600	760	1,400	5,000	<50								
MW-W	06/10/99	—	—	—	16,000	4,100	420	1,300	4,000	<50								
MW-W	09/07/99	Well abandoned																

Table 1

Summary of Groundwater Levels and Chemical Analysis

Tesoro Station 67076 - Former Beacon Station 3604 - 1619 West First Street, Livermore

Well ID	Date	Reference Elevation[1] (feet)	Depth to Water[1] (feet)	Groundwater Elevation (feet-MSL)	TPH-G (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8260 (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	TBA (µg/l)	Methanol (µg/l)	Ethanol (µg/l)	1,2 DCA (µg/l)	1,2 DBE (µg/l)

NOTES:

1 Measurement and reference elevation taken from notch/mark on top of well casing.
MSL = Mean sea level
µg/l = micrograms per liter (parts per billion)
— = not measured / not analyzed
TPH-G = total petroleum hydrocarbons as gasoline
MTBE = methyl tert butyl ether
< = not detected at or above the stated method detection limit
* = product is not typical gasoline
1,2 DBE= 1,2-Dibromothane

APPENDIX A

FIELD PROCEDURES

FIELD PROCEDURES

The following section describes procedures used by field personnel in the performance of groundwater sampling.

Groundwater 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 Groundwater

Prior to purging and sampling groundwater 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 electrical 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 groundwater being removed is relatively free of suspended solids. After purging, groundwater 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 amount of water, the groundwater 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 groundwater sample is collected. Groundwater 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 will be recorded. If the free product thickness is reduced to the point where a measurable thickness is no longer present in the well, a groundwater sample will be collected. If free product persists throughout the purging process, a final free product thickness measurement will be taken and a groundwater sample will not be collected.

Groundwater 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. Groundwater samples are transported to a state-certified laboratory and analyzed within the U.S. Environmental Protection Agency-specified hold times for the specified analytes.

APPENDIX B

DOULOS ENVIRONMENTAL FIELD DATA SHEETS

DOULOS ENVIRONMENTAL, INC.
GROUNDWATER/LIQUID LEVEL DATA
(measurements in feet)

Project Address: 1619 First St. Date: 3-4-03

Livermore Project No.: 67076

Recorded by: _____

Well No.	Time	Well Elev. TOC	Depth to Groundwater	Measured Total Depth	Groundwater Elevation	Depth to Product	Product Thickness	Comments
MW-1	3:21		33.72	69.56				
MW-2	3:17		33.60	67.89				
MW-3	3:10		32.75	67.15				
MW-4	3:14		32.73	69.39				
MW-5	2:50		32.90	67.80				
MW-6	2:58		35.13	64.90				
MW-7	3:01		32.60	67.05				

Notes:

DOULOS ENVIRONMENTAL, INC. **SAMPLING INFORMATION SHEET**

Client: Tesoro 67076 Sampling Date: 3-4-03

Site: 1619 First St. Project No.:

Livermore, Ca. Well Designation: MW-2

Is setup of traffic control devices required? (NO) YES time: _____ hours
Is there standing water in the 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" or 12" UV_____ 12" EMCO_____ 8" or 12" BK_____ 8" Christy_____
12" Christy_____ 8" M&D_____ 12" M&D_____ 12" DWP _____
12" CNI _____ 36" CNI _____ 12" Pomeco X Other: _____
General condition of wellhead assembly: Excellent _____ Good X 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 _____ Disposable Tubing_____

Well Diameter: 2" _____ 4" X 6" _____ 8" _____
Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement
Time: 3:17
Depth of well: 67.89
Depth to water: 33.60

Recharge Measurement
Time: NA
Depth to water: NA

Calculated purge: _____
Actual purge: NA

Start purge: NA Sampling time: 3:53

Time	Temperature	E.C.	pH	Turbidity	Volume
		NA			

Sample appearance: clear Lock: Dolphin

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

Remarks: _____

Signature: _____

DOULOS ENVIRONMENTAL, INC. **SAMPLING INFORMATION SHEET**

Client: Tesoro 67076 Sampling Date: 3-4-03

Site: 1619 First St. Project No.: _____

Livermore, Ca. Well Designation: MW-5

Is setup of traffic control devices required? (NO) YES time: _____ hours
Is there standing water in the 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): 5
Well cover type: 8" or 12" UV_____ 12" EMCO_____ 8" or 12" BK X 8" Christy_____
12" Christy_____ 8" M&D_____ 12" M&D_____ 12" DWP _____
12" CNI _____ 36" CNI _____ 12" Pomeco_____ Other: _____
General condition of wellhead assembly: Excellent _____ Good X 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 _____ Disposable Tubing_____

Well Diameter: 2" X 4" _____ 6" _____ 8" _____
Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement
Time: 2:50
Depth of well: 67.80
Depth to water: 32.90

Recharge Measurement
Time: NA
Depth to water: NA

Calculated purge: _____
Actual purge: NA

Start purge: NA Sampling time: 3:30

Time	Temperature	E.C.	pH	Turbidity	Volume
		NA			

Sample appearance: clear Lock: dolphin

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

Remarks: _____

Signature: _____

DOULOS ENVIRONMENTAL, INC. **SAMPLING INFORMATION SHEET**

Client: Tesoro 67076 Sampling Date: 3-4-03

Site: 1619 First St. Project No.: _____

Livermore, Ca. Well Designation: MW-6

_____

Is setup of traffic control devices required? (NO) YES time: _____ hours
Is there standing water in the 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): 5
Well cover type: 8" or 12" UV_____ 12" EMCO_____ 8" or 12" BK_____ 8" Christy_____
12" Christy_____ 8" M&D X 12" M&D_____ 12" DWP _____
12" CNI _____ 36" CNI _____ 12" Pomeco_____ Other: _____
General condition of wellhead assembly: Excellent_____ Good X 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 _____ Disposable Tubing_____

Well Diameter: 2" X 4" _____ 6" _____ 8" _____
Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement
Time: 9:58
Depth of well: 64.90
Depth to water: 35.13

Recharge Measurement
Time: NA
Depth to water: NA

Calculated purge: _____
Actual purge: NA

Start purge: NA Sampling time: 3:40

Time	Temperature	E.C.	pH	Turbidity	Volume
		NA	NA		

Sample appearance: Clear Lock: Dolphin

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

Remarks: _____

_____

Signature: _____

DOULOS ENVIRONMENTAL, INC. **SAMPLING INFORMATION SHEET**

Client: Tesoro 67076 Sampling Date: 3-4-03

Site: 1619 First St. Project No.:

Livermore, Ca. Well Designation: MW-7

Is setup of traffic control devices required? (NO) YES time: _____ hours
Is there standing water in the 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" or 12" UV X 12" EMCO _____ 8" or 12" BK _____ 8" Christy _____
12" Christy _____ 8" M&D _____ 12" M&D _____ 12" DWP _____
12" CNI _____ 36" CNI _____ 12" Pomeco _____ Other: _____
General condition of wellhead assembly: Excellent _____ Good X 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 _____ Disposable Tubing _____

Well Diameter: 2" X 4" _____ 6" _____ 8" _____
Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement
Time: 3:01
Depth of well: 67.05
Depth to water: 32.60

Recharge Measurement
Time: NA
Depth to water: NA

Calculated purge: _____
Actual purge: NA

Start purge: NA Sampling time: 3:46

Time	Temperature	E.C.	pH	Turbidity	Volume
		NA	NA		

Sample appearance: clear Lock: Dolphin

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

Remarks: _____

Signature: _____

DOULOS ENVIRONMENTAL, INC.
GROUNDWATER/LIQUID LEVEL DATA
(measurements in feet)

Project Address: 805 Sabastopol Rd.

Santa Rosa, Ca.

Date: 3-5-03

Project No.: Baugh,Wilson,Ent.

Recorded by:

Well No.	Time	Well Elev. TOC	Depth to Groundwater	Measured Total Depth	Groundwater Elevation	Depth to Product	Product Thickness	Comments
mw-1	6:40		5.54	18.36				
mw-2	6:43		5.35	18.89				
mw-3	6:47		5.19	18.96				
DTSC-4A	6:50		5.12	19.70				

Notes:

APPENDIX C

OFFICIAL LABORATORY REPORTS AND CHAIN-OF-CUSTODY RECORDS

KIFF ANALYTICAL LLC

Report Number : 31974
Date : 3/17/03

Tracy Walker
TRC Alton Geoscience
5052 Commercial Circle
Concord, CA 94520

Subject : 4 Water Samples
Project Name : Tesoro
Project Number : 67076 Livermore
P.O. Number : AFE023139615

Dear Mr. Walker,

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 : 31974
Date : 3/17/03

Subject : 4 Water Samples
Project Name : Tesoro
Project Number : 67076 Livermore
P.O. Number : AFE023139615

Case Narrative

The Method Reporting Limit for Methanol has been increased due to the presence of an interfering compound for sample MW-2. The Method Reporting Limit for Tert-amyl methyl ether has been increased due to the presence of an interfering compound for samples MW-2 and MW-6.

Approved By: Joel Kiff

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 31974

Date : 3/17/03

Project Name : **Tesoro**

Project Number : **67076 Livermore**

Sample : **MW-2** Matrix : Water Lab Number : 31974-01

Sample Date :3/4/03

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1100**	2.5	ug/L	EPA 8260B	3/12/03
Toluene	**77**	0.50	ug/L	EPA 8260B	3/11/03
Ethylbenzene	**350**	2.5	ug/L	EPA 8260B	3/12/03
Total Xylenes	**540**	2.5	ug/L	EPA 8260B	3/12/03
Methyl-t-butyl ether (MTBE)	**230**	0.50	ug/L	EPA 8260B	3/11/03
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/11/03
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/11/03
Tert-amyl methyl ether (TAME)	**< 10**	10	ug/L	EPA 8260B	3/11/03
Tert-Butanol	**21**	5.0	ug/L	EPA 8260B	3/11/03
Methanol	**< 150**	150	ug/L	EPA 8260B	3/11/03
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	3/11/03
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	3/11/03
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	3/11/03
TPH as Gasoline	**8700**	250	ug/L	EPA 8260B	3/12/03
Toluene - d8 (Surr)	90.6		% Recovery	EPA 8260B	3/11/03
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	3/11/03

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 31974
Date : 3/17/03

Project Name : **Tesoro**
Project Number : **67076 Livermore**

Sample : **MW-5** Matrix : Water Lab Number : 31974-02
Sample Date :3/4/03

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**10**	0.50	ug/L	EPA 8260B	3/12/03
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/12/03
Ethylbenzene	**2.2**	0.50	ug/L	EPA 8260B	3/12/03
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/12/03
Methyl-t-butyl ether (MTBE)	**1.0**	0.50	ug/L	EPA 8260B	3/12/03
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/12/03
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/12/03
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	3/12/03
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	3/12/03
Methanol	**< 50**	50	ug/L	EPA 8260B	3/12/03
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	3/12/03
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	3/12/03
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	3/12/03
TPH as Gasoline	**490**	50	ug/L	EPA 8260B	3/12/03
Toluene - d8 (Surr)	98.5		% Recovery	EPA 8260B	3/12/03
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	3/12/03

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 31974
Date : 3/17/03

Project Name : **Tesoro**
Project Number : **67076 Livermore**

Sample : **MW-6** Matrix : Water Lab Number : 31974-03
Sample Date :3/4/03

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1700**	20	ug/L	EPA 8260B	3/13/03
Toluene	**25**	20	ug/L	EPA 8260B	3/13/03
Ethylbenzene	**1200**	20	ug/L	EPA 8260B	3/13/03
Total Xylenes	**400**	20	ug/L	EPA 8260B	3/13/03
Methyl-t-butyl ether (MTBE)	**7700**	20	ug/L	EPA 8260B	3/13/03
Diisopropyl ether (DIPE)	**< 20**	20	ug/L	EPA 8260B	3/13/03
Ethyl-t-butyl ether (ETBE)	**< 20**	20	ug/L	EPA 8260B	3/13/03
Tert-amyl methyl ether (TAME)	**< 70**	70	ug/L	EPA 8260B	3/13/03
Tert-Butanol	**< 200**	200	ug/L	EPA 8260B	3/13/03
Methanol	**< 2000**	2000	ug/L	EPA 8260B	3/13/03
Ethanol	**< 200**	200	ug/L	EPA 8260B	3/13/03
1,2-Dichloroethane	**< 20**	20	ug/L	EPA 8260B	3/13/03
1,2-Dibromoethane	**< 20**	20	ug/L	EPA 8260B	3/13/03
TPH as Gasoline	**16000**	2000	ug/L	EPA 8260B	3/13/03
Toluene - d8 (Surr)	99.7		% Recovery	EPA 8260B	3/13/03
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	3/13/03

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 31974
Date : 3/17/03

Project Name : **Tesoro**
Project Number : **67076 Livermore**

Sample : **MW-7** Matrix : Water Lab Number : 31974-04
Sample Date :3/4/03

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1.8**	0.50	ug/L	EPA 8260B	3/11/03
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/11/03
Ethylbenzene	**0.54**	0.50	ug/L	EPA 8260B	3/11/03
Total Xylenes	**2.9**	0.50	ug/L	EPA 8260B	3/11/03
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/11/03
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/11/03
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/11/03
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	3/11/03
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	3/11/03
Methanol	**< 50**	50	ug/L	EPA 8260B	3/11/03
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	3/11/03
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	3/11/03
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	3/11/03
TPH as Gasoline	**440**	50	ug/L	EPA 8260B	3/11/03
Toluene - d8 (Surr)	97.0		% Recovery	EPA 8260B	3/11/03
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	3/11/03

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 31974

Date : 3/17/03

QC Report : Method Blank Data

Project Name : **Tesoro**

Project Number : **67076 Livermore**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	3/12/03
Toluene	< 0.50	0.50	ug/L	EPA 8260B	3/12/03
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	3/12/03
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	3/12/03
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	3/12/03
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	3/12/03
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	3/12/03
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	3/12/03
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	3/12/03
Methanol	< 50	50	ug/L	EPA 8260B	3/12/03
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	3/12/03
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	3/12/03
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	3/12/03
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	3/12/03
Toluene - d8 (Surr)	101		%	EPA 8260B	3/12/03
4-Bromofluorobenzene (Surr)	97.8		%	EPA 8260B	3/12/03
Benzene	< 0.50	0.50	ug/L	EPA 8260B	3/10/03
Toluene	< 0.50	0.50	ug/L	EPA 8260B	3/10/03
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	3/10/03
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	3/10/03
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	3/10/03
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	3/10/03
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	3/10/03
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	3/10/03
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	3/10/03
Methanol	< 50	50	ug/L	EPA 8260B	3/10/03
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	3/10/03
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	3/10/03
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	3/10/03
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	3/10/03
Toluene - d8 (Surr)	96.2		%	EPA 8260B	3/10/03
4-Bromofluorobenzene (Surr)	105		%	EPA 8260B	3/10/03

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	3/11/03
Toluene	< 0.50	0.50	ug/L	EPA 8260B	3/11/03
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	3/11/03
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	3/11/03
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	3/11/03
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	3/11/03
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	3/11/03
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	3/11/03
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	3/11/03
Methanol	< 50	50	ug/L	EPA 8260B	3/11/03
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	3/11/03
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	3/11/03
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	3/11/03
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	3/11/03
Toluene - d8 (Surr)	95.1		%	EPA 8260B	3/11/03
4-Bromofluorobenzene (Surr)	99.7		%	EPA 8260B	3/11/03

Approved By: Joel Kiff

Report Number : 31974

Date : 3/17/03

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Tesoro**

Project Number : **67076 Livermore**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	32014-05	<0.50	39.8	39.9	39.5	40.6	ug/L	EPA 8260B	3/12/03	99.4	102	2.46	70-130	25
Toluene	32014-05	<0.50	39.8	39.9	36.9	38.3	ug/L	EPA 8260B	3/12/03	92.8	96.0	3.36	70-130	25
Tert-Butanol	32014-05	<5.0	199	200	179	188	ug/L	EPA 8260B	3/12/03	90.2	94.1	4.30	70-130	25
Methyl-t-Butyl Ether	32014-05	<0.50	39.8	39.9	30.7	31.5	ug/L	EPA 8260B	3/12/03	77.3	79.0	2.21	70-130	25
Benzene	31977-01	<0.50	40.0	40.0	37.7	36.6	ug/L	EPA 8260B	3/10/03	94.2	91.6	2.80	70-130	25
Toluene	31977-01	<0.50	40.0	40.0	36.5	35.9	ug/L	EPA 8260B	3/10/03	91.2	89.8	1.58	70-130	25
Tert-Butanol	31977-01	<5.0	200	200	190	194	ug/L	EPA 8260B	3/10/03	95.1	97.2	2.15	70-130	25
Methyl-t-Butyl Ether	31977-01	<0.50	40.0	40.0	38.1	38.2	ug/L	EPA 8260B	3/10/03	95.2	95.4	0.289	70-130	25
Benzene	32042-04	<0.50	40.0	40.0	42.7	42.7	ug/L	EPA 8260B	3/11/03	107	107	0.00	70-130	25
Toluene	32042-04	<0.50	40.0	40.0	41.0	40.2	ug/L	EPA 8260B	3/11/03	102	100	1.90	70-130	25
Tert-Butanol	32042-04	850	200	200	1020	1080	ug/L	EPA 8260B	3/11/03	86.0	117	30.9	70-130	25
Methyl-t-Butyl Ether	32042-04	<0.50	40.0	40.0	41.4	41.6	ug/L	EPA 8260B	3/11/03	103	104	0.602	70-130	25

Approved By: Joel Kiff

Report Number : 31974

Date : 3/17/03

QC Report : Laboratory Control Sample (LCS)

Project Name : **Tesoro**

Project Number : **67076 Livermore**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	3/12/03	100	70-130
Toluene	40.0	ug/L	EPA 8260B	3/12/03	94.8	70-130
Tert-Butanol	200	ug/L	EPA 8260B	3/12/03	94.7	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	3/12/03	80.4	70-130
Benzene	40.0	ug/L	EPA 8260B	3/10/03	94.3	70-130
Toluene	40.0	ug/L	EPA 8260B	3/10/03	92.7	70-130
Tert-Butanol	200	ug/L	EPA 8260B	3/10/03	98.3	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	3/10/03	95.0	70-130
Benzene	40.0	ug/L	EPA 8260B	3/11/03	106	70-130
Toluene	40.0	ug/L	EPA 8260B	3/11/03	103	70-130
Tert-Butanol	200	ug/L	EPA 8260B	3/11/03	107	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	3/11/03	101	70-130

KIFF ANALYTICAL, LLC

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

2795 2nd Street, Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4809

Lab No. 31974 Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Tracy Walker

Company/Address: TRC

Phone No.: 925-688-1200 FAX No.: 925+688-0388

Project Number: 67076 Livermore P.O. No.: AFE 023139615

Project Name: Tesoro

Sampler Signature (below): Edgar Klinetob

EDF Report? [X] Yes [ ] No

Recommended but not mandatory to complete this section:

Sampling Company Log Code: DEIO

Global ID: T0600101410

EDF Deliverable to (Email Address): twalker@trcsolutions.com

Project Address: Livermore

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Container: SLEEVE	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Matrix: WATER	Matrix: SOIL	Analysis Request: BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2) TOTAL (X) W.E.T. (X)	TAT: 12 hr/24 hr/48 hr/72 hr/1 wk	For Lab Use Only
MW-2	3-4-03	3:53	3		X		X		X								X			X				RUSH	-01
MW-5	"	3:30	"		"		"		"								"			"				"	-02
MW-6	"	3:40	"		"		"		"								"			"				"	-03
MW-7	"	3:46	"		"		"		"								"			"				"	-04

Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
	03/03	1035	Kiff Analytical

Remarks:

Bill to: ROB DONOVAN

Distribution: White - Lab, Yellow - File, Pink - Originator

Forms/coc 121001.fh9