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15 October 2005
Project No. 01LV

Jerry Wickham
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: **Third Quarter 2005 Status Report**
1619 1st Street, Livermore, California
Tesoro No. 67076 (Former Beacon 3604); ACEH Case No. RO0000434

Dear Mr. Wickham:

Arctos Environmental (Arctos), on behalf of Tesoro Petroleum Companies, Inc. (Tesoro), has prepared this letter report summarizing project activities for the third quarter 2005 at the subject site (Figure 1). From July through September 2005, Arctos completed the following tasks:

- Quarterly groundwater monitoring
- Preparation of site conceptual model.

Groundwater Monitoring

Arctos performed quarterly groundwater monitoring on 19 and 20 July 2005. Samples were collected from wells MW-1 through MW-10, VW-2, VW-3, TP-1, and TP-2 (Figure 2). Groundwater monitoring was performed in accordance with Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), guidelines.

Field Activities for Groundwater Sampling

The depth to groundwater of each well was measured and recorded on field data sheets before sampling. Depth to groundwater and groundwater elevations are summarized on Table 1.

During groundwater sampling, field observations of the groundwater were recorded on field data sheets (Appendix A). Groundwater samples were collected after the temperature, pH, and specific conductivity of the groundwater had stabilized to within approximately 10 percent of the previous reading and at least 3 casing volumes of groundwater were removed from the well, unless the well purged dry. Well purge water was stored temporarily on site in 55-gallon drums.

Analytical Program

The groundwater samples were analyzed by Kiff Analytical LLC (Kiff), a State-certified laboratory in Davis, California, for total petroleum hydrocarbons as gasoline (TPHg); benzene, toluene, ethylbenzene, and total xylenes (BTEX); methyl tert-butyl ether (MTBE); and other oxygenates and alcohols using EPA Method 8260B.

Arctos, as Tesoro's Authorized Responsible Party for the site, also has electronically submitted the groundwater monitoring results to the State Water Resources Control Board (SWRCB). The data were submitted in the State-mandated Electronic Data Format (EDF), in accordance with Assembly Bill 2886 requirements for underground storage tank (UST) sites in California.

Summary of Groundwater Results

As indicated in Table 1, the depth to groundwater was measured at approximately 28 to 33 feet below ground surface (437 to 445 feet above mean sea level). Water levels decreased by 4 to 5 feet since May 2005. The water level data indicate that the general direction of water flow is toward the northwest with an estimated gradient of 0.028 (1 foot/36 feet; Figure 3).

The highest TPHg and MTBE concentrations of 42,000 and 63,000 micrograms per liter (µg/l), respectively, were reported at new wells TP-1 and TP-2. The highest benzene concentration of 4,400 µg/l was reported at well MW-2. The highest tert-butyl alcohol (TBA) concentration of 140 µg/l was reported at well MW-6 downgradient of the site. Elevated benzene and MTBE concentrations in groundwater (1,200 and 1,800 µg/l, respectively) are also present approximately 140 feet downgradient of the site at well MW-6.

Historical analytical results for the groundwater samples are summarized in Table 2. Figures 4 and 5 show the isoconcentration contours for benzene and MTBE, respectively. The laboratory report and the chain-of-custody form are in Appendix B.

Site Conceptual Model

Arctos developed a site conceptual model (SCM) using the electronic format developed by Alameda County Environmental Health (ACEH). The SCM summarizes the regional geology, hydrogeology, chronology of site activities, and soil and groundwater impacts. The complete SCM can be viewed at the project internet web site at https://portal.haleyaldrich.com/sites/ext/tesoro with a username and password.

The following site conditions and data gaps were identified during the development of the SCM:

- In the site vicinity, subsurface investigations have found a shallow, upper unconfined water-bearing zone consisting primarily of gravels with sand and clay. Underlying the gravels, an approximately 45-foot-thick, low-permeability clay unit (aquitard) is found from approximately 60 to 110 feet below grade approximately 800 feet downgradient of the site. The presence of the aquitard has not been verified at the site during previous investigations.

- The highest MTBE concentrations are 12,000 and 63,000 µg/l at wells TP-1 and TP-2, located downgradient of the dispenser islands. The water table is currently above the top of the well screen at well MW-2, which is adjacent to well TP-1. The higher MTBE concentrations at wells TP-1 and TP-2 could indicate the presence of significant MTBE mass in the shallower portion of the water-bearing zone.

- During installation of wells TP-1 and TP-2 in July 2005, benzene and MTBE were detected in soil at depths from 30 to 40 feet below grade with the vertical extent undefined. Variations in historical groundwater elevation measurements indicate the possible presence of a submerged source zone to a depth of 45 feet below grade.

Figures 6 and 7 show recent soil and groundwater concentrations on geologic cross sections.

Proposed Site Investigation

Arctos recommends conducting additional site investigation activities based on the results of the groundwater monitoring and the data gaps identified in the SCM. The objectives of the investigation are to (1) identify the depth of the regional aquitard at and downgradient of the site, (2) determine the vertical extent of impacted soil and groundwater at and

downgradient of the site, and (3) identify possible source areas in the vadose zone at the site.

To meet these objectives Arctos proposes the following scope of work:

- Mark the boring locations and notify Underground Service Alert (USA) to identify subsurface utilities
- Collect soil gas samples at an approximate depth of 5 feet below grade at eight locations across the site (Figure 2)
- Install six soil borings for delineation of vertical and horizontal impacts to groundwater (Figure 2)
- Collect soil samples continuously to the depth of the aquitard for visual logging and for laboratory analysis at 10-foot intervals (Figures 6 and 7)
- Collect groundwater grab samples from the soil borings at depths of approximately 30 to 34 feet below grade (just below the water table), 46 to 50 feet below grade (middle of the saturated interval), and 60 to 64 feet below grade (bottom of the saturated interval above the aquitard) for laboratory analysis (Figures 6 and 7).
- Deliver soil and groundwater samples to a State-certified laboratory for analysis
- Perform health and safety monitoring during field activities
- Evaluate the field and analytical data and prepare a report.

Orion's field and quality assurance/quality control (QA/QC) procedures are described in Attachment C. These activities will be conducted under the supervision of a California registered geologist or civil engineer.

Analytical Program

The soil and groundwater samples will be submitted to Kiff and analyzed for TPHg, BTEX, MTBE, and other oxygenates by EPA Method 8260B. Laboratory analytical QA/QC procedures are in Attachment C.

Data Evaluation and Report Preparation

Results of the site investigation will be submitted to ACEH in the quarterly status report after completion of the field work and receipt of the final analytical laboratory report. The report will summarize findings and will include figures showing actual sampling locations, tables summarizing the analytical results, field procedures, boring logs, final laboratory reports, and signed chain-of-custody forms. Results will also be included in the SCM with a proposed project schedule.

If you have any questions or comments, please call Mike Purchase at 510/525-2180 or Jeff Gwinn at 562/988-2755.

Very truly yours,

ARCTOS ENVIRONMENTAL

FOR Michael P. Purchase
Senior Project Manager

Jeffrey P. Gwinn, P.E.
Vice President

REGISTERED PROFESSIONAL ENGINEER
JEFFREY P. GWINN
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Copy: Chuck Miller – USA Petroleum Corporation
Bettie Graham – Regional Water Quality Control Board, San Francisco Bay Region

Attachments: Table 1 – Well and Groundwater Elevations
Table 2 – Groundwater Analytical Results
Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Groundwater Elevation Contour
Figure 4 – Benzene Concentration Contours
Figure 5 – MTBE Concentration Contours
Figure 6 – Gelogic Cross Section A-A'
Figure 7 – Gelogic Cross Section B-B'
Attachment A – Field Data Sheets
Attachment B – Laboratory Analytical Reports and Chain-of-Custody Form
Attachment C – Field and QA/QC Procedures

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
MW-1	6/1/1993	37.50	474.29	436.79
	6/22/1993	38.46		435.83
	10/6/1993	42.22		432.07
	1/13/1994	34.52		439.77
	3/30/1994	31.93		442.36
	4/25/1994	33.49		440.80
	8/12/1994	41.03		433.26
	12/14/1994	38.63		435.66
	2/10/1995	30.80		443.49
	6/15/1995	25.46		448.83
	9/26/1995	31.05		443.24
	12/15/1995	28.11		446.18
	3/21/1996	17.67		456.62
	6/13/1996	22.86		451.43
	9/16/1996	30.04		444.25
	12/2/1996	26.74		447.55
	3/7/1997	20.84		453.45
	6/12/1997	28.71		445.58
	9/29/1997	33.91		440.38
	12/1/1997	34.88		439.41
	3/19/1998	19.83		454.46
	5/29/1998	21.57		452.72
	9/15/1998	31.68		442.61
	11/30/1998	36.80		437.49
	1/17/1999	30.02		444.27
	6/10/1999	29.30		444.99
	9/7/1999	31.41		442.88
	12/13/1999	32.95		441.34
	3/13/2000	25.74		448.55
	6/12/2000	28.24		446.05
	11/10/2000	30.56		443.73
	12/31/2000	31.71		442.58
	3/27/2001	30.43		443.86
	6/30/2001	36.61		437.68

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
MW-1	9/26/2001	45.10	474.29	429.19
(cont.)	12/18/2001	39.39		434.90
	3/18/2002	38.24		436.05
	8/21/2002	36.71		437.58
	12/3/2002	36.85		437.44
	3/4/2003	33.72		440.57
	6/10/2003	31.31		442.98
	9/9/2003	35.05		439.24
	12/23/2003	30.15		444.14
	3/23/2004	26.61		447.68
	5/10/2004	30.31		443.98
	8/4/2004	34.77		439.52
	11/4/2004	33.93		440.36
	1/12/2005	27.82		446.47
	5/2/2005	24.87		449.42
	7/19/2005	29.26		445.03
MW-2	6/1/1993	38.02	472.98	434.96
	6/22/1993	39.07		433.91
	10/6/1993	43.72		429.26
	1/13/1994	35.85		437.13
	3/30/1994	32.82		440.16
	4/25/1994	34.76		438.22
	8/12/1994	44.33		428.65
	12/14/1994	40.00		432.98
	2/10/1995	32.16		440.82
	6/15/1995	25.93		447.05
	9/26/1995	32.42		440.56
	12/15/1995	29.41		443.57
	3/21/1996	17.47		455.51
	6/13/1996	23.69		449.29
	9/16/1996	31.24		441.74
	12/2/1996	26.90		446.08
	3/7/1997	21.33		451.65
	6/12/1997	29.94		443.04

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
MW-2	9/29/1997	34.22	472.98	438.76
(cont.)	12/1/1997	35.94		437.04
	3/19/1998	20.34		452.64
	5/29/1998	22.63		450.35
	9/15/1998	32.30		440.68
	11/30/1998	36.90		436.08
	1/17/1999	30.17		442.81
	6/10/1999	29.98		443.00
	9/7/1999	31.85		441.13
	12/13/1999	33.72		439.26
	3/13/2000	26.54		446.44
	6/12/2000	28.44		444.54
	11/10/2000	31.31		441.67
	12/31/2000	32.68		440.30
	3/27/2001	30.81		442.17
	6/30/2001	37.58		435.40
	9/26/2001	44.97		428.01
	12/18/2001	40.67		432.31
	3/18/2002	38.94		434.04
	6/5/2002	36.45		436.53
	8/21/2002	37.15		435.83
	12/3/2002	36.76		436.22
	3/4/2003	33.60		439.38
	6/10/2003	32.89		440.09
	9/9/2003	35.45		437.53
	12/23/2003	31.79		441.19
	3/23/2004	28.25		444.73
	5/10/2004	30.91		442.07
	8/4/2004	35.36		437.62
	11/4/2004	34.92		438.06
	1/12/2005	29.46		443.52
	5/2/2005	25.61		447.37
	7/19/2005	30.11		442.87

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
MW-3	6/1/1993	36.18	473.37	437.19
	6/22/1993	37.11		436.26
	10/6/093	41.15		432.22
	1/13/1994	33.95		439.42
	3/30/1994	30.97		442.40
	4/25/1994	32.46		440.91
	8/12/1994	41.72		431.65
	12/14/1994	37.62		435.75
	2/10/1995	29.96		443.41
	6/15/1995	23.66		449.71
	9/26/1995	29.62		443.75
	12/15/1995	27.10		446.27
	3/21/1996	15.85		457.52
	6/13/1996	21.31		452.06
	9/16/1996	28.62		444.75
	12/2/1996	25.55		447.82
	3/7/1997	19.77		453.60
	6/12/1997	27.67		445.70
	9/29/1997	29.60		443.77
	12/1/1997	33.37		440.00
	3/19/1998	18.76		454.61
	5/29/1998	20.64		452.73
	9/15/1998	30.70		442.67
	11/30/1998	34.96		438.41
	1/17/1999	28.81		444.56
	6/10/1999	28.10		445.27
	9/7/1999	30.38		442.99
	12/13/1999	31.46		441.91
	3/13/2000	24.28		449.09
	6/12/2000	26.80		446.57
	11/10/2000	29.47		443.90
	12/31/2000	31.38		441.99
	3/27/2001	29.94		443.43
	6/30/2001	37.54		435.83

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
MW-3	9/26/2001	45.17	473.37	428.20
(cont.)	12/18/2001	39.41		433.96
	3/18/2002	37.73		435.64
	6/5/2002	35.35		438.02
	8/21/2002	36.21		437.16
	12/3/2002	35.92		437.45
	3/4/2003	32.75		440.62
	6/10/2003	31.26		442.11
	9/9/2003	34.72		438.65
	12/23/2003	30.47		442.90
	3/23/2004	26.67		446.70
	5/10/2004	30.25		443.12
	8/4/2004	34.70		438.67
	11/4/2004	33.94		439.43
	1/12/2005	28.21		445.16
	5/2/2005	24.56		448.81
	7/19/2005	29.39		443.98
MW-4	3/30/1994	31.56	473.64	442.08
	4/25/1994	32.73		440.91
	8/12/1994	41.61		432.03
	12/14/1994	38.11		435.53
	2/10/1995	30.50		443.14
	6/15/1995	23.63		450.01
	9/26/1995	29.70		443.94
	12/15/1995	27.56		446.08
	3/21/1996	15.63		458.01
	6/13/1996	21.07		452.57
	9/16/1996	28.99		444.65
	12/2/1996	26.04		447.60
	3/7/1997	19.69		453.95
	6/12/1997	28.04		445.60
	9/29/1997	29.91		443.73
	12/1/1997	33.88		439.76
	3/19/1998	18.67		454.97

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
MW-4	5/29/1998	20.16	473.64	453.48
(cont.)	9/15/1998	30.46		443.18
	11/30/1998	34.50		439.14
	1/17/1999	28.30		445.34
	6/10/1999	27.60		446.04
	9/7/1999	30.79		442.85
	12/13/1999	31.60		442.04
	3/13/2000	24.35		449.29
	6/12/2000	26.91		446.73
	11/10/2000	29.71		443.93
	12/31/2000	31.79		441.85
	3/27/2001	29.98		443.66
	6/30/2001	36.88		436.76
	9/26/2001	43.87		429.77
	12/18/2001	39.30		434.34
	3/18/2002	37.75		435.89
	6/5/2002	35.68		437.96
	8/21/2002	36.58		437.06
	12/3/2002	35.90		437.74
	3/4/2003	32.73		440.91
	6/10/2003	31.20		442.44
	9/9/2003	34.64		439.00
	12/23/2003	31.30		442.34
	3/23/2004	26.71		446.93
	5/10/2004	30.33		443.31
	8/4/2004	34.87		438.77
	11/4/2004	34.28		439.36
	1/12/2005	28.67		444.97
	5/2/2005	24.46		449.18
	7/19/2005	29.36		444.28
MW-5	3/30/1994	32.07	472.67	440.60
	4/25/1994	33.65		439.02
	8/12/1994	42.73		429.94
	12/14/1994	38.89		433.78

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
MW-5	2/10/1995	31.44	472.67	441.23
(cont.)	6/15/1995	24.99		447.68
	9/26/1995	30.20		442.47
	12/15/1995	28.56		444.11
	3/21/1996	16.82		455.85
	6/13/1996	22.61		450.06
	9/16/1996	29.78		442.89
	12/2/1996	26.51		446.16
	3/7/1997	21.91		450.76
	9/29/1997	31.74		440.93
	12/1/1997	34.05		438.62
	3/19/1998	20.93		451.74
	5/29/1998	21.30		451.37
	9/15/1998	31.32		441.35
	11/30/1998	35.44		437.23
	1/17/1999	29.59		443.08
	6/10/1999	28.05		444.62
	9/7/1999	31.11		441.56
	12/13/1999	32.66		440.01
	3/13/2000	25.87		446.80
	6/12/2000	28.15		444.52
	11/10/2000	30.05		442.62
	12/31/2000	31.81		440.86
	3/27/2001	30.57		442.10
	6/30/2001	37.24		435.43
	9/26/2001	44.53		428.14
	12/18/2001	40.65		432.02
	3/18/2002	38.75		433.92
	6/5/2002	36.21		436.46
	8/21/2002	36.76		435.91
	12/3/2002	36.12		436.55
	3/4/2003	32.90		439.77
	6/10/2003	33.04		439.63
	9/9/2003	34.20		438.47

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
MW-5	12/23/2003	31.38	472.67	441.29
(cont.)	3/23/2004	27.51		445.16
	5/10/2004	31.12		441.55
	8/4/2004	35.09		437.58
	11/4/2004	34.34		438.33
	1/12/2005	29.19		443.48
	5/2/2005	25.31		447.36
	7/19/2005	30.49		442.18
MW-6	3/30/1994	33.38	471.93	438.55
	4/25/1994	35.49		436.44
	8/12/1994	45.14		426.79
	12/14/1994	40.99		430.94
	2/10/1995	33.34		438.59
	6/15/1995	26.88		445.05
	9/26/1995	33.55		438.38
	12/15/1995	30.32		441.61
	3/21/1996	18.89		453.04
	6/13/1996	24.62		447.31
	9/16/1996	32.64		439.29
	12/2/1996	27.42		444.51
	3/7/1997	22.13		449.80
	6/12/1997	31.02		440.91
	9/29/1997	35.77		436.16
	12/1/1997	37.14		434.79
	3/19/1998	21.10		450.83
	5/29/1998	23.26		448.67
	9/15/1998	33.50		438.43
	11/30/1998	38.73		433.20
	1/17/1999	32.05		439.88
	6/10/1999	31.44		440.49
	9/7/1999	33.94		437.99
	12/13/1999	35.84		436.09
	3/13/2000	28.45		443.48
	6/12/2000	30.52		441.41

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
MW-6	11/10/2000	32.99	471.93	438.94
(cont.)	12/31/2000	34.95		436.98
	3/27/2001	32.72		439.21
	6/30/2001	39.86		432.07
	9/26/2001	Dry		Dry
	12/18/2001	43.36		428.57
	3/18/2002	41.29		430.64
	6/5/2002	38.35		433.58
	8/21/2002	39.02		432.91
	12/3/2002	38.76		433.17
	3/4/2003	35.13		436.80
	6/10/2003	34.15		437.78
	9/9/2003	37.66		434.27
	12/23/2003	33.43		438.50
	3/23/2004	29.96		441.97
	5/10/2004	32.98		438.95
	8/4/2004	37.02		434.91
	11/4/2004	37.03		434.90
	1/12/2005	32.01		439.92
	5/2/2005	27.30		444.63
	7/19/2005	32.27		439.66
MW-7	3/30/1994	31.98	472.33	440.35
	4/25/1994	33.56		438.77
	8/12/1994	43.35		428.98
	12/14/1994	39.34		432.99
	2/10/1995	32.11		440.22
	6/15/1995	25.51		446.82
	9/26/1995	31.43		440.90
	12/15/1995	28.97		443.36
	3/21/1996	17.36		454.97
	6/13/1996	23.47		448.86
	9/16/1996	31.35		440.98
	12/2/1996	27.11		445.22
	3/7/1997	21.33		451.00

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
MW-7	6/12/1997	29.90	472.33	442.43
(cont.)	9/29/1997	34.37		437.96
	12/1/1997	36.46		435.87
	3/19/1998	20.33		452.00
	5/29/1998	22.30		450.03
	9/15/1998	32.54		439.79
	11/30/1998	37.96		434.37
	1/17/1999	31.04		441.29
	6/10/1999	29.89		442.44
	9/7/1999	32.38		439.95
	12/13/1999	33.98		438.35
	3/13/2000	27.09		445.24
	6/12/2000	28.76		443.57
	11/10/2000	31.54		440.79
	12/31/2000	32.76		439.57
	3/27/2001	30.97		441.36
	6/30/2001	37.50		434.83
	9/26/2001	45.11		427.22
	12/18/2001	41.13		431.20
	3/18/2002	39.22		433.11
	6/5/2002	36.55		435.78
	8/21/2002	36.81		435.52
	12/3/2002	36.52		435.81
	3/4/2003	32.60		439.73
	6/10/2003	31.33		441.00
	9/9/2003	34.71		437.62
	12/23/2003	30.80		441.53
	3/23/2004	26.41		445.92
	5/10/2004	29.86		442.47
	8/4/2004	34.06		438.27
	11/4/2004	34.12		438.21
	1/12/2005	28.83		443.50
	5/2/2005	24.66		447.67
	7/19/2005	29.07		443.26

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
MW-8	12/23/2003	32.01	471.18	439.17
	3/23/2004	28.50		442.68
	5/10/2004	31.44		439.74
	8/4/2004	35.11		436.07
	11/4/2004	34.77		436.41
	1/12/2005	29.66		441.52
	5/2/2005	25.91		445.27
	7/19/2005	30.56		440.62
MW-9	12/23/2003	34.03	470.78	436.75
	3/23/2004	30.01		440.77
	5/10/2004	33.61		437.17
	8/4/2004	37.47		433.31
	11/4/2004	37.44		433.34
	5/2/2005	27.73		443.05
	7/19/2005	32.90		437.88
MW-10	12/23/2003	33.80	471.63	437.83
	3/23/2004	28.68		442.95
	5/10/2004	32.15		439.48
	8/4/2004	36.40		435.23
	11/4/2004	36.21		435.42
	1/12/2005	31.64		439.99
	5/2/2005	27.01		444.62
	7/19/2005	31.59		440.04
VW-2	8/4/2004	34.13	473.28	439.15
	11/4/2004	34.75		438.53
	1/12/2005	29.35		443.93
	5/2/2005	25.34		447.94
	7/19/2005	29.76		443.52
VW-3	8/4/2004	32.89	474.38	441.49
	11/4/2004	34.78		439.60
	1/12/2005	29.51		444.87
	5/2/2005	24.79		449.59
	7/19/2005	28.91		445.47
TP-1	7/19/2005	29.91	472.82	442.91

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
TP-2	7/19/2005	29.67	472.93	443.26
MW-A	1/17/1999	30.13	NM[(d)]	NM
MW-B	1/17/1999	30.29	NM	NM
MW-C	1/17/1999	30.60	NM	NM
MW-D	1/17/1999	31.32	NM	NM
MW-E	1/17/1999	31.36	NM	NM
MW-W	1/17/1999	30.91	NM	NM

(a) Difference between Depth to Water and Depth to Free Product.
(b) Elevation of PVC well casing (north edge) surveyed relative to mean sea level (MSL).
Wells were surveyed by Cross Land Surveying, Inc., per AB 2886 requirements on 31 August 2005.
Benchmark K2-741, elevation is 467.835 feet above MSL.
(c) Potentiometric Surface Elevation = (Casing Elevation - Depth to Water) + (0.89)(Free Product Thickness)
assuming a free product specific gravity of 0.89.
(d) NM = Well not surveyed.

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (µg/l)	Benzene[b] (µg/l)	Toluene[b] (µg/l)	Ethylbenzene[b] (µg/l)	Xylenes[b] (µg/l)	MTBE[b] (µg/l)	DIPE[b] (µg/l)	ETBE[b] (µg/l)	TAME[b] (µg/l)	TBA[b] (µg/l)	Methanol[b] (µg/l)	Ethanol[b] (µg/l)	1,2-DCA[b] (µg/l)	EDB[b] (µg/l)	Dissolved Oxygen[c] (mg/l)
MW-1	6/1/1993	27,000	2,200	400	ND<0.5[d]	4,900	-[e]	-	-	-	-	-	-	-	-	-
	6/22/1993	87,000	8,000	10,000	260	10,000	-	-	-	-	-	-	-	-	-	-
	10/6/1993	40,000	4,700	6,500	740	5,300	-	-	-	-	-	-	-	-	-	-
	1/13/1994	9,400	1,300	9,500	110	850	-	-	-	-	-	-	-	-	-	-
	3/30/1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/25/1994	11,000	1,500	1,800	290	1,700	-	-	-	-	-	-	-	-	-	-
	8/12/1994	11,000	550	330	260	1,400	-	-	-	-	-	-	-	-	-	-
	12/14/1994	11,000	1,000	1,200	320	1,500	-	-	-	-	-	-	-	-	-	-
	2/10/1995	9,300	1,200	1,500	280	1,500	-	-	-	-	-	-	-	-	-	-
	6/15/1995	140	5.6	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	9/26/1995	410	140	ND<0.5	ND<0.5	43	-	-	-	-	-	-	-	-	-	-
	12/15/1995	740	250	ND<1.3	ND<1.3	87	-	-	-	-	-	-	-	-	-	-
	3/21/1996	ND<50	0.52	ND<0.5	ND<0.5	0.51	-	-	-	-	-	-	-	-	-	-
	6/13/1996	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	9/16/1996	720	70	ND<0.5	1.0	5.1	ND<5	-	-	-	-	-	-	-	-	-
	12/2/1996	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	3/7/1997	600	6.7	ND<0.5	1.2	1.8	ND<5	-	-	-	-	-	-	-	-	-
	6/12/1997	18,000	180	800	410	1,800	ND<5	-	-	-	-	-	-	-	-	-
	9/29/1997	350	120	1.5	ND<0.5	12	ND<5	-	-	-	-	-	-	-	-	-
	12/1/1997	ND<50	7.0	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	3/19/1998	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	5/29/1998	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	9/15/1998	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	11/30/1998	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	1/17/1999	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	6/10/1999	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	9/7/1999	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	12/13/1999	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	3/13/2000	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	6/12/2000	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	11/10/2000	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (µg/l)	Benzene[b] (µg/l)	Toluene[b] (µg/l)	Ethylbenzene[b] (µg/l)	Xylenes[b] (µg/l)	MTBE[b] (µg/l)	DIPE[b] (µg/l)	ETBE[b] (µg/l)	TAME[b] (µg/l)	TBA[b] (µg/l)	Methanol[b] (µg/l)	Ethanol[b] (µg/l)	1,2-DCA[b] (µg/l)	EDB[b] (µg/l)	Dissolved Oxygen[c] (mg/l)
MW-1	12/31/2000	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-
(cont.)	3/27/2001	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-
	6/30/2001	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-
	9/26/2001	90	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-
	12/18/2001	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-
	11/4/2004	4,500	2.5	5.8	79	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	1/12/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/2/2005	78	0.80	0.70	0.86	2.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<40	ND<5	ND<0.5	ND<0.5	0.9
	7/19/2005	290	ND<0.5	ND<0.5	4.0	4.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
MW-2	6/1/1993	170,000	20,000	21,000	3,300	18,000	-	-	-	-	-	-	-	-	-	-
	6/22/1993	160,000	19,000	22,000	3,500	18,000	-	-	-	-	-	-	-	-	-	-
	10/6/1993	110,000	17,000	17,000	3,000	15,000	-	-	-	-	-	-	-	-	-	-
	1/13/1994	93,000	20,000	19,000	2,300	14,000	-	-	-	-	-	-	-	-	-	-
	3/30/1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/25/1994	41,000	9,600	7,300	840	7,800	-	-	-	-	-	-	-	-	-	-
	8/12/1994	59,000	11,000	11,000	2,300	11,000	-	-	-	-	-	-	-	-	-	-
	12/14/1994	63,000	13,000	13,000	2,200	12,000	-	-	-	-	-	-	-	-	-	-
	2/10/1995	63,000	12,000	12,000	2,200	11,000	-	-	-	-	-	-	-	-	-	-
	6/15/1995	61,000	11,000	12,000	1,900	11,000	-	-	-	-	-	-	-	-	-	-
	9/26/1995	61,000	9,400	11,000	2,300	12,000	-	-	-	-	-	-	-	-	-	-
	12/15/1995	48,000	8,000	8,300	2,200	12,000	-	-	-	-	-	-	-	-	-	-
	3/21/1996	48,000	8,000	7,700	2,400	12,000	-	-	-	-	-	-	-	-	-	-
	6/13/1996	33,000	7,300	8,800	1,900	12,000	ND<250	-	-	-	-	-	-	-	-	-
	9/16/1996	8,600	510	640	180	1,300	ND<250	-	-	-	-	-	-	-	-	-
	12/2/1996	29,000	4,400	4,000	1,300	6,100	ND<130	-	-	-	-	-	-	-	-	-
	3/7/1997	13,000	1,800	1,100	270	2,000	ND<250	-	-	-	-	-	-	-	-	-
	6/12/1997	68,000	7,800	6,600	2,300	11,000	ND<500	-	-	-	-	-	-	-	-	-
	9/29/1997	15,000	1,500	97	740	1,800	ND<250	-	-	-	-	-	-	-	-	-
	12/1/1997	13,000	900	37	860	2,400	ND<250	-	-	-	-	-	-	-	-	-
	3/19/1998	42,000	5,000	3,600	2,000	8,300	ND<250	-	-	-	-	-	-	-	-	-
	5/29/1998	68,000	5,600	4,700	2,400	11,000	ND<250	-	-	-	-	-	-	-	-	-

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (µg/l)	Benzene[b] (µg/l)	Toluene[b] (µg/l)	Ethylbenzene[b] (µg/l)	Xylenes[b] (µg/l)	MTBE[b] (µg/l)	DIPE[b] (µg/l)	ETBE[b] (µg/l)	TAME[b] (µg/l)	TBA[b] (µg/l)	Methanol[b] (µg/l)	Ethanol[b] (µg/l)	1,2-DCA[b] (µg/l)	EDB[b] (µg/l)	Dissolved Oxygen[c] (mg/l)
MW-2	9/15/1998	36,000	3,900	1,200	1,400	7,800	ND<250	-	-	-	-	-	-	-	-	-
(cont.)	11/30/1998	16,000	2,200	59	1,200	1,500	ND<250	-	-	-	-	-	-	-	-	-
	1/17/1999	30,000	4,000	2,200	2,100	9,500	ND<250	-	-	-	-	-	-	-	-	-
	6/10/1999	70,000	6,300	1,800	3,600	14,000	ND<500	-	-	-	-	-	-	-	-	-
	9/7/1999	42,000	3,800	840	1,900	8,000	150	-	-	-	-	-	-	-	-	-
	12/13/1999	14,000	1,400	87	690	110	34	-	-	-	-	-	-	-	-	-
	3/13/2000	38,000	2,400	2,300	1,600	6,400	2,400	-	-	-	-	-	-	-	-	-
	6/12/2000	56,000	4,000	950	2,300	7,200	ND<50	-	-	-	-	-	-	-	-	-
	11/10/2000	35,000	5,100	850	1,500	3,200	230	-	-	-	-	-	-	-	-	-
	12/31/2000	21,000	3,200	420	1,300	1,200	440	-	-	-	-	-	-	-	-	-
	3/27/2001	3,500	420	64	16	280	120	-	-	-	-	-	-	-	-	-
	6/30/2001	1,200	88	4.5	65	37	29	-	-	-	-	-	-	-	-	-
	9/26/2001	53,000	8,500	1,500	2,400	4,600	270	-	-	-	-	-	-	-	-	-
	12/18/2001	26,000	5,400	900	1,500	2,200	430	-	-	-	-	-	-	-	-	-
	1/22/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/18/2002	4,200	240	7.3	200	53	89	-	-	-	-	-	-	-	-	-
	6/5/2002	25,000	3,500	390	1,400	2,400	550	-	-	-	-	-	-	-	-	-
	8/21/2002	10,000	1,200	32	620	300	160	-	-	-	-	-	-	-	-	-
	12/3/2002	3,700	110	2.5	130	11	29	-	-	-	-	-	-	-	-	-
	3/4/2003	8,700	1,100	77	350	540	230	ND<0.5	ND<0.5	ND<10	21	ND<150	ND<5	ND<0.5	ND<0.5	-
	6/10/2003	6,300	660	35	190	120	410	ND<2.5	ND<2.5	ND<5	ND<25	ND<250	ND<25	ND<2.5	ND<2.5	-
	9/9/2003	6,900	500	ND<20	360	29	9,500	ND<20	ND<20	60	ND<200	ND<2,000	ND<200	ND<20	ND<20	-
	12/23/2003	22,000	4,900	1,300	720	2,300	1,700	ND<20	ND<20	21	ND<200	ND<2,000	ND<200	ND<20	ND<20	-
	3/23/2004	45,000	5,200	1,500	1,800	5,000	750	ND<20	ND<20	34	ND<200	ND<2,000	ND<200	ND<20	ND<20	-
	5/10/2004	7,300	1,000	51	240	290	1,800	ND<5	ND<5	14	ND<50	ND<500	ND<50	ND<5	ND<5	-
	8/4/2004	45,000	7,200	1,900	1,800	5,100	2,500	ND<25	ND<25	31	ND<250	ND<2,500	ND<250	ND<25	ND<25	-
	11/4/2004	27,000	4,400	1,100	840	2,200	3,500	ND<9	ND<9	29	ND<50	ND<900	ND<90	ND<9	ND<9	-
	1/12/2005	16,000	1,900	640	570	1,500	1,900	ND<4	ND<4	19	28[f]	ND<400	ND<40	ND<4	ND<4	-
	5/2/2005	44,000	5,200	1,100	1,800	4,800	2,200	ND<20	ND<20	30	ND<200	ND<2,000	ND<200	ND<20	ND<20	0.4
	7/20/2005	21,000	3,000	500	1,000	1,500	4,400	ND<7	ND<7	32	74[f]	ND<700	ND<70	ND<7	ND<7	-

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (µg/l)	Benzene[b] (µg/l)	Toluene[b] (µg/l)	Ethylbenzene[b] (µg/l)	Xylenes[b] (µg/l)	MTBE[b] (µg/l)	DIPE[b] (µg/l)	ETBE[b] (µg/l)	TAME[b] (µg/l)	TBA[b] (µg/l)	Methanol[b] (µg/l)	Ethanol[b] (µg/l)	1,2-DCA[b] (µg/l)	EDB[b] (µg/l)	Dissolved Oxygen[c] (mg/l)
MW-3	6/1/1993	270	4.6	ND<0.5	ND<0.5	1.9	-	-	-	-	-	-	-	-	-	-
	6/22/1993	160	8.2	ND<0.5	ND<0.5	0.72	-	-	-	-	-	-	-	-	-	-
	10/6/093	740	57	110	24	120	-	-	-	-	-	-	-	-	-	-
	1/13/1994	83	2.6	0.67	0.78	4.2	-	-	-	-	-	-	-	-	-	-
	3/30/1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4/25/1994	60	0.75	3.2	0.50	3.6	-	-	-	-	-	-	-	-	-	-
	8/12/1994	310	7.3	14	2.6	13	-	-	-	-	-	-	-	-	-	-
	12/14/1994	75	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	2/10/1995	96	1.4	ND<0.5	ND<0.5	1.8	-	-	-	-	-	-	-	-	-	-
	6/15/1995	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	9/26/1995	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	12/15/1995	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	11/4/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	1/12/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/2/2005	140	ND<0.5	ND<0.5	ND<0.5	0.81	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	0.8
	7/19/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.6	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
MW-4	3/30/1994	120	4.2	15	2.5	26	-	-	-	-	-	-	-	-	-	-
	4/25/1994	65	ND<0.5	1.8	ND<0.5	2.1	-	-	-	-	-	-	-	-	-	-
	8/12/1994	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	12/14/1994	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	2/10/1995	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	6/15/1995	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	9/26/1995	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	12/15/1995	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	11/4/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	1/12/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/2/2005	ND<50	1.8	1.1	1.4	4.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	1.0
	7/19/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
MW-5	3/30/1994	7,500	1,300	20	ND<13	160	-	-	-	-	-	-	-	-	-	-
	4/25/1994	6,500	1,100	41	130	740	-	-	-	-	-	-	-	-	-	-
	8/12/1994	4,000	420	2.9	41	98	-	-	-	-	-	-	-	-	-	-

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (µg/l)	Benzene[b] (µg/l)	Toluene[b] (µg/l)	Ethylbenzene[b] (µg/l)	Xylenes[b] (µg/l)	MTBE[b] (µg/l)	DIPE[b] (µg/l)	ETBE[b] (µg/l)	TAME[b] (µg/l)	TBA[b] (µg/l)	Methanol[b] (µg/l)	Ethanol[b] (µg/l)	1,2-DCA[b] (µg/l)	EDB[b] (µg/l)	Dissolved Oxygen[c] (mg/l)
MW-5	12/14/1994	4,800	660	ND<2.5	33	13	-	-	-	-	-	-	-	-	-	-
(cont.)	2/10/1995	5,200	490	ND<13	23	19	-	-	-	-	-	-	-	-	-	-
	6/15/1995	460	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-	-
	9/26/1995	1,400	61	ND<0.5	3.1	ND<0.5	-	-	-	-	-	-	-	-	-	-
	12/15/1995	2,100	77	1.5	10	1.5	-	-	-	-	-	-	-	-	-	-
	3/21/1996	930	35	2.0	2.0	18	-	-	-	-	-	-	-	-	-	-
	6/13/1996	610	38	0.72	1.9	2.0	ND<5	-	-	-	-	-	-	-	-	-
	9/16/1996	380	29	ND<0.5	0.95	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	12/2/1996	200	1.1	0.64	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	3/7/1997	520	74	ND<0.5	0.58	1.5	ND<5	-	-	-	-	-	-	-	-	-
	6/12/1997	140	5.3	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	9/29/1997	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	12/1/1997	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	3/19/1998	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	5/29/1998	540	4.1	ND<0.5	ND<0.5	0.52	ND<5	-	-	-	-	-	-	-	-	-
	9/15/1998	67	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	11/30/1998	430	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	1/17/1999	500	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	6/10/1999	66	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	9/7/1999	820	46	1.7	10	21	ND<5	-	-	-	-	-	-	-	-	-
	12/13/1999	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	3/13/2000	270	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	6/12/2000	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-	-
	11/10/2000	2,200	42	1.1	25	30	8.6	-	-	-	-	-	-	-	-	-
	12/31/2000	1,300	21	ND<0.5	4.3	2.6	10	-	-	-	-	-	-	-	-	-
	3/27/2001	1,200	11	ND<0.5	2.6	ND<0.5	21	-	-	-	-	-	-	-	-	-
	6/30/2001	1,400	4.8	ND<0.5	1.5	0.56	14	-	-	-	-	-	-	-	-	-
	9/26/2001	660	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.0	-	-	-	-	-	-	-	-	-
	12/18/2001	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-
	1/22/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/18/2002	890	0.65	ND<0.5	ND<0.5	ND<0.5	3.1	-	-	-	-	-	-	-	-	-

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (µg/l)	Benzene[b] (µg/l)	Toluene[b] (µg/l)	Ethylbenzene[b] (µg/l)	Xylenes[b] (µg/l)	MTBE[b] (µg/l)	DIPE[b] (µg/l)	ETBE[b] (µg/l)	TAME[b] (µg/l)	TBA[b] (µg/l)	Methanol[b] (µg/l)	Ethanol[b] (µg/l)	1,2-DCA[b] (µg/l)	EDB[b] (µg/l)	Dissolved Oxygen[c] (mg/l)
MW-5	6/5/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(cont.)	8/21/2002	2,100	20	ND<0.5	63	4	7	-	-	-	-	-	-	-	-	-
	12/3/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/4/2003	490	10	ND<0.5	2.2	ND<0.5	1.0	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	6/10/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9/9/2003	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	12/23/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/23/2004	440	2.3	ND<0.5	1.0	5.9	2.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/10/2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8/4/2004	160	ND<0.5	ND<0.5	ND<0.5	0.71	0.94	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	11/4/2004	290	0.74	ND<0.5	0.58	1.3	0.61	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	1/12/2005	300	ND<0.5	ND<0.5	0.51	1.6	0.73	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/2/2005	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	2.8
	7/20/2005	330	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.1	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
MW-6	3/30/1994	63,000	21,000	8,600	1,700	12,000	-	-	-	-	-	-	-	-	-	-
	4/25/1994	77,000	22,000	12,000	2,300	16,000	-	-	-	-	-	-	-	-	-	-
	8/12/1994	65,000	12,000	8,100	2,200	16,000	-	-	-	-	-	-	-	-	-	-
	12/14/1994	65,000	18,000	9,500	2,200	14,000	-	-	-	-	-	-	-	-	-	-
	2/10/1995	63,000	21,000	8,400	2,000	14,000	-	-	-	-	-	-	-	-	-	-
	6/15/1995	75,000	20,000	11,000	2,100	15,000	-	-	-	-	-	-	-	-	-	-
	9/26/1995	62,000	15,000	9,600	1,700	12,000	-	-	-	-	-	-	-	-	-	-
	12/15/1995	61,000	15,000	9,000	2,300	15,000	-	-	-	-	-	-	-	-	-	-
	3/21/1996	65,000	18,000	9,800	2,400	16,000	-	-	-	-	-	-	-	-	-	-
	6/13/1996	29,000	8,600	3,300	2,200	12,000	ND<250	-	-	-	-	-	-	-	-	-
	9/16/1996	42,000	6,400	1,800	2,100	11,000	ND<250	-	-	-	-	-	-	-	-	-
	12/2/1996	28,000	3,000	1,100	970	8,300	ND<500	-	-	-	-	-	-	-	-	-
	3/7/1997	12,000	2,000	190	520	2,300	ND<250	-	-	-	-	-	-	-	-	-
	6/12/1997	37,000	3,900	470	1,600	6,200	ND<100	-	-	-	-	-	-	-	-	-
	9/29/1997	34,000	3,500	370	1,600	5,200	ND<100	-	-	-	-	-	-	-	-	-
	12/1/1997	20,000	2,100	ND<10	1,200	2,200	ND<100	-	-	-	-	-	-	-	-	-
	3/19/1998	24,000	2,900	460	1,100	3,400	ND<100	-	-	-	-	-	-	-	-	-

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (µg/l)	Benzene[b] (µg/l)	Toluene[b] (µg/l)	Ethylbenzene[b] (µg/l)	Xylenes[b] (µg/l)	MTBE[b] (µg/l)	DIPE[b] (µg/l)	ETBE[b] (µg/l)	TAME[b] (µg/l)	TBA[b] (µg/l)	Methanol[b] (µg/l)	Ethanol[b] (µg/l)	1,2-DCA[b] (µg/l)	EDB[b] (µg/l)	Dissolved Oxygen[c] (mg/l)
MW-6	5/29/1998	38,000	3,500	700	1,800	5,200	ND<100	-	-	-	-	-	-	-	-	-
(cont.)	9/15/1998	22,000	1,900	110	1,400	3,000	ND<100	-	-	-	-	-	-	-	-	-
	11/30/1998	9,900	770	16	820	710	ND<100	-	-	-	-	-	-	-	-	-
	1/17/1999	14,000	2,200	160	1,700	3,600	ND<100	-	-	-	-	-	-	-	-	-
	6/10/1999	22,000	1,600	160	1,400	2,900	5.5	-	-	-	-	-	-	-	-	-
	9/7/1999	17,000	1,400	33	1,300	1,800	ND<50	-	-	-	-	-	-	-	-	-
	12/13/1999	16,000	790	9.2	840	780	ND<25	-	-	-	-	-	-	-	-	-
	3/13/2000	16,000	790	85	780	1,600	ND<25	-	-	-	-	-	-	-	-	-
	6/12/2000	24,000	1,100	150	1,300	2,300	5,600	-	-	-	-	-	-	-	-	-
	11/10/2000	13,000	440	7	760	350	1,000	-	-	-	-	-	-	-	-	-
	12/31/2000	12,000	680	8	820	190	1,400	-	-	-	-	-	-	-	-	-
	3/27/2001	14,000	330	17	940	670	380	-	-	-	-	-	-	-	-	-
	6/30/2001	750	45	0.93	47	14	54	-	-	-	-	-	-	-	-	-
	9/26/2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/18/2001	43,000	3,800	350	1,900	3,000	900	-	-	-	-	-	-	-	-	-
	1/22/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/18/2002	33,000	2,600	120	1,800	2,800	740	-	-	-	-	-	-	-	-	-
	6/5/2002	10,000	1,100	16	700	180	600	-	-	-	-	-	-	-	-	-
	8/21/2002	10,000	1,200	23	710	290	370	-	-	-	-	-	-	-	-	-
	12/3/2002	16,000	1,700	63	970	630	1,500	-	-	-	-	-	-	-	-	-
	3/4/2003	16,000	1,700	25	1,200	40	7,700	ND<20	ND<20	ND<70	ND<200	ND<2,000	ND<200	ND<20	ND<20	-
	6/10/2003	9,500	860	15	380	47	2,600	ND<5	ND<5	18	ND<50	ND<500	ND<50	ND<5	ND<5	-
	9/9/2003	11,000	1,000	16	630	120	2,500	ND<5	ND<5	20	52	ND<500	ND<50	ND<5	ND<5	-
	12/23/2003	18,000	2,100	41	1,100	390	4,900	ND<10	ND<10	42	ND<100	ND<1,000	ND<100	ND<10	ND<10	-
	3/23/2004	24,000	1,400	71	1,500	2,000	7,500	ND<20	ND<20	66	ND<200	ND<2,000	ND<200	ND<20	ND<20	-
	5/10/2004	6,500	550	<10	71	43	3,700	ND<10	ND<10	31	ND<100	ND<1,000	ND<100	ND<10	ND<10	-
	8/4/2004	8,200	990	19	300	120	3,300	ND<5	ND<5	23	ND<50	ND<500	ND<50	ND<5	ND<5	-
	11/4/2004	9,600	1,100	30	320	160	2,200	ND<4	ND<4	18	22[f]	ND<400	ND<40	ND<4	ND<4	-
	1/12/2005	12,000	1,100	34	600	500	3,600	ND<4	ND<4	31	30[f]	ND<400	ND<40	ND<4	ND<4	-
	5/2/2005	14,000	630	22	610	920	4,000	ND<10	ND<10	32	120[f]	ND<3,000	ND<100	ND<10	ND<10	0.4
	7/20/2005	9,800	1,200	21	340	150	1,800	ND<2.5	ND<2.5	14	140	ND<500	ND<25	ND<2.5	ND<2.5	-

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (µg/l)	Benzene[b] (µg/l)	Toluene[b] (µg/l)	Ethylbenzene[b] (µg/l)	Xylenes[b] (µg/l)	MTBE[b] (µg/l)	DIPE[b] (µg/l)	ETBE[b] (µg/l)	TAME[b] (µg/l)	TBA[b] (µg/l)	Methanol[b] (µg/l)	Ethanol[b] (µg/l)	1,2-DCA[b] (µg/l)	EDB[b] (µg/l)	Dissolved Oxygen[c] (mg/l)
MW-7	3/30/1994	43,000	7,200	2,400	1,600	11,000	-	-	-	-	-	-	-	-	-	-
	4/25/1994	30,000	3,900	1,000	940	6,900	-	-	-	-	-	-	-	-	-	-
	8/12/1994	30,000	3,800	1,400	1,300	7,500	-	-	-	-	-	-	-	-	-	-
	12/14/1994	31,000	3,600	1,200	900	6,400	-	-	-	-	-	-	-	-	-	-
	2/10/1995	27,000	4,000	900	890	5,100	-	-	-	-	-	-	-	-	-	-
	6/15/1995	17,000	920	680	740	4,100	-	-	-	-	-	-	-	-	-	-
	9/26/1995	7,000	200	150	170	810	-	-	-	-	-	-	-	-	-	-
	12/15/1995	11,000	350	170	540	1,900	-	-	-	-	-	-	-	-	-	-
	3/21/1996	12,000	320	100	730	2,500	-	-	-	-	-	-	-	-	-	-
	6/13/1996	5,900	98	19	370	620	ND<50	-	-	-	-	-	-	-	-	-
	9/16/1996	7,800	140	43	440	590	ND<25	-	-	-	-	-	-	-	-	-
	12/2/1996	6,300	87	29	290	430	ND<50	-	-	-	-	-	-	-	-	-
	3/7/1997	4,500	35	19	360	470	ND<25	-	-	-	-	-	-	-	-	-
	6/12/1997	3,900	29	5.2	170	48	ND<5	-	-	-	-	-	-	-	-	-
	9/29/1997	6,100	56	9	340	190	ND<25	-	-	-	-	-	-	-	-	-
	12/1/1997	6,500	24	ND<2.5	400	250	ND<25	-	-	-	-	-	-	-	-	-
	3/19/1998	2,000	20	ND<2.5	73	79	ND<25	-	-	-	-	-	-	-	-	-
	5/29/1998	5,700	22	7.3	290	350	ND<25	-	-	-	-	-	-	-	-	-
	9/15/1998	1,700	15	ND<2.5	44	5.1	ND<25	-	-	-	-	-	-	-	-	-
	11/30/1998	4,800	42	12	270	640	ND<25	-	-	-	-	-	-	-	-	-
	1/17/1999	3,400	33	ND<5	200	190	ND<50	-	-	-	-	-	-	-	-	-
	6/10/1999	1,700	7.8	1.5	23	4.1	ND<5	-	-	-	-	-	-	-	-	-
	9/7/1999	1,900	9.7	2.1	70	2.9	ND<5	-	-	-	-	-	-	-	-	-
	12/13/1999	1,900	8.0	1.1	10	1.1	ND<5	-	-	-	-	-	-	-	-	-
	3/13/2000	1,500	7.5	ND<0.5	6.7	2.9	ND<5	-	-	-	-	-	-	-	-	-
	6/12/2000	1,200	5.4	ND<0.5	5.2	1.0	ND<5	-	-	-	-	-	-	-	-	-
	11/10/2000	1,000	3.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-
	12/31/2000	620	1.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-	-
	3/27/2001	1,200	4.8	ND<0.5	6.7	0.94	ND<0.5	-	-	-	-	-	-	-	-	-
	6/30/2001	2,800	10	1.7	75	170	ND<0.5	-	-	-	-	-	-	-	-	-
	9/26/2001	1,900	16	0.89	2.3	25	ND<0.5	-	-	-	-	-	-	-	-	-

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (µg/l)	Benzene[b] (µg/l)	Toluene[b] (µg/l)	Ethylbenzene[b] (µg/l)	Xylenes[b] (µg/l)	MTBE[b] (µg/l)	DIPE[b] (µg/l)	ETBE[b] (µg/l)	TAME[b] (µg/l)	TBA[b] (µg/l)	Methanol[b] (µg/l)	Ethanol[b] (µg/l)	1,2-DCA[b] (µg/l)	EDB[b] (µg/l)	Dissolved Oxygen[c] (mg/l)
MW-7	12/18/2001	3,000	13	0.88	3.4	3.4	ND<0.5	-	-	-	-	-	-	-	-	-
(cont.)	1/22/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3/18/2002	3,100	7.3	1.5	38	110	ND<0.5	-	-	-	-	-	-	-	-	-
	6/5/2002	1,800	7.6	1.0	39	20	ND<0.5	-	-	-	-	-	-	-	-	-
	8/21/2002	3,300	7.6	0.7	85	36	ND<0.5	-	-	-	-	-	-	-	-	-
	12/3/2002	1,700	5.4	ND<0.5	15	5.5	ND<0.5	-	-	-	-	-	-	-	-	-
	3/4/2003	440	1.8	ND<0.5	0.54	2.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	6/10/2003	550	0.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	9/9/2003	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	12/23/2003	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	3/23/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/10/2004	67	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	8/4/2004	2,600	2.5	ND<0.5	36	31	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	11/4/2004	1,600	2.0	ND<0.5	16	16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	1/12/2005	830	1.6	ND<0.5	15	12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/2/2005	710	ND<0.5	ND<0.5	0.75	0.52	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	0.4
	7/20/2005	1,400	1.1	ND<0.5	9.2	8.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
MW-8	9/5/2003	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-
	12/23/2003	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	7.3	ND<0.5	ND<0.5	-
	3/23/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/10/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	8/4/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	0.86	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	11/4/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	1/12/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/2/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	<5.0	ND<0.5	ND<0.5	1.0
	7/19/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	<5.0	ND<0.5	ND<0.5	-
MW-9	9/5/2003	3,400	23	1.5	110	10	10	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-
	12/23/2003	1,100	2.4	ND<0.5	0.8	0.8	2.1	ND<0.5	ND<0.5	ND<0.5	5.9	ND<50	ND<5	ND<0.5	ND<0.5	-
	3/23/2004	760	8.5	ND<0.5	4.9	0.95	18	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/10/2004	1,100	4.4	ND<0.5	1.3	0.67	11	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	8/4/2004	1,200	3.4	0.59	16	7.6	6.1	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (µg/l)	Benzene[b] (µg/l)	Toluene[b] (µg/l)	Ethylbenzene[b] (µg/l)	Xylenes[b] (µg/l)	MTBE[b] (µg/l)	DIPE[b] (µg/l)	ETBE[b] (µg/l)	TAME[b] (µg/l)	TBA[b] (µg/l)	Methanol[b] (µg/l)	Ethanol[b] (µg/l)	1,2-DCA[b] (µg/l)	EDB[b] (µg/l)	Dissolved Oxygen[c] (mg/l)
MW-9	11/4/2004	610	0.52	ND<0.5	1.3	ND<0.5	2.0	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
(cont.)	1/12/2005	1,400	1.6	0.55	5.5	1.1	2.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/2/2005	1,500	10	0.55	6.7	1.1	27	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	0.1
	7/20/2005	1,800	5.5	0.69	12	1.6	10	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
MW-10	9/5/2003	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-
	12/23/2003	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	3/23/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/10/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	8/4/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	0.61	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	11/4/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	1/12/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/2/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	2.3
	7/19/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
VW-2	8/4/2004	5,700	480	ND<20	600	ND<20	12,000	ND<20	ND<20	110	ND<90	ND<2,000	ND<200	ND<20	ND<20	-
	11/4/2004	5,800	340	ND<20	38	ND<20	10,000	ND<20	ND<20	120	ND<90	ND<2,000	ND<200	ND<20	ND<20	-
	1/12/2005	3,800	210	ND<5	90	54	2,900	ND<5	ND<5	33	26[f]	ND<500	ND<50	ND<5	ND<5	-
	5/2/2005	2,600	84	ND<2	13	7.0	960	ND<2	ND<2	12	57	ND<500	ND<20	ND<2	ND<2	-
	7/20/2005	6,200	240	13	290	480	6,600	ND<2	ND<2	56	59[f]	ND<2,000	ND<20	ND<2	ND<2	-
VW-3	8/4/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	11/4/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	1/12/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	5/2/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
	7/20/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	-
TP-1	7/20/2005	42,000	2,800	1,100	1,700	4,800	12,000	ND<20	ND<20	92	130[f]	ND<2,000	ND<200	ND<20	ND<20	-
TP-2	7/20/2005	26,000	1,800	1,100	1,100	2,500	63,000	ND<150	ND<150	400	ND<700	ND<15,000	ND<1,500	ND<150	ND<150	-
MW-A	1/17/1999	5,800	1,700	85	65	320	ND<5	-	-	-	-	-	-	-	-	-
MW-B	1/17/1999	4,400	240	30	21	39	ND<5	-	-	-	-	-	-	-	-	-
MW-C	1/17/1999	1800	0.8	ND<0.5	ND<0.5	0.55	ND<5	-	-	-	-	-	-	-	-	-
MW-D	1/17/1999	5,600	1,600	130	66	220	ND<5	-	-	-	-	-	-	-	-	-
MW-E	1/17/1999	5,700	1,600	180	180	310	ND<50	-	-	-	-	-	-	-	-	-
	6/10/1999	5,000	1,300	130	320	450	ND<25	-	-	-	-	-	-	-	-	-

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (µg/l)	Benzene[b] (µg/l)	Toluene[b] (µg/l)	Ethylbenzene[b] (µg/l)	Xylenes[b] (µg/l)	MTBE[b] (µg/l)	DIPE[b] (µg/l)	ETBE[b] (µg/l)	TAME[b] (µg/l)	TBA[b] (µg/l)	Methanol[b] (µg/l)	Ethanol[b] (µg/l)	1,2-DCA[b] (µg/l)	EDB[b] (µg/l)	Dissolved Oxygen[c] (mg/l)
MW-W	1/17/1999	23,000	7,600	760	1,400	5,000	ND<50	-	-	-	-	-	-	-	-	-
	6/10/1999	16,000	4,100	420	1,300	4,000	ND<50	-	-	-	-	-	-	-	-	-

(a) Samples collected before July 2005 collected by others; data provided by Delta Environmental Consultants, Inc., Second Quarter 2005 Groundwater Monitoring Report dated 31 July 2005.

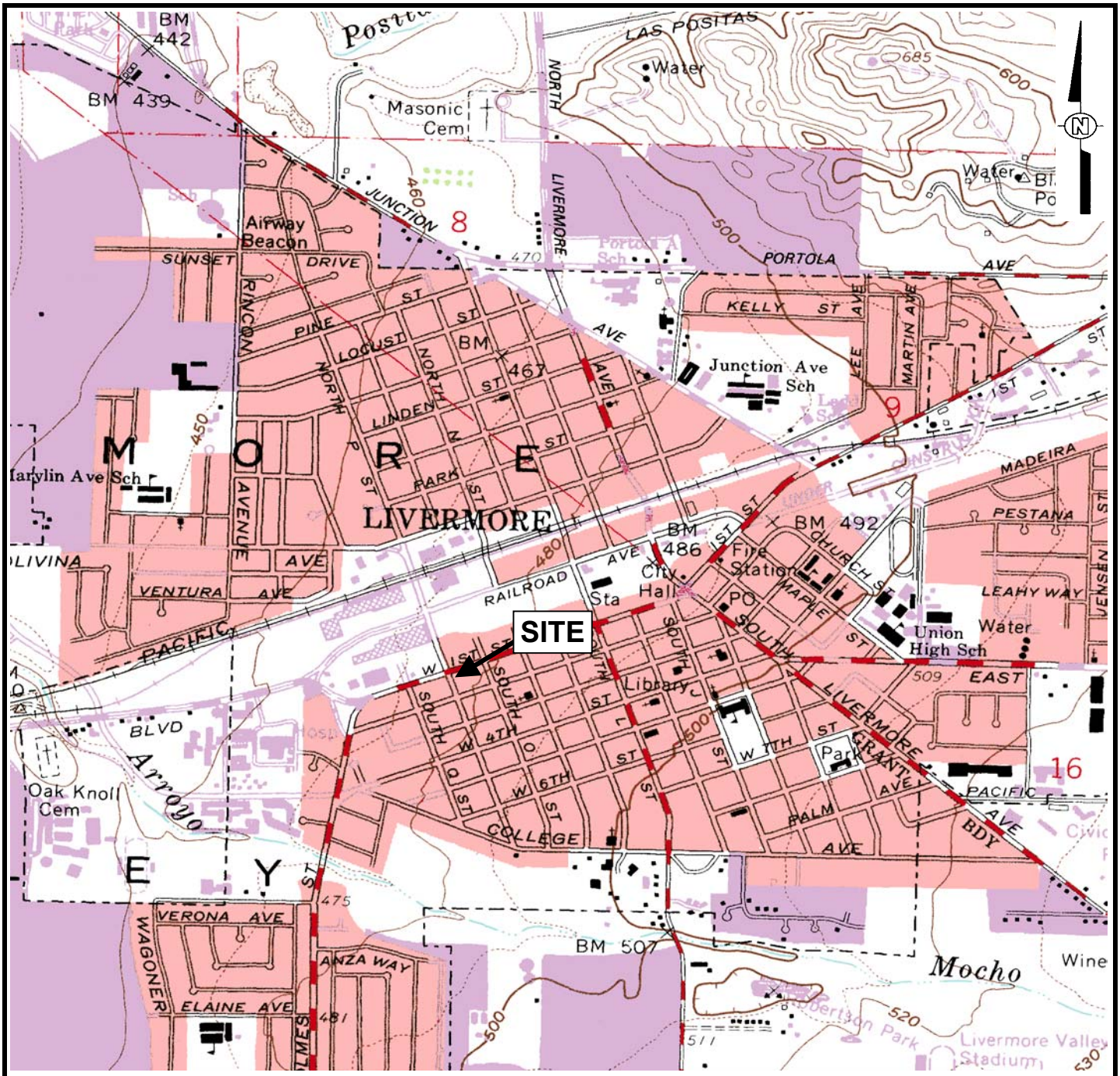
(b) Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes, methyl tert-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), tert-butyl alcohol (TBA), 1,2-dichloroethane (1,2-DCA), and 1,2-dibromoethane (EDB) analyzed by EPA Method 8260; reported in micrograms per liter (µg/l).

(c) Field measurement, reported in milligrams per liter (mg/l).

(d) ND - Not detected at the reporting limit listed.

(e) "-" Not analyzed.

(f) TBA results may be biased slightly high. A fraction of MTBE (typically less than 10 percent) converts to TBA during the analysis of water samples. This conversion effect is considered to be mathematically significant in samples that contain MTBE/TBA ratios of over 20:1.



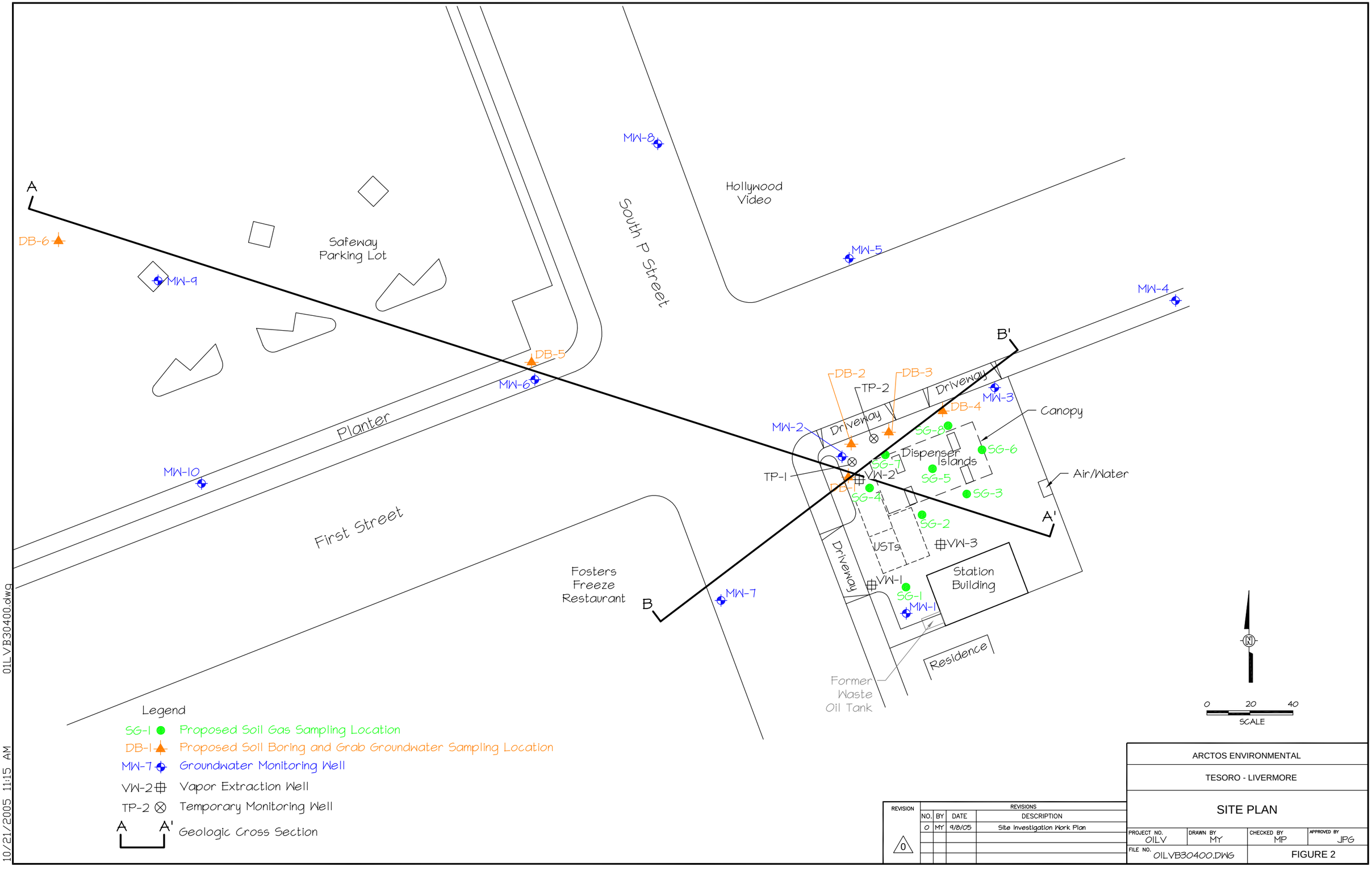
SCALE

0 2000 4000 FEET

REFERENCE

7.5 MINUTE USGS TOPOGRAPHIC MAP OF
LIVERMORE, CALIFORNIA QUADRANGLE
DATE: 1961, PHOTOREVISED 1980
SCALE = 1:24,000

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
SITE LOCATION MAP			
PROJECT NO. 01LV	DRAWN BY MP	CHECKED BY MP	APPROVED BY JG
FILE NO. Site Map.xls		FIGURE 1	



01LVB30400.dwg

10/21/2005 11:15 AM

REVISION	NO.	BY	DATE	DESCRIPTION
0	0	MY	9/8/05	Site Investigation Work Plan

ARCTOS ENVIRONMENTAL

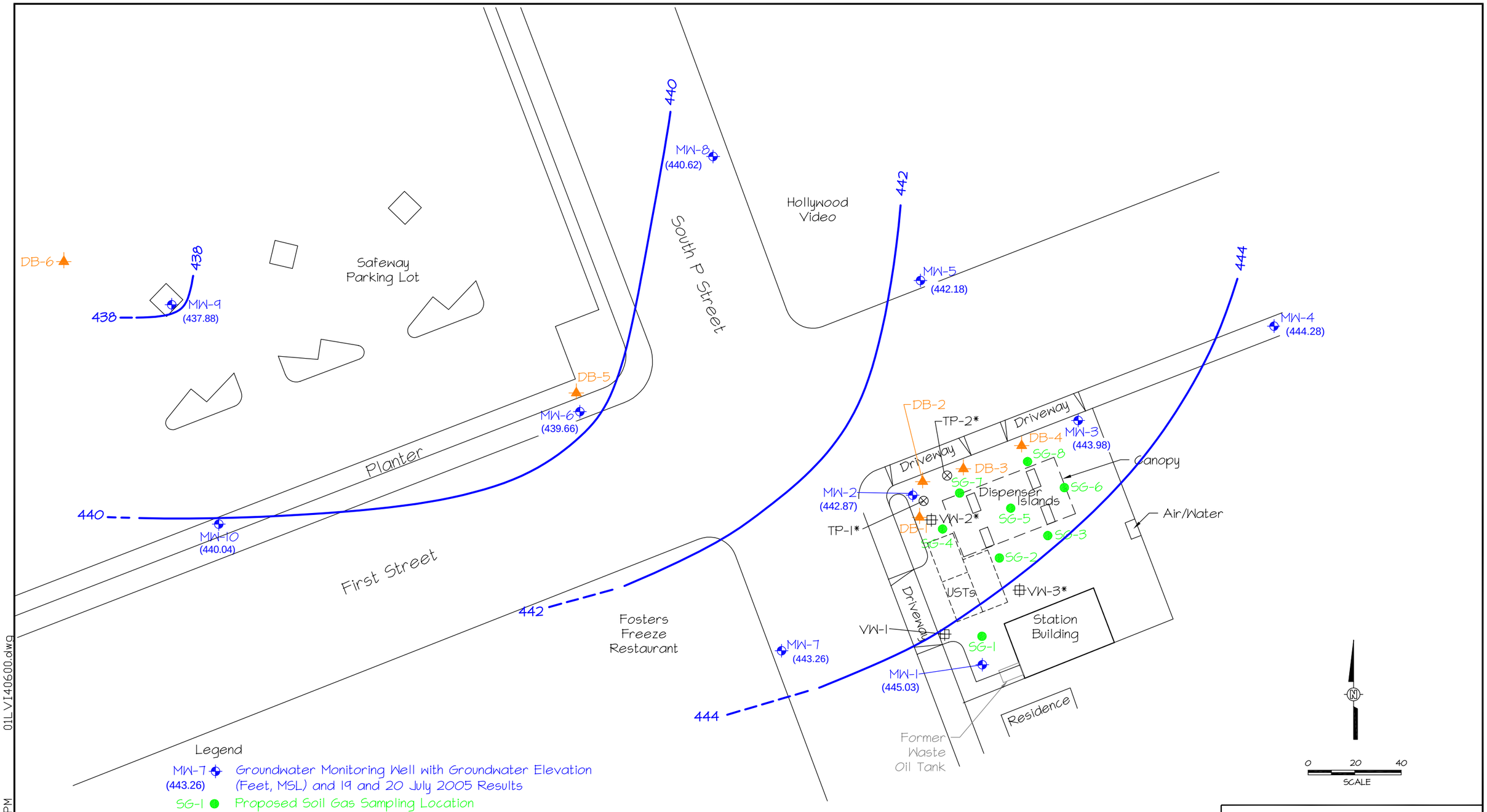
TESORO - LIVERMORE

SITE PLAN

PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
01LV	MY	MP	JPG

FILE NO. 01LVB30400.DWG

FIGURE 2



Legend

- MW-7 (443.26) — Groundwater Monitoring Well with Groundwater Elevation (Feet, MSL) and 19 and 20 July 2005 Results
- SG-1 — Proposed Soil Gas Sampling Location
- DB-1 — Proposed Soil Boring and Grab Groundwater Sampling Location
- VW-2 — Vapor Extraction Well
- TP-2 — Temporary Monitoring Well
- * — Well Casing Not Surveyed
- 442 — Groundwater Elevation Contour (Dashed Where Inferred)

REVISION	NO.	BY	DATE	DESCRIPTION
0	0	MY	8/24/05	Third Quarter 2005 Monitoring Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

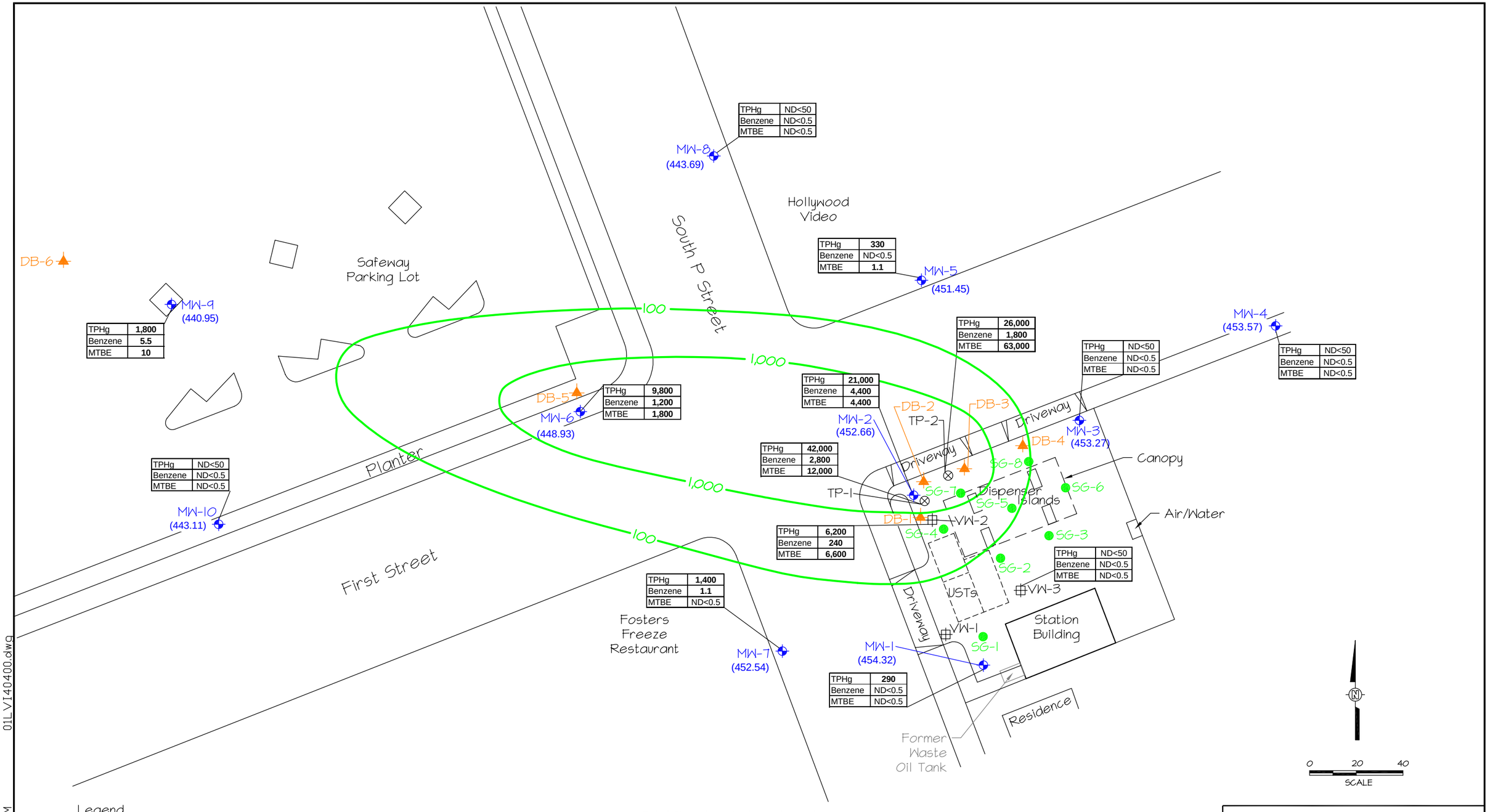
GROUNDWATER ELEVATION CONTOUR

PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
01LV	MY	MP	JPG

FILE NO. 01LVI40600.DWG

FIGURE 3

01LVI40600.dwg 10/21/2005 12:00 PM



Legend

MW-7 (452.54) Groundwater Monitoring Well with Groundwater Elevation (Feet, MSL) and 19 and 20 July 2005 Results

VW-2 Vapor Extraction Well

TP-2 Temporary Monitoring Well

* Well Casing Not Surveyed

ND Not Detected at Reporting Limit Listed

TPHg	290
Benzene	ND<0.5
MTBE	ND<0.5

Total Petroleum Hydrocarbons As Gasoline (µg/l)

Benzene (µg/l)

Methyl Tert-Butyl Ether (MTBE) (µg/l)

100 Benzene Concentration Contour (µg/l)

REVISION	NO.	BY	DATE	DESCRIPTION
0	0	MY	8/24/05	Third Quarter 2005 Monitoring Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

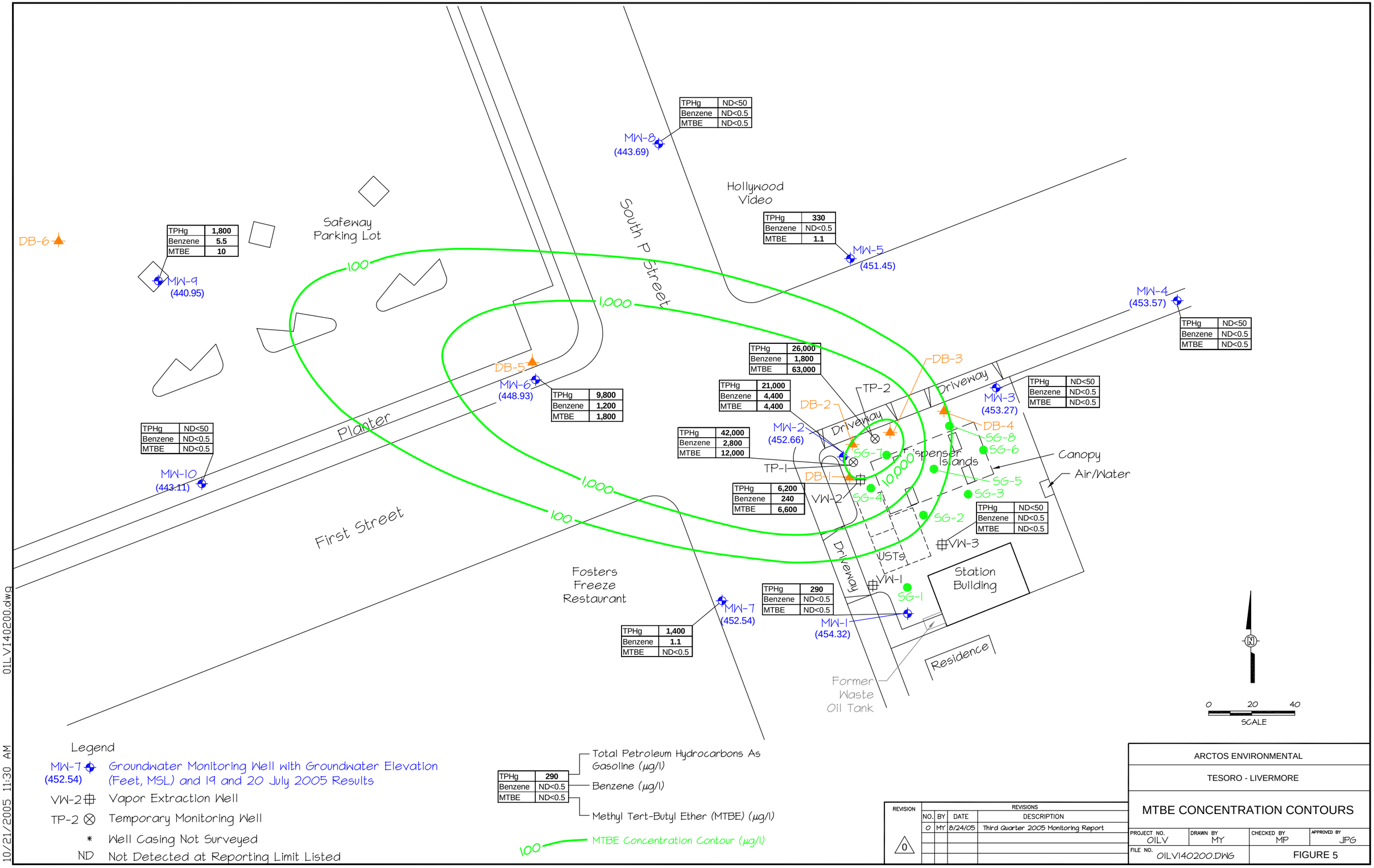
BENZENE CONCENTRATION CONTOURS

PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
01LV	MY	MP	JPG

FILE NO. 01LVI40400.DWG

FIGURE 6

01LVI40400.dwg 10/21/2005 11:45 AM



Legend

MW-7 (452.54) — Groundwater Monitoring Well with Groundwater Elevation (Feet, MSL) and 19 and 20 July 2005 Results

VW-2 — Vapor Extraction Well

TP-2 — Temporary Monitoring Well

* — Well Casing Not Surveyed

ND — Not Detected at Reporting Limit Listed

TPHg 290 / Benzene ND<0.5 / MTBE ND<0.5

- TPHg — Total Petroleum Hydrocarbons As Gasoline (µg/l)
- Benzene (µg/l)
- MTBE — Methyl Tert-Butyl Ether (MTBE) (µg/l)

100 — MTBE Concentration Contour (µg/l)

REVISION	NO.	BY	DATE	DESCRIPTION
0	0	MY	8/24/05	Third Quarter 2005 Monitoring Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

MTBE CONCENTRATION CONTOURS

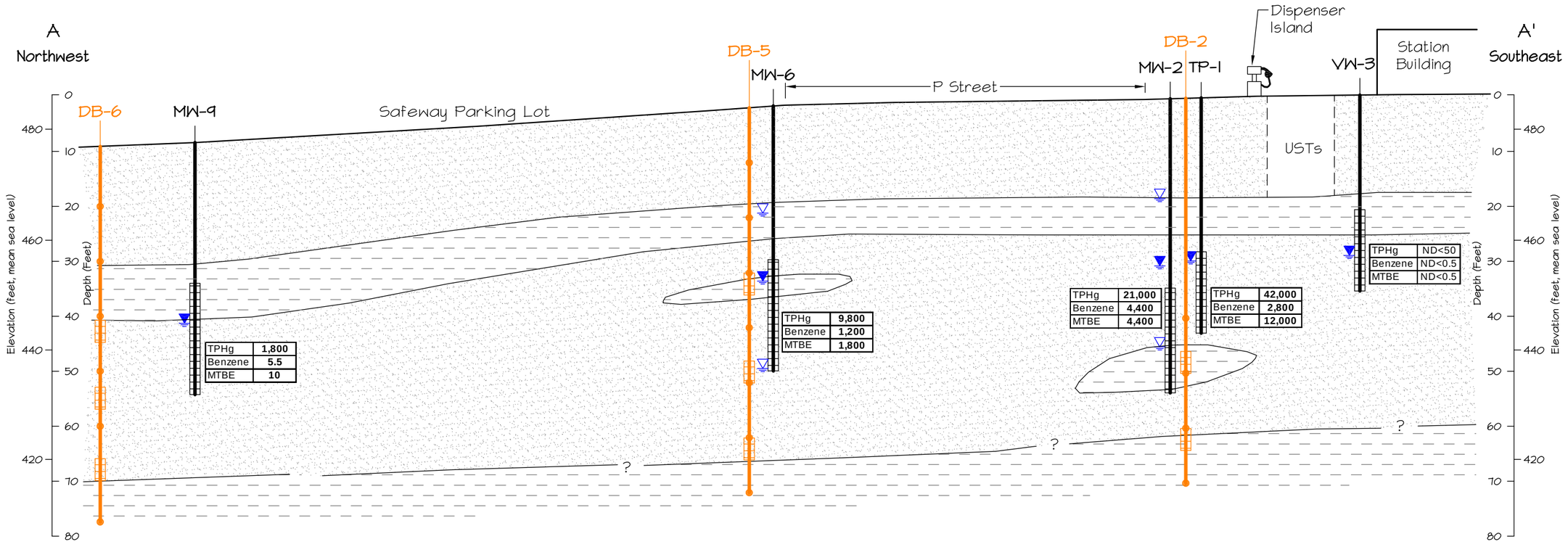
PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
OILV	MY	MP	JPG

FILE NO. OILVI40200.DWG

FIGURE 5

10/21/2005 11:30 AM

OILVI40200.dwg



Legend

Soil Classification

- Clayey and silty gravels and gravelly sands with clay
- Silty clays, clayey sands and silty clays with gravel

MW-9 — Well identification

Groundwater elevation on 19 July 2005

Historical low and high groundwater elevation with reported in September 2001 and March 1996, respectively

Note:
Depth of clay aquitard is estimated from soil lithology at the Livermore Arcade Shopping Center to the northwest.

Screened interval

DB-5 — Proposed soil sample location

Proposed grab groundwater sample location

Groundwater 19 and 20 July 2005 Results

TPHg	1,800
Benzene	5.5
MTBE	10

- TPHg: Total Petroleum Hydrocarbons As Gasoline (µg/l)
- Benzene (µg/l)
- MTBE: Methyl Tert-Butyl Ether (MTBE) (µg/l)

Horizontal Scale: 0 10' 40'

Vertical Scale: 0 10' 20'

REVISION	NO.	BY	DATE	DESCRIPTION
0	0	MY	9/8/05	Site Investigation Work Plan

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

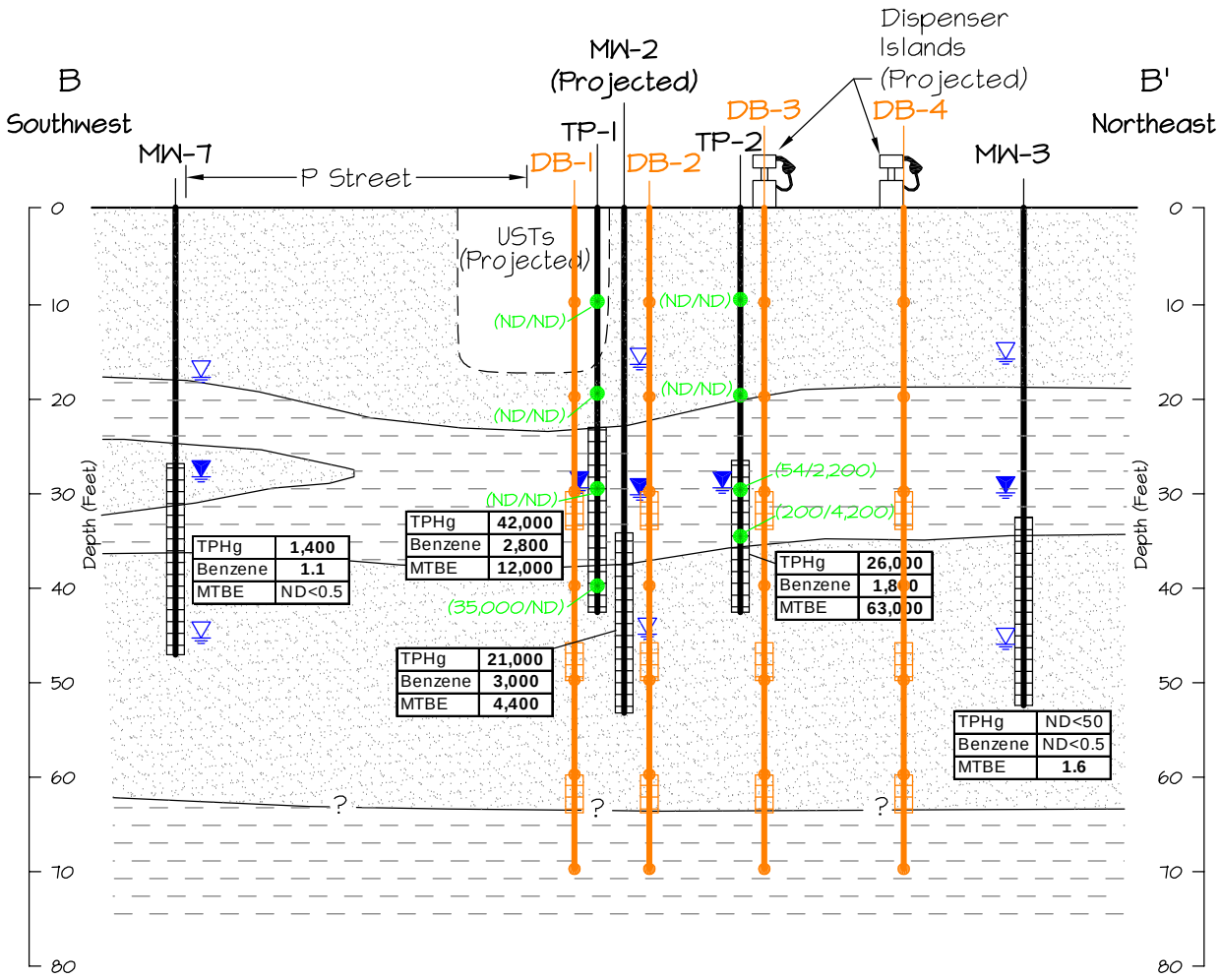
GEOLOGIC CROSS SECTION A-A'

PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
01LV	MY	MP	JPG

FILE NO. 01LVB30300.DWG

FIGURE 6

10/23/2005 5:21 PM 01LVB30300.dwg



Legend

Soil Classification

- Clayey and silty gravels and gravelly sands with clay
- Silty clays, clayey sands and silty clays with gravel

MW-9 — Well identification

(54/2,200) — Soil sample location with Benzene/MTBE results in micrograms per kilogram (µg/kg)

Screened interval

DB-2

- Proposed soil sample location
- Proposed grab groundwater sample location

Groundwater elevation on 19 July 2005

Historical Low and high groundwater elevation reported in September 2001and March 1996, respectively

Groundwater 19 and 20 July 2005 Results

TPHg	1,400 — Total Petroleum Hydrocarbons As Gasoline (µg/l)
Benzene	1.1 — Benzene (µg/l)
MTBE	ND<0.5 — Methyl Tert-Butyl Ether (MTBE) (µg/l)

Note:
Depth of clay aquitard is estimated from soil lithology at the Livermore Arcade Shopping Center to the northwest.

0 10' 40'
Horizontal Scale

0 10' 20'
Vertical Scale

REVISION	NO.	BY	DATE	DESCRIPTION
0	0	MY	9/8/05	Site Investigation Work Plan

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

GEOLOGIC CROSS SECTION B-B'

PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
01LV	MY	MP	JPG

FILE NO. 01LVB30500.DWG

FIGURE 7

APPENDIX A

FIELD DATA SHEETS

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/19/2005*
Well Number: *MW-1*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *29.26*
Total Depth: *53.84*
Water Column: *24.58*
80% Recovery: *34.18*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.65* gal/ft. x *24.58* ft. = *47.9* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
1422	*29.26*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1426	*--*	*10*	*1,011*	*68.2*	*7.33*	*22.83*	*Clear, no odor*
1429	*--*	*20*	*1,028*	*67.9*	*7.20*	*31.84*	*Clear, no odor*
1434	*--*	*30*	*1,025*	*68.0*	*7.20*	*110*	*Slightly cloudy, no odor*
1440	*--*	*40*	*992*	*68.2*	*7.21*	*493*	*Cloudy, no odor*
1442	*--*	*50*	*994*	*68.1*	*7.20*	*395*	*Cloudy, no odor*
1500	*33.49*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *50*

Number of Casing Volumes: *3.1*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *MW-1*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/20/2005*
Well Number: *MW-2*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *30.11*
Total Depth: *53.78*
Water Column: *23.67*
80% Recovery: *34.84*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.65* gal/ft. x *23.67* ft. = *46.2* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
1135	*30.11*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1140	*--*	*10*	*1,167*	*71.4*	*7.07*	*2.61*	*Clear, no odor*
1148	*--*	*20*	*1,160*	*69.6*	*6.97*	*13.5*	*Clear, no odor*
1154	*--*	*30*	*1,154*	*69.5*	*6.96*	*14.09*	*Clear, no odor*
--	*--*	*50*	*1,137*	*69.5*	*6.98*	*16.62*	*Clear, no odor*
1215	*32.28*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *50*

Number of Casing Volumes: *3.2*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *MW-2*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/19/2005*
Well Number: *MW-3*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *29.39*
Total Depth: *52.62*
Water Column: *23.23*
80% Recovery: *34.04*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.65* gal/ft. x *23.23* ft. = *45.3* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
1507	*29.39*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1516	*--*	*18*	*1,058*	*69.3*	*7.34*	*11.16*	*Clear, no odor*
1520	*--*	*24*	*1,061*	*69.8*	*7.30*	*49.16*	*Clear, no odor*
1523	*--*	*36*	*1,067*	*69.5*	*7.29*	*35.62*	*Clear, no odor*
1526	*--*	*46*	*1,066*	*69.2*	*7.29*	*40.93*	*Clear, no odor*
1540	*30.81*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *46*

Number of Casing Volumes: *3.0*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *MW-3*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/19/2005*
Well Number: *MW-4*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *29.36*
Total Depth: *46.7*
Water Column: *17.34*
80% Recovery: *32.83*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.16* gal/ft. x *17.34* ft. = *8.3* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
1059	*29.36*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1101	*--*	*3*	*1,058*	*70*	*7.21*	*54*	*Clear, no odor*
1104	*--*	*8*	*1,088*	*69.2*	*7.33*	*62*	*Clear, no odor*
1106	*--*	*11*	*1,127*	*69.1*	*7.35*	*66*	*Clear, no odor*
1120	*32.80*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *11*

Number of Casing Volumes: *4.0*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *MW-4*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/20/2005*
Well Number: *MW-5*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *30.49*
Total Depth: *46.13*
Water Column: *15.64*
80% Recovery: *33.62*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.16* gal/ft. x *15.64* ft. = *7.5* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
0722	*30.49*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
0729	*--*	*3*	*1,236*	*69.2*	*6.74*	*151*	*Cloudy, no odor*
0733	*--*	*6*	*1,251*	*69.3*	*6.74*	*29.72*	*Clear, no odor*
0735	*--*	*9*	*1,239*	*69.4*	*6.72*	*13.41*	*Clear, no odor*
0745	*32.24*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *9*

Number of Casing Volumes: *3.6*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *MW-5*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/20/2005*
Well Number: *MW-6*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *32.27*
Total Depth: *47.48*
Water Column: *15.21*
80% Recovery: *35.31*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.16* gal/ft. x *15.21* ft. = *7.3* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
1028	*32.27*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1031	*--*	*3*	*1,290*	*70.0*	*6.97*	*38.25*	*Clear, no odor*
1033	*--*	*6*	*1,275*	*69.8*	*6.94*	*26.81*	*Clear, no odor*
1036	*--*	*9*	*1,254*	*69.8*	*6.97*	*18.04*	*Clear, no odor*
1050	*32.80*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *9*

Number of Casing Volumes: *3.7*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *MW-6*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/20/2005*
Well Number: *MW-7*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *29.07*
Total Depth: *46.58*
Water Column: *17.51*
80% Recovery: *32.57*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.16* gal/ft. x *17.51* ft. = *8.4* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
0808	*29.07*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
0812	*--*	*3*	*1,144*	*70.2*	*6.82*	*25.53*	*Clear, no odor*
0816	*--*	*6*	*1,136*	*70.3*	*6.80*	*13.52*	*Clear, no odor*
0819	*--*	*9*	*1,125*	*70.2*	*6.72*	*14.26*	*Clear, no odor*
0830	*31.21*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *9*

Number of Casing Volumes: *3.2*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *MW-7*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/19/2005*
Well Number: *MW-8*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *30.56*
Total Depth: *44.3*
Water Column: *13.74*
80% Recovery: *33.31*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.16* gal/ft. x *13.74* ft. = *6.6* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
--[(a)]	30.56	0	--	--	--	--	Start purging
1155	--	4	1,085	71.4	7.38	343	Cloudy, no odor
1157	--	7	1,103	71.0	7.24	128	Slightly cloudy, no odor
1159	--	9	1,097	71.0	7.22	56	Clear, no odor
1210	32.30	--	--	--	--	--	Collect sample

Total Purged Volume (gallons): *9*

Number of Casing Volumes: *4.1*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *MW-8*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/20/2005*
Well Number: *MW-9*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *32.90*
Total Depth: *44.48*
Water Column: *11.58*
80% Recovery: *35.22*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.16* gal/ft. x *11.58* ft. = *5.6* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
0844	*32.90*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
0847	*--*	*2*	*1,226*	*70.8*	*6.68*	*486*	*Cloudy, no odor*
0849	*--*	*4*	*1,181*	*70.9*	*6.81*	*446*	*Cloudy, no odor*
0852	*--*	*6*	*1,134*	*70.9*	*6.80*	*353*	*Cloudy, no odor*
0910	*35.2*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *6*

Number of Casing Volumes: *3.2*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *MW-9*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/19/2005*
Well Number: *MW-10*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *31.59*
Total Depth: *44.9*
Water Column: *13.31*
80% Recovery: *34.25*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.16* gal/ft. x *13.31* ft. = *6.4* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
1325	*31.59*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1327	*--*	*3*	*1,343*	*70.3*	*7.52*	*114*	*Clear, no odor*
1330	*--*	*8*	*1,363*	*69.8*	*7.53*	*179*	*Slightly cloudy, no odor*
1336	*--*	*10*	*1,360*	*71.8*	*7.49*	*>1,100*	*Cloudy, no odor; dry at 10 gal.*
1705	*34.57*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *10*

Number of Casing Volumes: *4.7*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *MW-10*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/20/2005*
Well Number: *VW-2*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *29.76*
Total Depth: *36.62*
Water Column: *6.86*
80% Recovery: *31.13*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.16* gal/ft. x *6.86* ft. = *3.3* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
1338	*29.76*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1341	*--*	*3*	*1,191*	*70.1*	*6.86*	*500*	*Cloudy, odor*
1345	*--*	*5*	*1,198*	*73.2*	*6.77*	*271*	*Cloudy, odor; dry at 5 gallons*
1510	*34.18*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *5*

Number of Casing Volumes: *4.6*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *VW-2*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/19/2005*
Well Number: *VW-3*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *28.91*
Total Depth: *36.14*
Water Column: *7.23*
80% Recovery: *30.36*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.16* gal/ft. x *7.23* ft. = *3.5* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
1609	*28.91*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1615	*--*	*3*	*1,729*	*72.9*	*6.90*	*48.02*	*Clear, no odor; dry at 3 gallons*
1420	*31.26*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *3*

Number of Casing Volumes: *2.6*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *VW-3*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/20/2005*
Well Number: *TP-1*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *29.91*
Total Depth: *43.16*
Water Column: *13.25*
80% Recovery: *32.56*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.16* gal/ft. x *13.25* ft. = *6.4* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
1241	*29.91*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1244	*--*	*3*	*1,302*	*70.1*	*6.8*	*>1,100*	*Cloudy, no odor*
1246	*--*	*6*	*1,297*	*69.8*	*6.86*	*>1,100*	*Cloudy, no odor*
1248	*--*	*9*	*1,253*	*69.7*	*6.92*	*>1,100*	*Cloudy, no odor*
1305	*32.00*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *9*

Number of Casing Volumes: *4.2*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *TP-1*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

ARCTOS

WELL PURGING AND SAMPLING LOG

Project Name: *Tesoro-Livermore*
Project Number: *01LV*
Location: *1619 1st Street*

Date: *7/20/2005*
Well Number: *TP-2*
Recorded by: *CR*

WELL PURGING:

Purge Method: *12-volt submersible pump*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *29.67*
Total Depth: *42.19*
Water Column: *12.52*
80% Recovery: *32.17*

Purge Volume: 2" casing (0.16 gal/ft.) 4" casing (0.65 gal/ft.) 6" casing (1.47 gal/ft.)

3 casing volumes x *0.16* gal/ft. x *12.52* ft. = *6.0* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	TURBIDITY (NTUs)	NOTES
0930	*29.67*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
0934	*--*	*2*	*1,280*	*69.5*	*7.08*	*>1,100*	*Cloudy, slight odor*
0936	*--*	*4*	*1,311*	*69.3*	*7.15*	*>1,100*	*Cloudy, slight odor*
0938	*--*	*6*	*1,331*	*69.5*	*7.03*	*>1,100*	*Cloudy, slight odor*
0955	*30.33*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *6*

Number of Casing Volumes: *3.0*

WELL SAMPLING:

Sample Method: *New disposable bailer with new nylon line*
Decon. Method: *Not applicable*
Sample Container: *40-ml glass VOA vials w/ HCl*
Sample Identification: *TP-2*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, and conductivity measured using UltraMeter 6P instrument calibrated to calibration fluid standards.
Turbidity measured with LaMott 2020 instrument calibrated to 1.0 and 10 NTU fluid calibration standards.
(a) Measurement not collected.

APPENDIX B

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORM

KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

Mike Purchase
Arctos Environmental
1332 Peralta Avenue
Berkeley, CA

Subject : 16 Water Samples
Project Name : Tesoro - Livermore
Project Number : 67076
P.O. Number : 67076

Dear Mr. Purchase,

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 : 44912
Date : 07/28/2005

Subject : 16 Water Samples
Project Name : Tesoro - Livermore
Project Number : 67076
P.O. Number : 67076

Case Narrative

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

Tert-Butanol results for samples MW-2, VW-2, TP-1 and VW-2-PRE may be biased slightly high and are flagged with a 'J'. A fraction of MtBE (typically less than 1%) converts to Tert-Butanol during the analysis of water samples. We consider this conversion effect to be mathematically significant in samples that contain MtBE/Tert-Butanol in ratios of over 20:1.

Matrix Spike/Matrix Spike Duplicate Results associated with samples MW-9, MW-6, MW-2 for the analyte Benzene were affected by the analyte concentrations already present in the un-spiked sample.

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **MW-1** Matrix : Water Lab Number : 44912-01
Sample Date :07/19/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Ethylbenzene	**4.0**	0.50	ug/L	EPA 8260B	07/27/2005
Total Xylenes	**4.1**	0.50	ug/L	EPA 8260B	07/27/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/27/2005
Methanol	**< 50**	50	ug/L	EPA 8260B	07/27/2005
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/27/2005
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
TPH as Gasoline	**290**	50	ug/L	EPA 8260B	07/27/2005
Toluene - d8 (Surr)	92.5		% Recovery	EPA 8260B	07/27/2005
4-Bromofluorobenzene (Surr)	111		% Recovery	EPA 8260B	07/27/2005

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **MW-2** Matrix : Water Lab Number : 44912-02
Sample Date :07/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**3000**	7.0	ug/L	EPA 8260B	07/28/2005
Toluene	**500**	7.0	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**1000**	7.0	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**1500**	7.0	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**4400**	7.0	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 7.0**	7.0	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 7.0**	7.0	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**32**	7.0	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**74 J**	40	ug/L	EPA 8260B	07/28/2005
Methanol	**< 700**	700	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 70**	70	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 7.0**	7.0	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 7.0**	7.0	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**21000**	700	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	96.9		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	115		% Recovery	EPA 8260B	07/28/2005

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **MW-3** Matrix : Water Lab Number : 44912-03
Sample Date :07/19/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**1.6**	0.50	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
Methanol	**< 50**	50	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	96.6		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	116		% Recovery	EPA 8260B	07/28/2005

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **MW-4** Matrix : Water Lab Number : 44912-04
Sample Date :07/19/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
Methanol	**< 50**	50	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	96.8		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	114		% Recovery	EPA 8260B	07/28/2005

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **MW-5** Matrix : Water Lab Number : 44912-05
Sample Date :07/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**1.1**	0.50	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
Methanol	**< 50**	50	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**330**	50	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	97.4		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	115		% Recovery	EPA 8260B	07/28/2005

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **MW-6** Matrix : Water Lab Number : 44912-06
Sample Date :07/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1200**	2.5	ug/L	EPA 8260B	07/28/2005
Toluene	**21**	2.5	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**340**	2.5	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**150**	2.5	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**1800**	2.5	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 2.5**	2.5	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 2.5**	2.5	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**14**	2.5	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**140**	15	ug/L	EPA 8260B	07/28/2005
Methanol	**< 500**	500	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 25**	25	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 2.5**	2.5	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 2.5**	2.5	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**9800**	250	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	97.2		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	116		% Recovery	EPA 8260B	07/28/2005

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **MW-7** Matrix : Water Lab Number : 44912-07
Sample Date :07/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1.1**	0.50	ug/L	EPA 8260B	07/27/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Ethylbenzene	**9.2**	0.50	ug/L	EPA 8260B	07/27/2005
Total Xylenes	**8.6**	0.50	ug/L	EPA 8260B	07/27/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/27/2005
Methanol	**< 50**	50	ug/L	EPA 8260B	07/27/2005
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/27/2005
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
TPH as Gasoline	**1400**	50	ug/L	EPA 8260B	07/27/2005
Toluene - d8 (Surr)	94.9		% Recovery	EPA 8260B	07/27/2005
4-Bromofluorobenzene (Surr)	116		% Recovery	EPA 8260B	07/27/2005

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **MW-8** Matrix : Water Lab Number : 44912-08
Sample Date :07/19/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/27/2005
Methanol	**< 50**	50	ug/L	EPA 8260B	07/27/2005
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/27/2005
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/27/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	07/27/2005
Toluene - d8 (Surr)	91.4		% Recovery	EPA 8260B	07/27/2005
4-Bromofluorobenzene (Surr)	114		% Recovery	EPA 8260B	07/27/2005

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **MW-9** Matrix : Water Lab Number : 44912-09
Sample Date :07/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**5.5**	0.50	ug/L	EPA 8260B	07/28/2005
Toluene	**0.69**	0.50	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**12**	0.50	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**1.6**	0.50	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**10**	0.50	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
Methanol	**< 50**	50	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**1800**	50	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	98.2		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	114		% Recovery	EPA 8260B	07/28/2005

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **MW-10** Matrix : Water Lab Number : 44912-10
Sample Date :07/19/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
Methanol	**< 50**	50	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	91.6		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	120		% Recovery	EPA 8260B	07/28/2005

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **VW-2** Matrix : Water Lab Number : 44912-11
Sample Date :07/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**240**	2.0	ug/L	EPA 8260B	07/28/2005
Toluene	**13**	2.0	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**290**	2.0	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**480**	2.0	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**6600**	25	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 2.0**	2.0	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 2.0**	2.0	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**56**	2.0	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**59 J**	9.0	ug/L	EPA 8260B	07/28/2005
Methanol	**< 2000**	2000	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 20**	20	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 2.0**	2.0	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 2.0**	2.0	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**6200**	200	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	96.4		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	111		% Recovery	EPA 8260B	07/28/2005

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **VW-3** Matrix : Water Lab Number : 44912-12
Sample Date :07/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
Methanol	**< 50**	50	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	96.9		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	113		% Recovery	EPA 8260B	07/28/2005

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **TP-1** Matrix : Water Lab Number : 44912-13
Sample Date :07/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2800**	20	ug/L	EPA 8260B	07/28/2005
Toluene	**1100**	20	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**1700**	20	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**4800**	20	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**12000**	20	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 20**	20	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 20**	20	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**92**	20	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**130 J**	90	ug/L	EPA 8260B	07/28/2005
Methanol	**< 2000**	2000	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 200**	200	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 20**	20	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 20**	20	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**42000**	2000	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	95.6		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	07/28/2005

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **TP-2** Matrix : Water Lab Number : 44912-14
Sample Date :07/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1800**	150	ug/L	EPA 8260B	07/28/2005
Toluene	**1100**	150	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**1100**	150	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**2500**	150	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**63000**	150	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 150**	150	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 150**	150	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**400**	150	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**< 700**	700	ug/L	EPA 8260B	07/28/2005
Methanol	**< 15000**	15000	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 1500**	1500	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 150**	150	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 150**	150	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**26000**	15000	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	97.8		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	114		% Recovery	EPA 8260B	07/28/2005

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **VW-2-PRE** Matrix : Water Lab Number : 44912-15
Sample Date :07/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**140**	5.0	ug/L	EPA 8260B	07/28/2005
Toluene	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**140**	5.0	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**2600**	5.0	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**26**	5.0	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**27 J**	25	ug/L	EPA 8260B	07/28/2005
Methanol	**< 500**	500	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 50**	50	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**3200**	500	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	95.0		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	97.1		% Recovery	EPA 8260B	07/28/2005

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 44912
Date : 07/28/2005

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

Sample : **VW-3-PRE** Matrix : Water Lab Number : 44912-16
Sample Date :07/19/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
Methanol	**< 50**	50	ug/L	EPA 8260B	07/28/2005
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	98.0		% Recovery	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	111		% Recovery	EPA 8260B	07/28/2005

Approved By: Joel Kiff

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Report Number : 44912

Date : 07/28/2005

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	07/27/2005
Methanol	< 50	50	ug/L	EPA 8260B	07/27/2005
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	07/27/2005
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/27/2005
Toluene - d8 (Surr)	95.3		%	EPA 8260B	07/27/2005
4-Bromofluorobenzene (Surr)	115		%	EPA 8260B	07/27/2005
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	07/28/2005
Methanol	< 50	50	ug/L	EPA 8260B	07/28/2005
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	98.9		%	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	110		%	EPA 8260B	07/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	07/27/2005
Methanol	< 50	50	ug/L	EPA 8260B	07/27/2005
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	07/27/2005
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	07/27/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/27/2005
Toluene - d8 (Surr)	92.3		%	EPA 8260B	07/27/2005
4-Bromofluorobenzene (Surr)	105		%	EPA 8260B	07/27/2005
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	07/28/2005
Methanol	< 50	50	ug/L	EPA 8260B	07/28/2005
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	07/28/2005
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	07/28/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/28/2005
Toluene - d8 (Surr)	96.5		%	EPA 8260B	07/28/2005
4-Bromofluorobenzene (Surr)	92.6		%	EPA 8260B	07/28/2005

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 44912

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 07/28/2005

Project Name : **Tesoro - Livermore**

Project Number : **67076**

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	45007-07	<0.50	40.0	40.0	38.2	37.0	ug/L	EPA 8260B	7/27/05	95.6	92.6	3.15	70-130	25
Toluene	45007-07	<0.50	40.0	40.0	36.8	36.0	ug/L	EPA 8260B	7/27/05	92.1	90.0	2.30	70-130	25
Tert-Butanol	45007-07	<5.0	200	200	194	191	ug/L	EPA 8260B	7/27/05	97.1	95.7	1.43	70-130	25
Methyl-t-Butyl Ether	45007-07	<0.50	40.0	40.0	34.0	33.8	ug/L	EPA 8260B	7/27/05	85.0	84.6	0.527	70-130	25
Benzene	44961-09	580	40.0	40.0	590	568	ug/L	EPA 8260B	7/28/05	18.9	0.00	200	70-130	25
Toluene	44961-09	4.3	40.0	40.0	41.2	39.9	ug/L	EPA 8260B	7/28/05	92.2	89.0	3.50	70-130	25
Tert-Butanol	44961-09	39	200	200	232	235	ug/L	EPA 8260B	7/28/05	96.5	98.0	1.56	70-130	25
Methyl-t-Butyl Ether	44961-09	35	40.0	40.0	71.2	70.3	ug/L	EPA 8260B	7/28/05	91.0	88.7	2.51	70-130	25
Benzene	45008-01	<0.50	40.0	40.0	38.3	38.4	ug/L	EPA 8260B	7/27/05	95.8	95.9	0.0726	70-130	25
Toluene	45008-01	<0.50	40.0	40.0	35.7	35.8	ug/L	EPA 8260B	7/27/05	89.2	89.4	0.214	70-130	25
Tert-Butanol	45008-01	<5.0	200	200	189	190	ug/L	EPA 8260B	7/27/05	94.4	94.9	0.552	70-130	25
Methyl-t-Butyl Ether	45008-01	1.5	40.0	40.0	45.2	44.8	ug/L	EPA 8260B	7/27/05	109	108	0.779	70-130	25
Benzene	44995-03	<0.50	40.0	40.0	41.4	41.0	ug/L	EPA 8260B	7/28/05	104	102	0.978	70-130	25
Toluene	44995-03	<0.50	40.0	40.0	42.0	41.6	ug/L	EPA 8260B	7/28/05	105	104	0.857	70-130	25
Tert-Butanol	44995-03	<5.0	200	200	206	203	ug/L	EPA 8260B	7/28/05	103	102	1.68	70-130	25
Methyl-t-Butyl Ether	44995-03	<0.50	40.0	40.0	43.1	44.0	ug/L	EPA 8260B	7/28/05	108	110	1.99	70-130	25

Approved By: Joel Kiff

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Report Number : 44912

QC Report : Laboratory Control Sample (LCS)

Date : 07/28/2005

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	7/27/05	95.1	70-130
Toluene	40.0	ug/L	EPA 8260B	7/27/05	95.4	70-130
Tert-Butanol	200	ug/L	EPA 8260B	7/27/05	98.4	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	7/27/05	87.1	70-130
Benzene	40.0	ug/L	EPA 8260B	7/28/05	97.8	70-130
Toluene	40.0	ug/L	EPA 8260B	7/28/05	100	70-130
Tert-Butanol	200	ug/L	EPA 8260B	7/28/05	99.5	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	7/28/05	88.4	70-130
Benzene	40.0	ug/L	EPA 8260B	7/27/05	97.6	70-130
Toluene	40.0	ug/L	EPA 8260B	7/27/05	90.6	70-130
Tert-Butanol	200	ug/L	EPA 8260B	7/27/05	96.9	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	7/27/05	111	70-130
Benzene	40.0	ug/L	EPA 8260B	7/28/05	100	70-130
Toluene	40.0	ug/L	EPA 8260B	7/28/05	102	70-130
Tert-Butanol	200	ug/L	EPA 8260B	7/28/05	97.8	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	7/28/05	105	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

KIFF ANALYTICAL LLC

2795 2nd Street Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4808

Lab No. 44912

Page 1 of 2

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Mike Purchase

California EDF Report? ☑ Yes ☐ No

Company / Address: Tesoro c/o Arctos Environmental, 1332 Peralta Ave, Berkeley, CA 94702

Phone No.: 510-525-2180 **Fax No.:** 510-525-2392

Project Number: 67076 **P.O. No.:** 67076

Project Name: Tesoro - Livermore

Project Address: 1619 1st Street, Livermore, California

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Global ID: T0600101410

EDF Deliverable To (Email Address): mpurchase@arctosenv.com

Sampler Signature:

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: SLEEVE	Container: POLY	Container: AMBER	Container: TEDLAR	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Preservative:	Matrix: WATER	Matrix: SOIL	Matrix: VAPOR	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 (8260B)	7 Oxygenates/TPH Gas (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 ☐ W.E.T. ☐				TAT	For Lab Use Only
MW-1	7-19	1500	x					x												x				x	x							1 wk	01
MW-2	7-20	1215	x					x												x				x	x							1 wk	02
MW-3	7-19	1540	x					x												x				x	x							1 wk	03
MW-4	7-19	1120	x					x												x				x	x							1 wk	04
MW-5	7-20	0745	x					x												x				x	x							1 wk	05
MW-6	7-20	1050	x					x												x				x	x							1 wk	06
MW-7	7-20	0830	x					x												x				x	x							1 wk	07
MW-8	7-19	1210	x					x												x				x	x							1 wk	08
MW-9 CR 7-20/0910	7-19	[illegible]	x					x												x				x	x							1 wk	09
MW-10	7-19	1705	x					x												x				x	x							1 wk	10

TAT: 12hr ○ 24hr ○ 48hr ○ 72hr ○ 1wk ◉ 2wk ○

Relinquished by:	Date	Time	Received by:
[signature]	7-21	0950	[signature]
[signature]	Date	Time	Received by:
[signature]	072105	1005	Received by Laboratory: Jacy N Hernandez Kiff Analytical LLC.

Remarks:

Sample Receipt
Temp °C 4.4 Therm. ID# IR-3
Initial JNH Date 072105
Time 1140 Coolant present: (Y) / N

Bill to: Tesoro Petroleum Companies, Inc.

Kiff ECOC 011204

KIFF ANALYTICAL LLC

2795 2nd Street Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4808

Lab No. 44912

Page 2 of 2

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Mike Purchase

California EDF Report? ☑ Yes ☐ No

Company / Address: Tesoro c/o Arctos Environmental, 1332 Peralta Ave, Berkeley, CA 94702

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Phone No.: 510-525-2180 **Fax No.:** 510-525-2392

Global ID: T0600101410

Project Number: 67076 **P.O. No.:** 67076

EDF Deliverable To (Email Address): mpurchase@arctosenv.com

Project Name: Tesoro - Livermore

Sampler Signature:

Project Address: 1619 1st Street, Livermore, California

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: SLEEVE	Container: POLY	Container: AMBER	Container: TEDLAR	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Preservative:	Matrix: WATER	Matrix: SOIL	Matrix: VAPOR	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 (8260B)	7 Oxygenates/TPH Gas (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 ☐ W.E.T. ☐				TAT	For Lab Use Only
~~VW-1~~			X					X												X				X	X							1 wk	
VW-2	7-20	1510	X					X												X				X	X							1 wk	11
VW-3 Ch 7-20	~~7-20~~	1420	X					X												X				X	X							1 wk	12
TP-1	7-20	1305	X					X												X				X	X							1 wk	13
TP-2	7-20	0955	X					X												X				X	X							1 wk	14
VW-2-Pre	7-20	1330	X					X												X				X	X								15
VW-3-Pre	7-19	1600	X					X												X				X	X								16

Relinquished by:	Date	Time	Received by:
	7-21	0950	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	072105	1005	Jason N Heyneke Kiff Analytical LLC.

Remarks:

Bill to: Tesoro Petroleum Companies, Inc.

TAT: 12hr ○ 24hr ○ 48hr ○ 72hr ○ 1wk ◉ 2wk ○

Kiff ECOC 011204

APPENDIX C

FIELD AND QA/QC PROCEDURES

APPENDIX C
FIELD AND QA/QC PROCEDURES

Health and Safety

Arctos will modify the site-specific Health and Safety Plan (HSP) for the investigation outlined in this work plan. The HSP presents procedures for personnel and equipment safety, medical surveillance, personal protection, air-quality monitoring, exposure control, emergency response procedures, and general work practices.

Before beginning work at the site, a site safety meeting will be conducted. Field personnel will review the HSP and sign the accompanying acknowledgment form. Field personnel will be required to comply with the HSP throughout performance of site assessment activities.

Based on the site history and potential chemicals of concern, field activities will be initiated in Level D personal protective equipment (PPE). During field activities, the breathing zone of field personnel will be monitored using a field photoionization detector (PID). If breathing zone PID readings indicate elevated levels of organic vapors, PPE will be upgraded accordingly. Breathing zone readings will be recorded on the boring logs.

Soil Gas Sampling Procedures

A direct-push soil gas sampler (consisting of a 12-inch-long screen inside a metal sheath) will be advanced hydraulically to the desired depth. The sampling tool will then be retracted approximately 12 inches, exposing the inlet screen and allowing soil gas to enter the sampler. Soil gas samples will be collected following the California Department of Toxic Substances Control guidelines.

Soil Sampling Procedures

Before initiating drilling activities, Arctos will mark the boring locations and contact USA to clear the area of subsurface lines and utilities. Arctos will also obtain boring and well permits from Zone 7 Water Agency. The soil borings will be advanced to an approximate depth of 70 feet below grade, or 5 feet into the aquitard, using a direct push drill rig. Soil samples will be collected inside the direct push soil sampling tool which will contain a 36-inch long, 1.25-inch-diameter acetate sleeve. The sampler will be driven to the sampling depth using a hydraulic hammer. Soil samples will be collected continuously for lithologic logging.

Immediately after the sampler is retrieved from the driller, it will be placed on a portable field stand near the boring and the acetate sleeve removed. The acetate sleeve will be cut into a 6-inch length at the desired sample interval. The acetate sleeve sample will be covered with Teflon liners and capped with polyvinyl chloride (PVC) end caps. The sealed tubes will be labeled, placed in a resealable plastic bag, and stored on ice in a

cooler until delivery to the analytical laboratory. The label information will include project identification, sample number, sample depth, date, time, and name of the person preparing the samples.

A portion of the soil from the acetate sleeve will be extruded and placed in a sealable plastic bag, which will then be closed and allowed to equilibrate for approximately 10 minutes. The organic vapor levels in the headspace will be measured using a field PID. The same sample will be visually examined and the results of the visual observation and headspace reading will be recorded on the boring log. The soil type will be classified using the Unified Soil Classification System (USCS) as described in American Society for Testing and Materials (ASTM) Standards D2487 and D2488.

Grab Groundwater Sampling Procedures

A direct-push groundwater sampler (consisting of a 23-inch-long screen inside a metal sheath) will be advanced hydraulically to the depth of permeable zones identified in the soil sampling. The sampling tool will then be retracted approximately 2 feet, exposing the inlet screen and allowing groundwater to enter the chamber. The sampling tool will remain in the ground until a sufficient volume of water enters the chamber and a water sample can be collected.

Groundwater samples will be collected using new 3/8-inch tubing equipped with a bottom check valve. The tubing will be lowered through the middle of the sampling tool until it reaches the screen. The tubing will be oscillated up and down, and the water sample will be pushed upward into the tubing as the check valve repeatedly lifts and seats. When an adequate amount of water has filled the tubing, the tubing will be removed from the sampling tool.

Water will be decanted from the tubing into new bottles provided by the analytical laboratory. Water samples will be collected in 40-milliliter glass bottles with Teflon-lined caps. The samples will be collected so that no headspace is present in the bottle.

Soil Boring Surveying

A licensed surveyor will survey the elevation and location of the new borings following the requirements of State Assembly Bill 2886. The locations will be measured to the nearest 1/10 foot and the elevations to the nearest 1/100 foot relative to mean sea level.

Field QA/QC Procedures

Procedures for preserving and transporting soil and groundwater samples, decontaminating field equipment, managing wastes generated, and documenting the field program are described below.

Preservation and Delivery of Samples

The analytical laboratory will provide the preservatives necessary for the groundwater samples. The samples will be stored on ice in the field and transported in a portable ice chest to the analytical laboratory. The samples will be delivered to the analytical laboratory by courier within 24 to 48 hours of sample collection.

Chain-of-Custody Records

Chain-of-custody records will be completed before packaging the samples for shipment. One copy of these records will be placed in the project file. The second copy will accompany the samples during transportation to the laboratory. The person in the analytical laboratory who accepts responsibility for the samples will sign and date the original chain-of-custody form.

Equipment Decontamination Procedures

Soil and groundwater sampling equipment will be decontaminated between sampling events using the following procedures:

1. Rinse with water using a brush to remove soil and mud.
2. Wash with non-phosphate detergent and water using a brush.
3. Rinse with deionized water.
4. Rinse again with deionized water.
5. Air dry.

Acetate sleeves and end caps will be new or cleaned using the decontamination procedures described above. Drill augers will be steam-cleaned before each boring is drilled.

Management of Drill Cuttings and Wastewater

Soil cuttings and wastewater will be placed in 55-gallon drums that meet U.S. Department of Transportation specifications and stored on site pending the results of the laboratory analyses. Each drum will be labeled with the date and drum contents. When a drum is filled with soil, the depths of collection will be noted on the drum. Analytical results will determine if the soil samples are impacted and the cuttings will be managed accordingly. Wastewater will be transported off site for recycling.

Documentation Procedures

Arctos personnel will follow documentation procedures developed for site investigation to (1) provide a record of the activities performed in the field and (2) identify samples and track their status in the field, during shipment, and at the laboratory.

Arctos field personnel will be on site to observe the progress of sampling and to log each boring. The information recorded on the boring log will include drilling equipment used, boring location, nature of the materials encountered, sampling depth, time of day, PID readings, backfill material, and other pertinent data. The boring logs will be drafted for presentation in the final report.

Analytical QA/QC Procedures

Laboratory analytical QA/QC procedures to be used for this work will include (1) preparing and analyzing laboratory samples to assess the performance of the analytical laboratory and (2) conducting data validation in accordance with the protocols described below. QA/QC samples prepared by the laboratory will include method blanks, matrix spike and matrix spike duplicates, and laboratory control samples.

The laboratory results will be reviewed in general accordance with EPA guidelines for data validation. The data validation process will include reviewing laboratory results for the following parameters:

- Completeness of the data package
- Compliance with EPA-required holding times
- Agreement of dilution factors with reported detection limits
- Presence or absence of analytes in the method blanks
- Agreement of duplicate samples
- Percent recovery and relative percent difference results for matrix spike and matrix spike duplicate analyses
- Percent recovery results for laboratory control samples.