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30 September 2006
Project No. 01LV

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

Subject: Second Quarter 2006 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 Companies, Inc. (Tesoro), has prepared this letter report summarizing project activities for the second quarter 2006 at the subject site (Figure 1). From April through June 2006, Arctos completed the following tasks:

- Quarterly groundwater monitoring
- Initiation of microbiological testing.

Groundwater Monitoring

Arctos performed groundwater monitoring at the site on 16 and 17 May 2006. 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 the guidelines of the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB).

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). During purging, pH, specific conductivity, and temperature were measured and recorded for the evacuated groundwater. 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 approximately 24 to 28 feet below ground surface (443 to 449 feet above mean sea level). Water levels had increased by 1.5 to 2 feet since February 2006. The water level data indicate that the general direction of water flow is toward the northwest with an estimated gradient of 0.02 (1 foot/47 feet; Figure 3).

The highest TPHg, MTBE and tert-butyl alcohol (TBA) concentrations of 31,000, 87,000 and 4,800 micrograms per liter (µg/l), respectively, were at well TP-2. The highest benzene concentration of 3,200 was at well MW-2. Elevated benzene and MTBE concentrations in groundwater (270 and 930 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 chain-of-custody form are in Appendix B.

Microbiological Testing

Previous results for natural attenuation parameters have indicated the presence of biological activity in the groundwater to potentially degrade TPHg, benzene, and MTBE. To assess the active microbiological populations for degradation of site compounds, Arctos installed biotraps provided by Microbial Insights, Inc. (MI), of Rockford, Tennessee. Biotraps are small passive diffusion samplers that contain Bio-Sep beads used as the

sampling matrix. The beads include powdered activated carbon (PAC) that allow for adsorption of nutrients and contaminants present within the aquifer. The adsorbed nutrients and contaminants provide a matrix for microbiological populations present in the aquifer to grow on the beads. To allow for adequate growth at sites with no previous data, biotraps are placed in groundwater wells for a period of 30 days.

Arctos installed biotraps at the site on 23 June 2006 in impacted wells MW-2, TW-2, and MW-6. Biotraps were placed at a depth of 2 to 3 feet below the top of the water table within the most impacted portion of petroleum-impacted groundwater. The biotraps were removed on 24 July 2006 and submitted to MI for analyses.

The analyses include testing for (1) universal bacteria, (2) PM-1 (an indicator of MTBE degrading bacteria), and (3) toluene dioxygenase by polymerase chain reaction (PCR) methods. Toluene dioxygenase is an enzyme produced by bacteria containing a specific gene that triggers its production. Detection of the enzyme is an indirect method of determining the presence of bacteria capable of degrading dissolved hydrocarbons.

In addition to the standard groundwater analyses conducted during the third quarter monitoring, Kiff analyzed selected samples from groundwater wells located upgradient (wells MW-3 and MW-4) and through the centerline of the plume (wells MW-2, MW-6, and MW-9) for the natural attenuation and general groundwater chemistry parameters. Microbiological and natural attenuation results will be included in the third quarter status report.

Proposed Groundwater Assessment

As requested in the Alameda County Environmental Health (ACEH) letter to Tesoro dated 23 June 2006, Arctos is proposing to conduct the following scope of work for lateral assessment of impacted groundwater. The objective of the assessment is to determine if MTBE-impacted groundwater is located downgradient of boring DB-6.

To meet this objective Arctos proposes the following scope of work:

- Mark the boring location and notify Underground Service Alert (USA) to identify subsurface utilities
- Install one boring (DB-7) downgradient of boring DB-6 for delineation of lateral impacts to groundwater (Figure 6) using a cone penetration test (CPT) rig to continuously identify lithology and location of the regional aquitard

- Collect groundwater grab samples from the boring at depths of permeable lithologic zones identified above the regional aquitard for laboratory analysis
- Deliver 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 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 groundwater assessment 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 updated site conceptual model (SCM).

If you have 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: Jeffrey M. Baker, P.E. – Tesoro Companies, Inc.
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 – Groundwater Elevation Contours
Figure 3 – Benzene Concentration Contours
Figure 4 – MTBE Concentration Contours
Figure 5 – Proposed Downgradient Groundwater Sampling Location
Appendix A – Field Data Sheets
Appendix B – Laboratory Analytical Reports and Chain-of-Custody Form
Appendix 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
	9/26/2001	45.10		429.19

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	12/18/2001	39.39	474.29	434.90
(cont.)	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
	11/21/2005	31.15		443.14
	2/9/2006	26.24		448.05
	5/16/2006	24.87		449.42
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

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	6/12/1997	29.94	472.98	443.04
(cont.)	9/29/1997	34.22		438.76
	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
	11/21/2005	32.04		440.94

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
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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	2/9/2006	27.11	472.98	445.87
(cont.)	5/17/2006	25.18		447.80
MW-3	6/1/1993	36.18	473.37	437.19
	6/22/1993	37.11		436.26
	10/6/1993	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

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
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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	6/30/2001	37.54	473.37	435.83
(cont.)	9/26/2001	45.17		428.20
	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
	11/21/2005	31.30		442.07
	2/9/2006	26.21		447.16
	5/16/2006	24.36		449.01
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

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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	9/29/1997	29.91	473.64	443.73
(cont.)	12/1/1997	33.88		439.76
	3/19/1998	18.67		454.97
	5/29/1998	20.16		453.48
	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
	11/21/2005	31.80		441.84

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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	2/9/2006	26.34	473.64	447.30
(cont.)	5/16/2006	24.30		449.34
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
	2/10/1995	31.44		441.23
	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

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WELL AND GROUNDWATER ELEVATIONS
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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	8/21/2002	36.76	472.67	435.91
(cont.)	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
	12/23/2003	31.38		441.29
	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
	11/21/2005	32.35		440.32
	2/9/2006	27.19		445.48
	5/16/2006	25.30		447.37
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

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	11/30/1998	38.73	471.93	433.20
(cont.)	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
	11/10/2000	32.99		438.94
	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
	11/21/2005	33.23		438.70
	2/9/2006	29.07		442.86
	5/17/2006	27.23		444.70

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	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
	6/12/1997	29.90		442.43
	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

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	12/3/2002	36.52	472.33	435.81
(cont.)	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
	11/21/2005	30.42		441.91
	2/9/2006	26.15		446.18
	5/16/2006	24.44		447.89
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
	11/21/2005	32.48		438.70
	2/9/2006	27.40		443.78
	5/16/2006	25.60		445.58
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
	11/21/2005	34.15		436.63

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-9	2/9/2006	29.44	470.78	441.34
(cont.)	5/16/2006	27.50		443.28
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
	11/21/2005	32.96		438.67
	2/9/2006	28.36		443.27
	5/16/2006	26.83		444.80
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
	11/21/2005	31.81		441.47
	2/9/2006	27.21		446.07
	5/17/2006	25.26		448.02
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
	11/21/2005	31.07		443.31
	2/9/2006	26.60		447.78
	5/16/2006	24.19		450.19
TP-1	7/19/2005	29.91	472.82	442.91
	11/21/2005	32.28		440.54
	2/9/2006	28.02		444.80
	5/17/2006	25.18		447.64

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
	11/21/2005	31.43		441.50
	2/9/2006	27.27		445.66
	5/17/2006	25.00		447.93
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 MONITORING 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)
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	-	-	-	-	-	-	-	-

TABLE 2

GROUNDWATER MONITORING 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)
MW-1	3/13/2000	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-
(cont.)	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	-	-	-	-	-	-	-	-
	12/31/2000	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	-	-	-	-	-	-	-	-
	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
	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
	11/21/2005	370	ND<0.5	ND<0.5	0.75	1.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/2006	140	ND<0.5	ND<0.5	0.67	1.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/2006	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-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	-	-	-	-	-	-	-	-

TABLE 2

GROUNDWATER MONITORING 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)
MW-2	9/16/1996	8,600	510	640	180	1,300	ND<250	-	-	-	-	-	-	-	-
(cont.)	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	-	-	-	-	-	-	-	-
	9/15/1998	36,000	3,900	1,200	1,400	7,800	ND<250	-	-	-	-	-	-	-	-
	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

TABLE 2

GROUNDWATER MONITORING 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)
MW-2	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
(cont.)	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
	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
	11/22/2005	33,000	4,400	880	1,200	2,600	2,200	ND<9	ND<9	19	480	ND<900	ND<90	ND<9	ND<9
	2/9/2006	25,000	3,300	720	1,300	2,200	2,500	ND<7	ND<7	27	490	ND<700	ND<70	ND<7	ND<7
	5/17/2006	22,000	3,200	240	1,200	2,100	4,600	ND<7	ND<7	46	1,000	ND<700	ND<70	ND<7	ND<7
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
	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

TABLE 2

GROUNDWATER MONITORING 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)
MW-3	11/21/2005	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
(cont.)	2/9/2006	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/2006	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-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
	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
	11/21/2005	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
	2/9/2006	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
	5/16/2006	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	-	-	-	-	-	-	-	-	-
	12/14/1994	4,800	660	ND<2.5	33	13	-	-	-	-	-	-	-	-	-
	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	-	-	-	-	-	-	-	-

TABLE 2

GROUNDWATER MONITORING 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)
MW-5	12/2/1996	200	1.1	0.64	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-
(cont.)	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	-	-	-	-	-	-	-	-
	6/5/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	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

TABLE 2

GROUNDWATER MONITORING 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)
MW-5	12/23/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(cont.)	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
	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
	11/21/2005	210	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.2	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/2006	ND<50	ND<0.5	ND<0.5	0.63	1.0	1.0	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/2006	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.79	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	-	-	-	-	-	-	-	-
	5/29/1998	38,000	3,500	700	1,800	5,200	ND<100	-	-	-	-	-	-	-	-

TABLE 2

GROUNDWATER MONITORING 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)
MW-6	9/15/1998	22,000	1,900	110	1,400	3,000	ND<100	-	-	-	-	-	-	-	-
(cont.)	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

TABLE 2

GROUNDWATER MONITORING 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)
MW-6	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
(cont.)	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
	11/21/2005	6,600	150	26	580	640	100	ND<1	ND<1	ND<1	13	ND<100	ND<10	ND<1	ND<1
	2/9/2006	7,100	340	11	370	360	910	ND<2	ND<2	9.3	120	ND<200	ND<20	ND<2	ND<2
	5/17/2006	7,100	270	5.1	320	290	930	ND<2	ND<2	8.4	260	ND<200	ND<20	ND<2	ND<2
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	-	-	-	-	-	-	-	-

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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)
MW-7	3/13/2000	1,500	7.5	ND<0.5	6.7	2.9	ND<5	-	-	-	-	-	-	-	-
(cont.)	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	-	-	-	-	-	-	-	-
	12/18/2001	3,000	13	0.88	3.4	3.4	ND<0.5	-	-	-	-	-	-	-	-
	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
	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
	11/21/2005	1,100	0.6	ND<0.5	3.4	23	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/2006	270	ND<0.5	ND<0.5	1.2	0.98	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/2006	930	0.84	ND<0.5	10	7.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5

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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)
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
	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
	11/21/2005	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
	2/9/2006	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.57	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	<5.0	ND<0.5	ND<0.5
	5/16/2006	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-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
	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
	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
	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
	11/21/2005	1,200	0.94	ND<0.5	1.4	ND<0.5	3.3	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/9/2006	1,200	2.8	0.51	6.4	0.84	4.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/2006	1,600	3.8	0.57	12	1.8	4.9	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

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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)
MW-10	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
(cont.)	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
	7/19/2005	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
	11/21/2005	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
	2/9/2006	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
	5/16/2006	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
	11/21/2005	3,100	100	ND<9	22	10	5,300	ND<9	ND<9	54	76[f]	ND<900	ND<90	ND<9	ND<9
	2/9/2006	3,500	140	ND<25	130	36	12,000	ND<25	ND<25	65	2,800	ND<2,500	ND<250	ND<25	ND<25
	5/17/2006	1,800	90	2.6	39	11	1,200	ND<2.5	ND<2.5	12	700	ND<250	ND<25	ND<2.5	ND<2.5
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
	11/21/2005	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
	2/9/2006	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
	5/16/2006	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
	11/22/2005	36,000	2,100	290	1,400	2,600	11,000	ND<20	ND<20	70	810	ND<2,000	ND<200	ND<20	ND<20
	2/9/2006	19,000	1,400	230	990	1,700	8,900	ND<15	ND<15	72	2,200	ND<1,500	ND<150	ND<15	ND<15
	5/17/2006	20,000	1,400	200	920	1,800	9,200	ND<20	ND<20	37	2,500	ND<10,000	ND<200	ND<20	ND<20

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GROUNDWATER MONITORING 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)
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
	11/22/2005	16,000	1,200	140	840	820	52,000	ND<90	ND<90	340	1,200[f]	ND<9,000	ND<900	ND<90	ND<90
	2/9/2006	2,700	94	2.9	28	14	1,200	ND<2.5	ND<2.5	13	1,600	ND<250	ND<25	ND<2.5	ND<2.5
	5/17/2006	31,000	2,200	1,100	1,500	3,300	87,000	ND<90	ND<90	680	4,800	ND<15,000	ND<1,500	ND<90	ND<90
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	-	-	-	-	-	-	-	-
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.

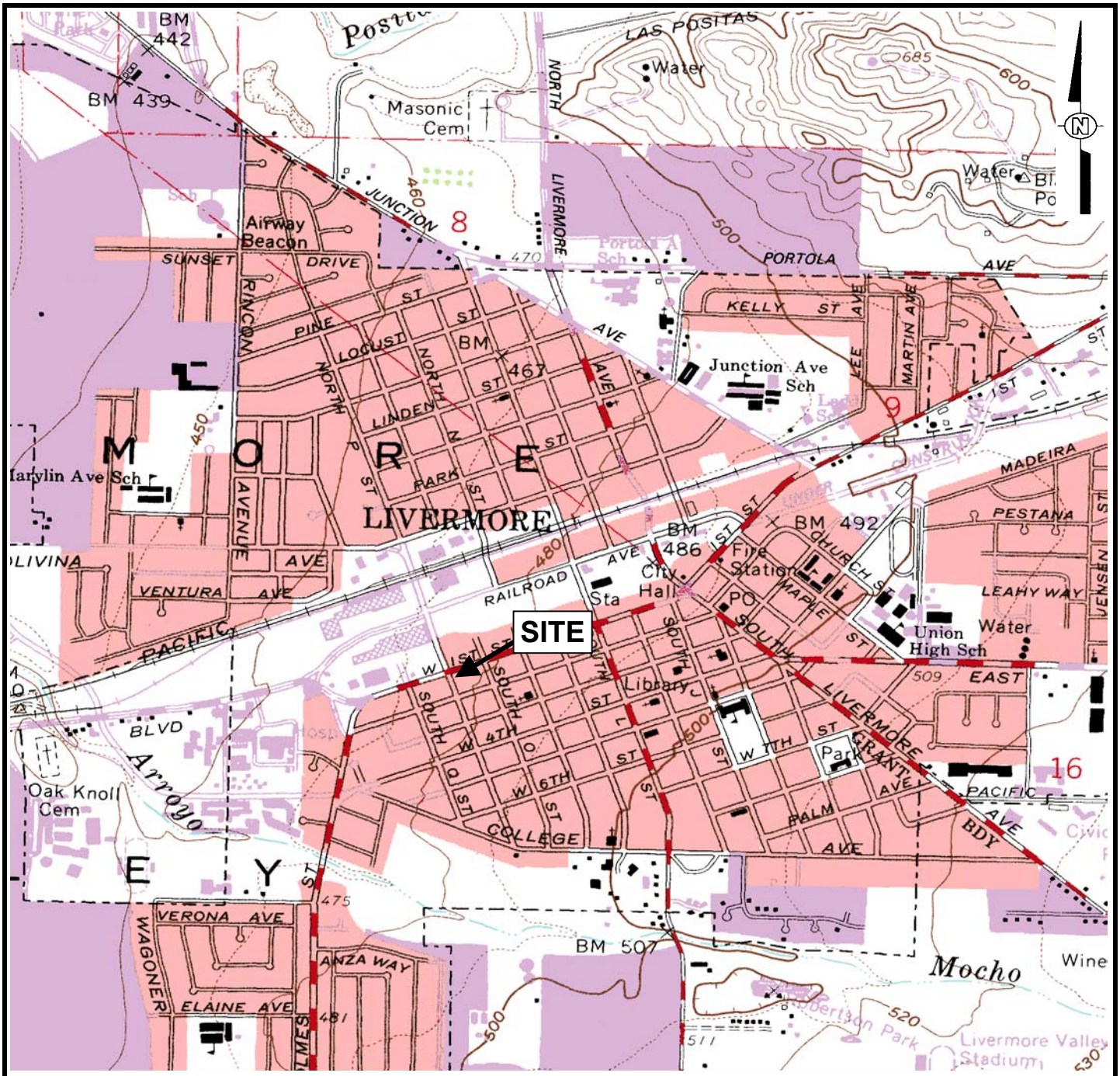
(b) Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes, methyl tert-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), tert-butyl alcohol (TBA), 1,2-dichloroethane (1,2-DCA), and 1,2-dibromoethane (EDB) analyzed 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.



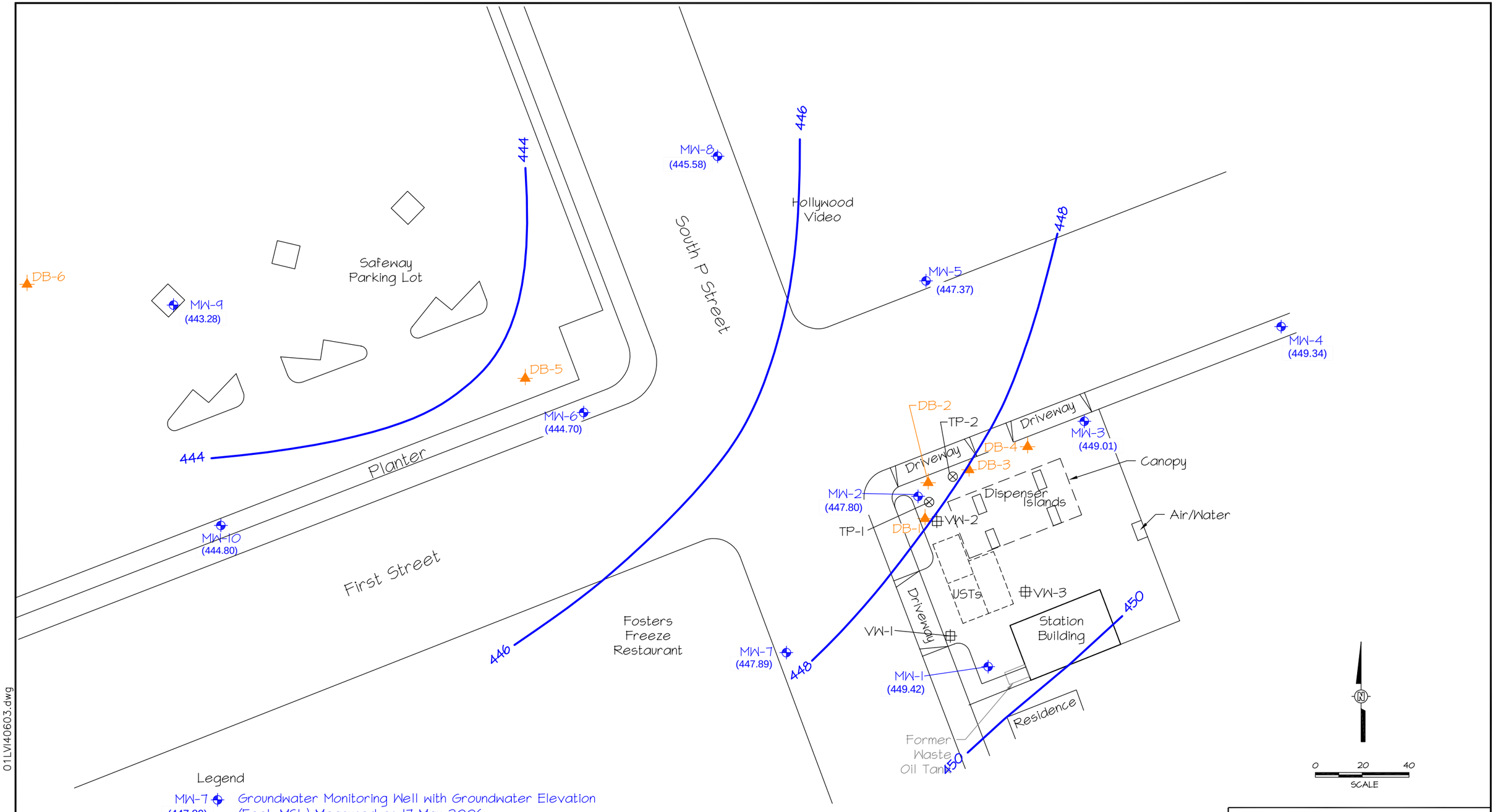
SCALE

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	



Legend

- MW-7 (447.89) — Groundwater Monitoring Well with Groundwater Elevation (Feet, MSL) Measured on 17 May 2006
- DB-1 — Soil Boring and Grab Groundwater Sampling Location
- VW-2 — Vapor Extraction Well
- TP-2 — Temporary Monitoring Well
- 444 — Groundwater Elevation Contour (Dashed Where Inferred)

REVISION	NO.	BY	DATE	DESCRIPTION
3	0	MY	8/24/05	Third Quarter 2005 Monitoring Report
	1	MY	12/15/05	Fourth Quarter 2005 Monitoring Report
	2	MY	4/28/06	Investigation Report
	3	MY	7/15/06	Second Quarter 2006 Monitoring Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

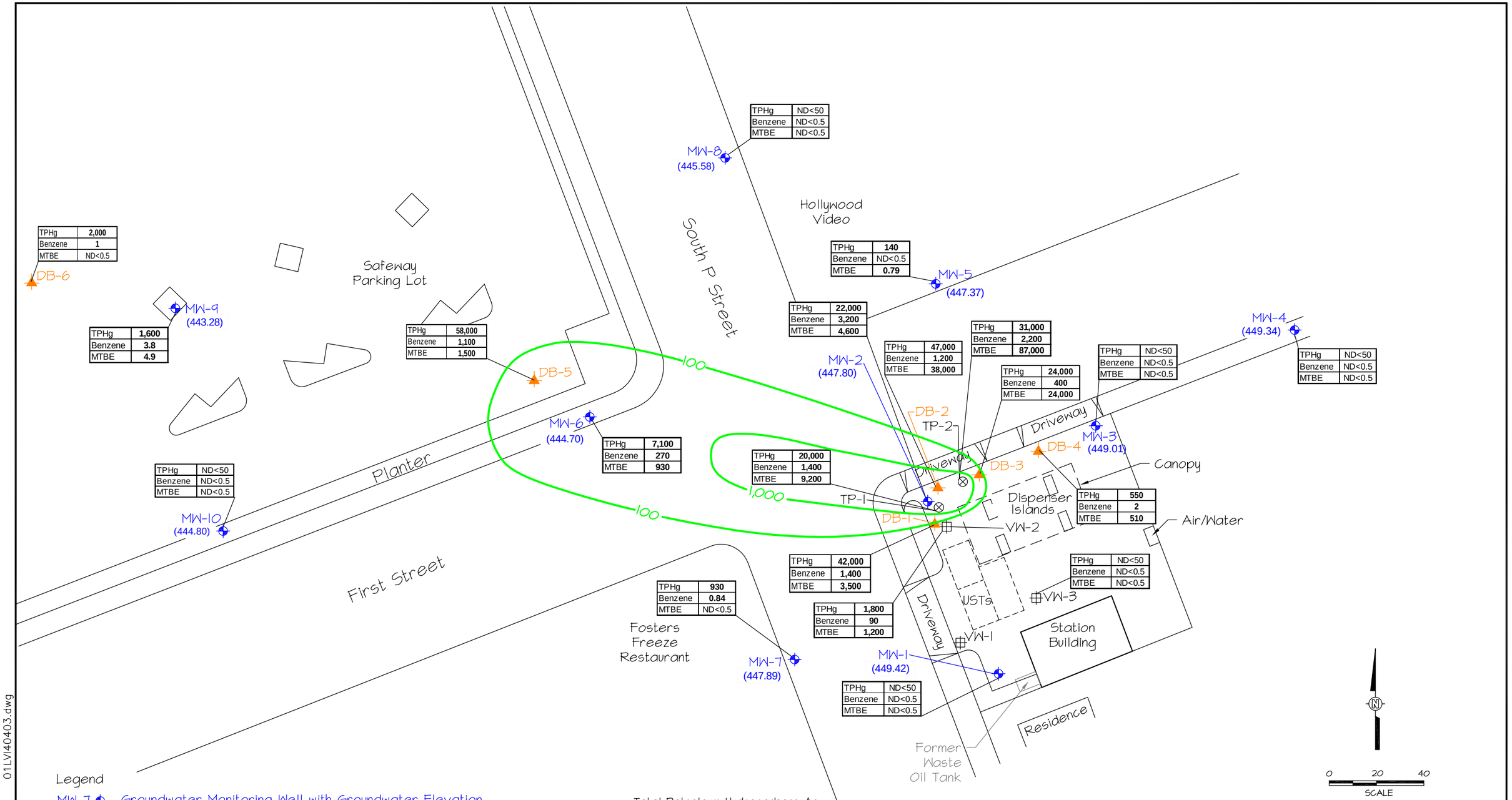
GROUNDWATER ELEVATION CONTOURS

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

FILE NO. 01LV140603.DWG

FIGURE 2

01LV140603.dwg 10/4/2006 2:26PM



01LVI40403.dwg
10/4/2006 2:26PM

REVISION	NO.	BY	DATE	DESCRIPTION
3	0	MY	8/24/05	Third Quarter 2005 Monitoring Report
	1	MY	12/15/05	Fourth Quarter 2005 Monitoring Report
	2	MY	4/28/06	Investigation Report
	3	MY	7/15/06	Second Quarter 2006 Monitoring Report

ARCTOS ENVIRONMENTAL

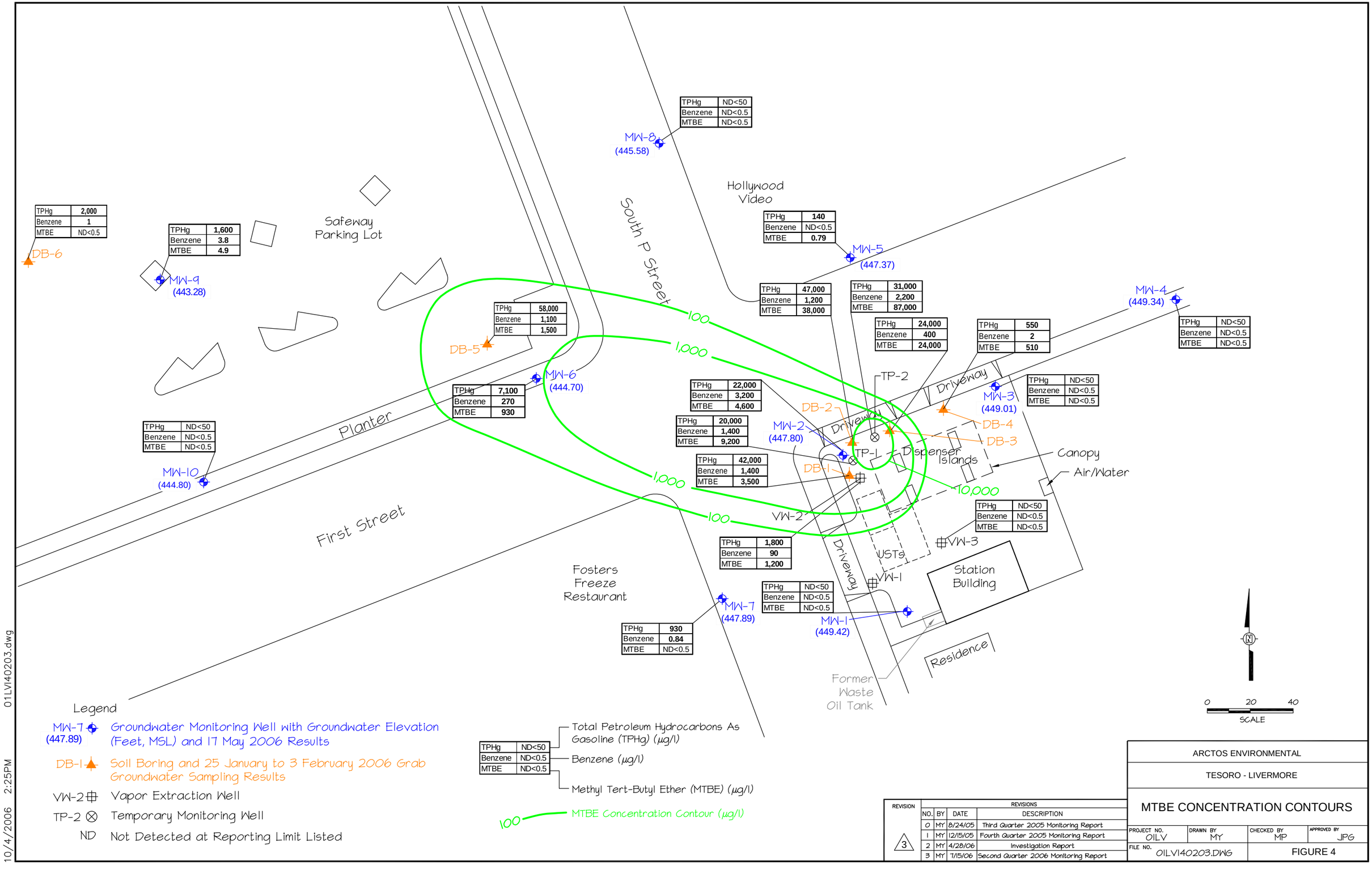
TESORO - LIVERMORE

BENZENE CONCENTRATION CONTOURS

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

FILE NO. 01LVI40403.DWG

FIGURE 3



01LVI40203.dwg
10/4/2006 2:25PM

REVISION	NO.	BY	DATE	DESCRIPTION
3	0	MY	8/24/05	Third Quarter 2005 Monitoring Report
	1	MY	12/15/05	Fourth Quarter 2005 Monitoring Report
	2	MY	4/28/06	Investigation Report
	3	MY	7/15/06	Second Quarter 2006 Monitoring Report

ARCTOS ENVIRONMENTAL

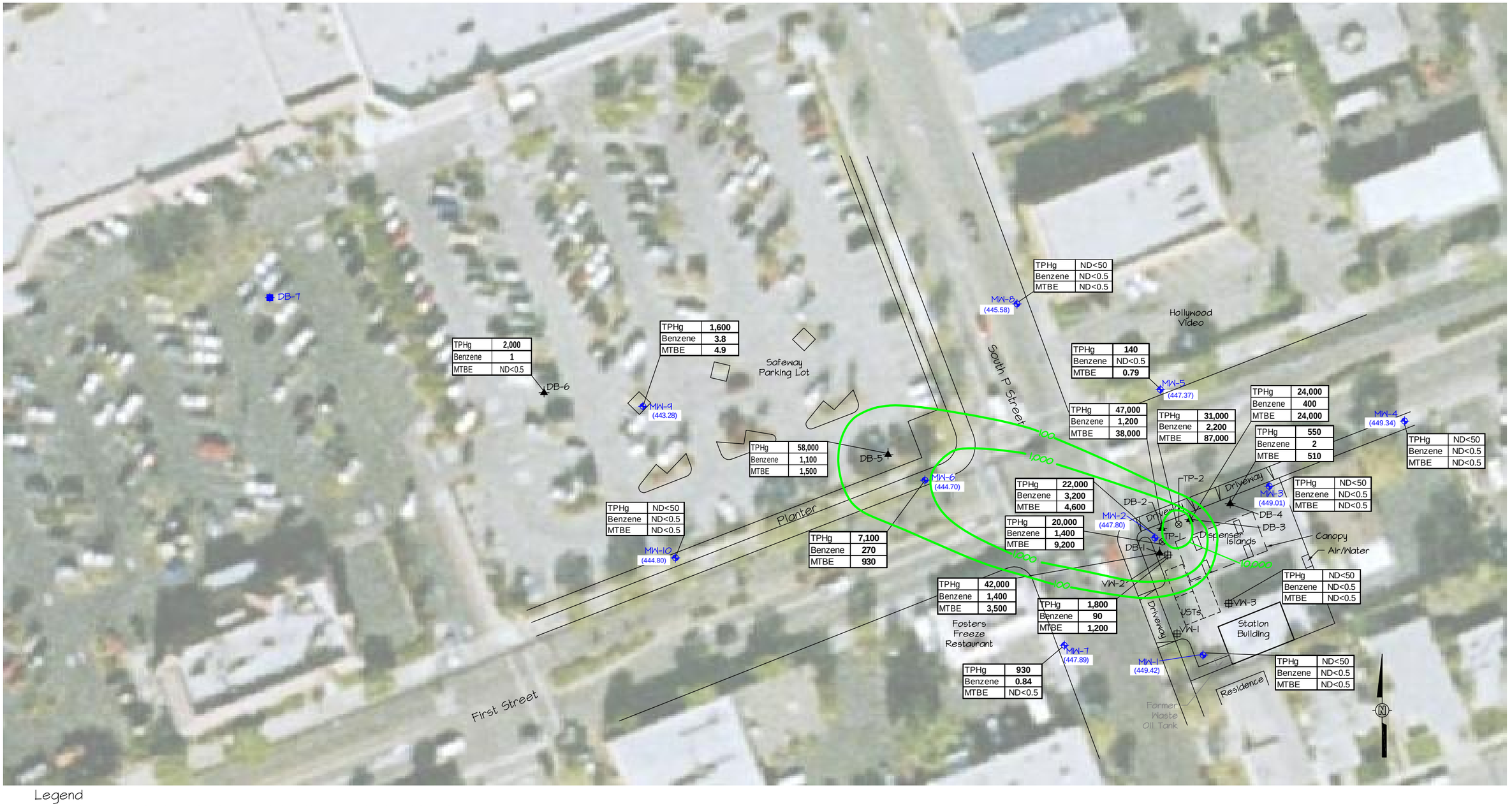
TESORO - LIVERMORE

MTBE CONCENTRATION CONTOURS

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

FILE NO. 01LVI40203.DWG

FIGURE 4



Legend

MW-7 (447.89)	Groundwater Monitoring Well with Groundwater Elevation (Feet, MSL) and 17 May 2006 Results
DB-1	Soil Boring and 25 January to 3 February 2006 Grab Groundwater Sampling Results
VW-2	Vapor Extraction Well
TP-2	Temporary Monitoring Well
ND	Not Detected at Reporting Limit Listed
DB-7	Proposed Grab Groundwater Sampling Location

TPHg	ND<50 — Total Petroleum Hydrocarbons As Gasoline (TPHg) (µg/l)
Benzene	ND<0.5 — Benzene (µg/l)
MTBE	ND<0.5 — Methyl Tert-Butyl Ether (MTBE) (µg/l)

100 — MTBE Concentration Contour (µg/l)

0 30' 60'
SCALE

REVISION	NO.	BY	DATE	DESCRIPTION
0	0	MY	9/15/06	Second Quarter 2006 Status Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

PROPOSED DOWNGRADIENT GROUNDWATER SAMPLING LOCATION

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

FILE NO. 01LV140700.DWG

FIGURE 5

01LV140700.dwg 10/4/2006 2:28PM

APPENDIX A

FIELD DATA SHEETS

ARCTOS

WELL PURGING AND SAMPLING LOG

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

Date: *5/16/2006*
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: *24.87*
Total Depth: *53.7*
Water Column: *28.83*
80% Recovery: *30.64*

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 *28.83* ft. = *56.2* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
1005	*24.87*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1010	*--*	*10*	*963.1*	*67.3*	*7.21*	*195*	*Clear*
1014	*--*	*20*	*901.8*	*67.2*	*7.26*	*191*	*Clear*
1019	*--*	*30*	*887.5*	*67.1*	*7.27*	*187*	*Clear*
1024	*--*	*40*	*901.7*	*67.0*	*7.31*	*178*	*Clear*
1033	*--*	*58*	*907.3*	*67.2*	*7.29*	*172*	*Clear*
1045	*29.03*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *58*

Number of Casing Volumes: *3+*

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/17/2006*
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: *25.18*
Total Depth: *53.77*
Water Column: *28.59*
80% Recovery: *30.90*

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 *28.59* ft. = *55.8* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
0746	*25.18*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
0751	*--*	*10*	*1,124*	*68.2*	*7.08*	*-119*	*Clear*
0756	*--*	*20*	*1,108*	*68.4*	*7.01*	*-140*	*Clear*
0801	*--*	*30*	*1,108*	*68.2*	*7.05*	*-152*	*Clear*
0806	*--*	*40*	*1,102*	*68.1*	*7.04*	*-157*	*Clear*
0815	*--*	*56*	*1,103*	*68.2*	*7.04*	*-164*	*Clear*
0825	*27.08*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *56*

Number of Casing Volumes: *3+*

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/16/2006*
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: *24.36*
Total Depth: *52.6*
Water Column: *28.24*
80% Recovery: *30.01*

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 *28.24* ft. = *55.1* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
1305	*24.36*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1309	*--*	*10*	*1,019*	*70.3*	*7.29*	*148*	*Clear*
1313	*--*	*20*	*1,012*	*69.5*	*7.31*	*152*	*Clear*
1317	*--*	*30*	*1,027*	*69.4*	*7.28*	*156*	*Clear*
1321	*--*	*40*	*1,039*	*69.1*	*7.25*	*153*	*Clear*
1326	*--*	*56*	*1,043*	*69.6*	*7.17*	*135*	*Clear*
1340	*26.30*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *56*

Number of Casing Volumes: *3+*

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/16/2006*
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: *24.30*
Total Depth: *46.7*
Water Column: *22.40*
80% Recovery: *28.78*

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 *22.40* ft. = *10.8* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
1140	*24.30*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1143	*--*	*3*	*1,087*	*71.8*	*7.49*	*159*	*Cloudy*
1145	*--*	*6*	*1,101*	*70.7*	*7.44*	*159*	*Clear*
1147	*--*	*9*	*1,104*	*70.9*	*7.41*	*159*	*Clear*
1149	*--*	*12*	*1,118*	*70.8*	*7.38*	*159*	*Clear*
1200	*27.13*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *12*

Number of Casing Volumes: *3+*

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/16/2006*
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: *25.30*
Total Depth: *46.15*
Water Column: *20.85*
80% Recovery: *29.47*

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 *20.85* ft. = *10.0* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
1400	*25.30*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1404	*--*	*3*	*1,276*	*74.9*	*6.99*	*-71*	*Clear*
1406	*--*	*6*	*1,246*	*72.7*	*7.04*	*-109*	*Clear*
1410	*--*	*9*	*1,254*	*72.3*	*7.03*	*-108*	*Clear*
1413	*--*	*12*	*1,257*	*72.2*	*6.97*	*-93*	*Clear*
1420	*27.13*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *12*

Number of Casing Volumes: *3+*

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/17/2006*
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: *27.23*
Total Depth: *47.52*
Water Column: *20.29*
80% Recovery: *31.29*

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 *20.29* ft. = *9.7* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
0648	*27.23*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
0651	*--*	*3*	*1,272*	*68.1*	*6.51*	*-97*	*Clear*
0653	*--*	*6*	*1,258*	*68.8*	*6.56*	*-116*	*Clear*
0656	*--*	*9*	*1,248*	*68.7*	*6.57*	*-118*	*Clear*
0700	*--*	*12*	*1,238*	*68.8*	*6.59*	*-122*	*Clear*
0710	*27.77*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *12*

Number of Casing Volumes: *3+*

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/16/2006*
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: *24.44*
Total Depth: *46.61*
Water Column: *22.17*
80% Recovery: *28.87*

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 *22.17* ft. = *10.6* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
1443	*24.44*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1446	*--*	*3*	*1,064*	*73.6*	*7.24*	*-33*	*Clear*
1452	*--*	*6*	*1,073*	*73.2*	*7.20*	*-74*	*Clear*
1456	*--*	*9*	*1,071*	*73.0*	*7.22*	*-99*	*Clear*
1500	*--*	*12*	*1,072*	*72.3*	*7.19*	*-100*	*Clear*
1515	*27.10*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *12*

Number of Casing Volumes: *3+*

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/16/2006*
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: *25.60*
Total Depth: *44.32*
Water Column: *18.72*
80% Recovery: *29.34*

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 *18.72* ft. = *9.0* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
1208	*25.60*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1211	*--*	*3*	*958.6*	*71.9*	*7.40*	*215*	*Clear*
1214	*--*	*6*	*959.5*	*71.4*	*7.44*	*211*	*Clear*
1217	*--*	*9*	*1,032*	*71.4*	*7.38*	*206*	*Clear*
1230	*29.13*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *9*

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-8*

OBSERVATION/NOTES/CALIBRATION RECORD:

Temperature, pH, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/16/2006*
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: *27.50*
Total Depth: *44.65*
Water Column: *17.15*
80% Recovery: *30.93*

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 *17.15* ft. = *8.2* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
1527	*27.50*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1530	*--*	*3*	*1,143*	*74.8*	*7.08*	*-65*	*Cloudy*
1533	*--*	*6*	*1,143*	*73.4*	*7.13*	*-109*	*Cloudy*
1536	*--*	*9*	*1,093*	*73.3*	*7.14*	*-128*	*Cloudy*
1600	*29.08*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *9*

Number of Casing Volumes: *3+*

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/16/2006*
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: *26.83*
Total Depth: *44.92*
Water Column: *18.09*
80% Recovery: *30.45*

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 *18.09* ft. = *8.7* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
1231	*26.83*	*0*	*--* [(a)]	*--*	*--*	*--*	*Start purging*
1235	*--*	*3*	*1,335*	*70.7*	*7.43*	*180*	*Clear*
1238	*--*	*6*	*1,318*	*70.4*	*7.44*	*172*	*Clear*
1240	*--*	*9*	*1,331*	*70.7*	*7.52*	*155*	*Clear*
1615	*27.50*	*--*	*--*	*--*	*--*	*--*	*Collect sample*

Total Purged Volume (gallons): *9*

Number of Casing Volumes: *3+*

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/17/2006*
Well Number: *VW-2*
Recorded by: *CR*

WELL PURGING:

Purge Method: *Well was not purged*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *25.26*
Total Depth: *36.63*
Water Column: *11.37*
80% Recovery: *27.53*

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 *11.37* ft. = *5.5* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
		0	-- [(a)]	--	--	--	
0840	--	--	--	--	--	--	*Collect sample*

Total Purged Volume (gallons): _____

Number of Casing Volumes: _____

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/16/2006*
Well Number: *VW-3*
Recorded by: *CR*

WELL PURGING:

Purge Method: *Well was not purged*
Decon. Method: *Triple rinse with Liquinox soap*

Depth to Water: *24.19*
Total Depth: *36.16*
Water Column: *11.97*
80% Recovery: *26.58*

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 *11.97* ft. = *5.7* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
		0	-- [(a)]	--	--	--	
0900	--	--	--	--	--	--	*Collect sample*

Total Purged Volume (gallons): _____

Number of Casing Volumes: _____

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.
Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/17/2006*
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: *25.18*
Total Depth: *43.12*
Water Column: *17.94*
80% Recovery: *28.77*

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 *17.94* ft. = *8.6* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
0900	*25.18*	*0*	*--* [(a)]	*--*	*--*	*--*	*Collect pre-sample*
0905	*--*	*0*	*--*	*--*	*--*	*--*	*Start purging*
0907	*--*	*3*	*1,257*	*67.7*	*7.02*	*-142*	*Cloudy*
0910	*--*	*6*	*1,254*	*68.5*	*6.93*	*-160*	*Cloudy*
0913	*--*	*9*	*1,276*	*68.6*	*6.95*	*-151*	*Cloudy*
0920	*28.70*	*--*	*--*	*--*	*--*	*--*	*Collect post-sample*

Total Purged Volume (gallons): *9*

Number of Casing Volumes: *3+*

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 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: *5/17/2006*
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: *25.00*
Total Depth: *42.3*
Water Column: *17.30*
80% Recovery: *28.46*

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 *17.30* ft. = *8.3* gallons

TIME	DTW (feet)	PURGED (gal.)	COND. (m/cm)	TEMP (^{o}F)	pH	ORP (mV)	NOTES
0935	*25.00*	*0*	*--* [(a)]	*--*	*--*	*--*	*Collect pre-sample*
0938	*25.00*	*0*	*--*	*--*	*--*	*--*	*Start purging*
0941	*--*	*3*	*1,340*	*68.9*	*7.00*	*-140*	*Cloudy*
0943	*--*	*6*	*1,343*	*69.1*	*7.00*	*-142*	*Cloudy*
0946	*--*	*9*	*1,344*	*69.2*	*6.99*	*-138*	*Cloudy*
0949	*--*	*12*	*1,345*	*69.2*	*6.97*	*-136*	*Cloudy*
1005	*26.47*	*--*	*--*	*--*	*--*	*--*	*Collect post-sample*

Total Purged Volume (gallons): *12*

Number of Casing Volumes: *3+*

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, cond, DO, and ORP measured using flow-through cell w/YSI 556 MPS and daily calibration following manufacturer's procedures and fluid standards for pH, cond, and ORP.

Turbidity measured using field instrument and calibrated with 1.0 and 10.0 NTU fluid calibration standards.

(a)"--" Measurement not collected.

APPENDIX B

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORM

Electronic Submittal Information

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Confirmation Number: 3211762964
Date/Time of Submittal: 6/29/2006 12:14:46 PM
Facility Global ID: T0600101410
Facility Name: BEACON #3604 (FORMER)
Submittal Title: 01LV 2Q 2006 Status Report
Submittal Type: GW Monitoring Report

Click here to view the detections report for this upload.

BEACON #3604 (FORMER)
1619 1ST ST
LIVERMORE, CA 94550

Regional Board - Case #: 01-1527
SAN FRANCISCO BAY RWQCB (REGION 2)
Local Agency (lead agency) - Case #: 4032
ALAMEDA COUNTY LOP - **(JTW)**

CONF #	TITLE	QUARTER
3211762964	01LV 2Q 2006 Status Report	Q2 2006

SUBMITTED BY	SUBMIT DATE	STATUS
Miguel Tseng	6/29/2006	PENDING REVIEW

SAMPLE DETECTIONS REPORT

# FIELD POINTS SAMPLED	14
# FIELD POINTS WITH DETECTIONS	8
# FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL	8
SAMPLE MATRIX TYPES	WATER

METHOD QA/QC REPORT

METHODS USED	SW8260B
TESTED FOR REQUIRED ANALYTES?	Y
LAB NOTE DATA QUALIFIERS	Y

QA/QC FOR 8021/8260 SERIES SAMPLES

TECHNICAL HOLDING TIME VIOLATIONS	0
METHOD HOLDING TIME VIOLATIONS	0
LAB BLANK DETECTIONS ABOVE REPORTING DETECTION LIMIT	0
LAB BLANK DETECTIONS	0
DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING?	
- LAB METHOD BLANK	Y
- MATRIX SPIKE	Y
- MATRIX SPIKE DUPLICATE	Y
- BLANK SPIKE	Y
- SURROGATE SPIKE - NON-STANDARD SURROGATE USED	N

WATER SAMPLES FOR 8021/8260 SERIES

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135%	Y

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30%	Y
SURROGATE SPIKES % RECOVERY BETWEEN 85-115%	Y
BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130%	Y

SOIL SAMPLES FOR 8021/8260 SERIES

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135%	n/a
MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30%	n/a
SURROGATE SPIKES % RECOVERY BETWEEN 70-125%	n/a
BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130%	n/a

FIELD QC SAMPLES

SAMPLE	COLLECTED	DETECTIONS > REPDL
QCTB SAMPLES	N	0
QCEB SAMPLES	N	0
QCAB SAMPLES	N	0

Logged in as ORIONENV (AUTH_RP) CONTACT SITE ADMINISTRATOR.

Electronic Submittal Information

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UPLOADING A GEO_WELL FILE

Processing is complete. No errors were found!
Your file has been successfully submitted!

Submittal Title:	**01LV 2Q 2006 Status Report**
Submittal Date/Time:	**6/29/2006 12:16:50 PM**
Confirmation Number:	**4821110367**

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Logged in as ORIONENV (AUTH_RP)

CONTACT SITE ADMINISTRATOR.

KIFF Analytical LLC

Report Number : 50076
Date : 05/24/2006

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 : 50076
Date : 05/24/2006

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 sample TP-1-Post.

Matrix Spike/Matrix Spike Duplicate Results associated with sample TP-1-Post for the analyte Methyl-t-butyl ether were affected by the analyte concentrations already present in the un-spiked sample.

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 50076
Date : 05/24/2006

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

Sample : **MW-1** Matrix : Water Lab Number : 50076-01
Sample Date :05/16/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	96.5		% Recovery	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	99.3		% Recovery	EPA 8260B	05/20/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 50076

Date : 05/24/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **MW-2** Matrix : Water Lab Number : 50076-02

Sample Date :05/17/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**3200**	7.0	ug/L	EPA 8260B	05/20/2006
Toluene	**240**	7.0	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	**1200**	7.0	ug/L	EPA 8260B	05/20/2006
Total Xylenes	**2100**	7.0	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	**4600**	9.0	ug/L	EPA 8260B	05/22/2006
Diisopropyl ether (DIPE)	**< 7.0**	7.0	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	**< 7.0**	7.0	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	**46**	7.0	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	**1000**	40	ug/L	EPA 8260B	05/20/2006
Methanol	**< 700**	700	ug/L	EPA 8260B	05/20/2006
Ethanol	**< 70**	70	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	**< 7.0**	7.0	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	**< 7.0**	7.0	ug/L	EPA 8260B	05/20/2006
TPH as Gasoline	**22000**	700	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	97.7		% Recovery	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	05/20/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 50076

Date : 05/24/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **MW-3** Matrix : Water Lab Number : 50076-03

Sample Date :05/16/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	95.8		% Recovery	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	99.6		% Recovery	EPA 8260B	05/20/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 50076
Date : 05/24/2006

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

Sample : **MW-4** Matrix : Water Lab Number : 50076-04
Sample Date :05/16/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	95.8		% Recovery	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	05/20/2006

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 50076
Date : 05/24/2006

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

Sample : **MW-5** Matrix : Water Lab Number : 50076-05
Sample Date :05/16/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	**0.79**	0.50	ug/L	EPA 8260B	05/20/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
TPH as Gasoline	**140**	50	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	99.1		% Recovery	EPA 8260B	05/20/2006

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KIFF Analytical LLC

Report Number : 50076

Date : 05/24/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **MW-6** Matrix : Water Lab Number : 50076-06

Sample Date :05/17/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**270**	2.0	ug/L	EPA 8260B	05/20/2006
Toluene	**5.1**	2.0	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	**320**	2.0	ug/L	EPA 8260B	05/20/2006
Total Xylenes	**290**	2.0	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	**930**	2.0	ug/L	EPA 8260B	05/20/2006
Diisopropyl ether (DIPE)	**< 2.0**	2.0	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	**< 2.0**	2.0	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	**8.4**	2.0	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	**260**	9.0	ug/L	EPA 8260B	05/20/2006
Methanol	**< 200**	200	ug/L	EPA 8260B	05/20/2006
Ethanol	**< 20**	20	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	**< 2.0**	2.0	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	**< 2.0**	2.0	ug/L	EPA 8260B	05/20/2006
TPH as Gasoline	**7100**	200	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	96.9		% Recovery	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	05/20/2006

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Report Number : 50076
Date : 05/24/2006

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

Sample : **MW-7** Matrix : Water Lab Number : 50076-07
Sample Date :05/16/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.84**	0.50	ug/L	EPA 8260B	05/20/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	**10**	0.50	ug/L	EPA 8260B	05/20/2006
Total Xylenes	**7.9**	0.50	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
TPH as Gasoline	**930**	50	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	97.2		% Recovery	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	05/20/2006

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Report Number : 50076
Date : 05/24/2006

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

Sample : **MW-8** Matrix : Water Lab Number : 50076-08
Sample Date :05/16/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	96.0		% Recovery	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	05/20/2006

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Report Number : 50076
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Project Name : **Tesoro - Livermore**
Project Number : **67076**

Sample : **MW-9** Matrix : Water Lab Number : 50076-09
Sample Date :05/16/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**3.8**	0.50	ug/L	EPA 8260B	05/20/2006
Toluene	**0.57**	0.50	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	**12**	0.50	ug/L	EPA 8260B	05/20/2006
Total Xylenes	**1.8**	0.50	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	**4.9**	0.50	ug/L	EPA 8260B	05/20/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
TPH as Gasoline	**1600**	50	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	97.8		% Recovery	EPA 8260B	05/20/2006

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Report Number : 50076
Date : 05/24/2006

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

Sample : **MW-10** Matrix : Water Lab Number : 50076-10
Sample Date :05/16/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	99.8		% Recovery	EPA 8260B	05/20/2006

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Report Number : 50076

Date : 05/24/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **VW-2** Matrix : Water Lab Number : 50076-11

Sample Date :05/17/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**90**	2.5	ug/L	EPA 8260B	05/22/2006
Toluene	**2.6**	2.5	ug/L	EPA 8260B	05/22/2006
Ethylbenzene	**39**	2.5	ug/L	EPA 8260B	05/22/2006
Total Xylenes	**11**	2.5	ug/L	EPA 8260B	05/22/2006
Methyl-t-butyl ether (MTBE)	**1200**	2.5	ug/L	EPA 8260B	05/22/2006
Diisopropyl ether (DIPE)	**< 2.5**	2.5	ug/L	EPA 8260B	05/22/2006
Ethyl-t-butyl ether (ETBE)	**< 2.5**	2.5	ug/L	EPA 8260B	05/22/2006
Tert-amyl methyl ether (TAME)	**12**	2.5	ug/L	EPA 8260B	05/22/2006
Tert-Butanol	**700**	15	ug/L	EPA 8260B	05/22/2006
Methanol	**< 250**	250	ug/L	EPA 8260B	05/22/2006
Ethanol	**< 25**	25	ug/L	EPA 8260B	05/22/2006
1,2-Dichloroethane	**< 2.5**	2.5	ug/L	EPA 8260B	05/22/2006
1,2-Dibromoethane	**< 2.5**	2.5	ug/L	EPA 8260B	05/22/2006
TPH as Gasoline	**1800**	250	ug/L	EPA 8260B	05/22/2006
Toluene - d8 (Surr)	99.7		% Recovery	EPA 8260B	05/22/2006
4-Bromofluorobenzene (Surr)	97.4		% Recovery	EPA 8260B	05/22/2006

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Report Number : 50076

Date : 05/24/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **VW-3** Matrix : Water Lab Number : 50076-12

Sample Date :05/16/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	05/20/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	96.2		% Recovery	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	97.4		% Recovery	EPA 8260B	05/20/2006

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Report Number : 50076

Date : 05/24/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **TP-1-Pre** Matrix : Water Lab Number : 50076-13

Sample Date :05/17/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1500**	20	ug/L	EPA 8260B	05/24/2006
Toluene	**200**	20	ug/L	EPA 8260B	05/24/2006
Ethylbenzene	**980**	20	ug/L	EPA 8260B	05/24/2006
Total Xylenes	**2300**	20	ug/L	EPA 8260B	05/24/2006
Methyl-t-butyl ether (MTBE)	**12000**	20	ug/L	EPA 8260B	05/24/2006
Diisopropyl ether (DIPE)	**< 20**	20	ug/L	EPA 8260B	05/24/2006
Ethyl-t-butyl ether (ETBE)	**< 20**	20	ug/L	EPA 8260B	05/24/2006
Tert-amyl methyl ether (TAME)	**88**	20	ug/L	EPA 8260B	05/24/2006
Tert-Butanol	**1700**	90	ug/L	EPA 8260B	05/24/2006
Methanol	**< 2000**	2000	ug/L	EPA 8260B	05/24/2006
Ethanol	**< 200**	200	ug/L	EPA 8260B	05/24/2006
1,2-Dichloroethane	**< 20**	20	ug/L	EPA 8260B	05/24/2006
1,2-Dibromoethane	**< 20**	20	ug/L	EPA 8260B	05/24/2006
TPH as Gasoline	**19000**	2000	ug/L	EPA 8260B	05/24/2006
Toluene - d8 (Surr)	97.5		% Recovery	EPA 8260B	05/24/2006
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	05/24/2006

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Report Number : 50076

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Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **TP-1-Post** Matrix : Water Lab Number : 50076-14

Sample Date :05/17/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1400**	20	ug/L	EPA 8260B	05/24/2006
Toluene	**200**	20	ug/L	EPA 8260B	05/24/2006
Ethylbenzene	**920**	20	ug/L	EPA 8260B	05/24/2006
Total Xylenes	**1800**	20	ug/L	EPA 8260B	05/24/2006
Methyl-t-butyl ether (MTBE)	**9200**	20	ug/L	EPA 8260B	05/24/2006
Diisopropyl ether (DIPE)	**< 20**	20	ug/L	EPA 8260B	05/24/2006
Ethyl-t-butyl ether (ETBE)	**< 20**	20	ug/L	EPA 8260B	05/24/2006
Tert-amyl methyl ether (TAME)	**37**	20	ug/L	EPA 8260B	05/24/2006
Tert-Butanol	**2500**	90	ug/L	EPA 8260B	05/24/2006
Methanol	**< 10000**	10000	ug/L	EPA 8260B	05/24/2006
Ethanol	**< 200**	200	ug/L	EPA 8260B	05/24/2006
1,2-Dichloroethane	**< 20**	20	ug/L	EPA 8260B	05/24/2006
1,2-Dibromoethane	**< 20**	20	ug/L	EPA 8260B	05/24/2006
TPH as Gasoline	**20000**	2000	ug/L	EPA 8260B	05/24/2006
Toluene - d8 (Surr)	107		% Recovery	EPA 8260B	05/24/2006
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	05/24/2006

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Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **TP-2-Pre** Matrix : Water Lab Number : 50076-15

Sample Date :05/17/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1900**	70	ug/L	EPA 8260B	05/23/2006
Toluene	**2300**	70	ug/L	EPA 8260B	05/23/2006
Ethylbenzene	**1000**	70	ug/L	EPA 8260B	05/23/2006
Total Xylenes	**3600**	70	ug/L	EPA 8260B	05/23/2006
Methyl-t-butyl ether (MTBE)	**52000**	90	ug/L	EPA 8260B	05/23/2006
Diisopropyl ether (DIPE)	**< 70**	70	ug/L	EPA 8260B	05/23/2006
Ethyl-t-butyl ether (ETBE)	**< 70**	70	ug/L	EPA 8260B	05/23/2006
Tert-amyl methyl ether (TAME)	**460**	70	ug/L	EPA 8260B	05/23/2006
Tert-Butanol	**3200**	400	ug/L	EPA 8260B	05/23/2006
Methanol	**< 9000**	9000	ug/L	EPA 8260B	05/23/2006
Ethanol	**< 900**	900	ug/L	EPA 8260B	05/23/2006
1,2-Dichloroethane	**< 70**	70	ug/L	EPA 8260B	05/23/2006
1,2-Dibromoethane	**< 70**	70	ug/L	EPA 8260B	05/23/2006
TPH as Gasoline	**27000**	7000	ug/L	EPA 8260B	05/23/2006
Toluene - d8 (Surr)	110		% Recovery	EPA 8260B	05/23/2006
4-Bromofluorobenzene (Surr)	97.8		% Recovery	EPA 8260B	05/23/2006

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Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **TP-2-Post** Matrix : Water Lab Number : 50076-16

Sample Date :05/17/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2200**	90	ug/L	EPA 8260B	05/23/2006
Toluene	**1100**	90	ug/L	EPA 8260B	05/23/2006
Ethylbenzene	**1500**	90	ug/L	EPA 8260B	05/23/2006
Total Xylenes	**3300**	90	ug/L	EPA 8260B	05/23/2006
Methyl-t-butyl ether (MTBE)	**87000**	150	ug/L	EPA 8260B	05/23/2006
Diisopropyl ether (DIPE)	**< 90**	90	ug/L	EPA 8260B	05/23/2006
Ethyl-t-butyl ether (ETBE)	**< 90**	90	ug/L	EPA 8260B	05/23/2006
Tert-amyl methyl ether (TAME)	**680**	90	ug/L	EPA 8260B	05/23/2006
Tert-Butanol	**4800**	500	ug/L	EPA 8260B	05/23/2006
Methanol	**< 15000**	15000	ug/L	EPA 8260B	05/23/2006
Ethanol	**< 1500**	1500	ug/L	EPA 8260B	05/23/2006
1,2-Dichloroethane	**< 90**	90	ug/L	EPA 8260B	05/23/2006
1,2-Dibromoethane	**< 90**	90	ug/L	EPA 8260B	05/23/2006
TPH as Gasoline	**31000**	9000	ug/L	EPA 8260B	05/23/2006
Toluene - d8 (Surr)	109		% Recovery	EPA 8260B	05/23/2006
4-Bromofluorobenzene (Surr)	99.6		% Recovery	EPA 8260B	05/23/2006

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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	05/22/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/22/2006
Methanol	< 50	50	ug/L	EPA 8260B	05/22/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/22/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/22/2006
Toluene - d8 (Surr)	94.5		%	EPA 8260B	05/22/2006
4-Bromofluorobenzene (Surr)	99.8		%	EPA 8260B	05/22/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/23/2006
Methanol	< 50	50	ug/L	EPA 8260B	05/23/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/23/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/23/2006
Toluene - d8 (Surr)	108		%	EPA 8260B	05/23/2006
4-Bromofluorobenzene (Surr)	99.6		%	EPA 8260B	05/23/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/22/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/22/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/22/2006
Toluene - d8 (Surr)	103		%	EPA 8260B	05/22/2006
4-Bromofluorobenzene (Surr)	102		%	EPA 8260B	05/22/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/20/2006
Methanol	< 50	50	ug/L	EPA 8260B	05/20/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	96.2		%	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	101		%	EPA 8260B	05/20/2006

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 50076

Date : 05/24/2006

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Methanol	< 50	50	ug/L	EPA 8260B	05/23/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/23/2006
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/23/2006
Methanol	< 50	50	ug/L	EPA 8260B	05/23/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/23/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/23/2006
Toluene - d8 (Surr)	96.3		%	EPA 8260B	05/23/2006
4-Bromofluorobenzene (Surr)	99.8		%	EPA 8260B	05/23/2006
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/20/2006
Methanol	< 50	50	ug/L	EPA 8260B	05/20/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	05/20/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/20/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/20/2006
Toluene - d8 (Surr)	102		%	EPA 8260B	05/20/2006
4-Bromofluorobenzene (Surr)	94.6		%	EPA 8260B	05/20/2006

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 50076

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/24/2006

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	50114-04	<0.50	39.9	40.0	41.1	41.2	ug/L	EPA 8260B	5/22/06	103	103	0.0315	70-130	25
Toluene	50114-04	<0.50	39.9	40.0	38.2	38.7	ug/L	EPA 8260B	5/22/06	95.7	96.8	1.05	70-130	25
Tert-Butanol	50114-04	12	200	200	217	224	ug/L	EPA 8260B	5/22/06	103	106	3.23	70-130	25
Methyl-t-Butyl Ether	50114-04	300	39.9	40.0	329	335	ug/L	EPA 8260B	5/22/06	73.6	88.6	18.5	70-130	25
Benzene	50086-14	<0.50	40.0	40.0	37.1	34.0	ug/L	EPA 8260B	5/22/06	92.8	85.0	8.77	70-130	25
Toluene	50086-14	<0.50	40.0	40.0	38.6	36.0	ug/L	EPA 8260B	5/22/06	96.4	89.9	6.99	70-130	25
Tert-Butanol	50086-14	<5.0	200	200	184	172	ug/L	EPA 8260B	5/22/06	92.1	86.2	6.57	70-130	25
Methyl-t-Butyl Ether	50086-14	<0.50	40.0	40.0	33.5	31.3	ug/L	EPA 8260B	5/22/06	83.7	78.2	6.86	70-130	25
Benzene	50111-06	<0.50	40.0	40.0	40.4	38.5	ug/L	EPA 8260B	5/22/06	101	96.3	4.72	70-130	25
Toluene	50111-06	7.0	40.0	40.0	48.8	46.5	ug/L	EPA 8260B	5/22/06	105	98.8	5.83	70-130	25
Tert-Butanol	50111-06	9.4	200	200	211	201	ug/L	EPA 8260B	5/22/06	101	95.8	5.17	70-130	25
Methyl-t-Butyl Ether	50111-06	<0.50	40.0	40.0	36.0	35.3	ug/L	EPA 8260B	5/22/06	90.0	88.3	1.85	70-130	25
Benzene	50163-04	<0.50	40.0	40.0	41.1	36.9	ug/L	EPA 8260B	5/23/06	103	92.3	10.7	70-130	25
Toluene	50163-04	<0.50	40.0	40.0	43.8	40.7	ug/L	EPA 8260B	5/23/06	110	102	7.35	70-130	25
Tert-Butanol	50163-04	13	200	200	226	192	ug/L	EPA 8260B	5/23/06	106	89.8	16.9	70-130	25
Methyl-t-Butyl Ether	50163-04	77	40.0	40.0	119	110	ug/L	EPA 8260B	5/23/06	106	82.3	25.7	70-130	25
Benzene	50077-05	<0.50	40.0	40.0	41.4	39.7	ug/L	EPA 8260B	5/20/06	103	99.2	4.12	70-130	25
Toluene	50077-05	<0.50	40.0	40.0	39.8	38.3	ug/L	EPA 8260B	5/20/06	99.6	95.7	3.99	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 50076

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 05/24/2006

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
Tert-Butanol	50077-05	<5.0	200	200	198	195	ug/L	EPA 8260B	5/20/06	99.1	97.7	1.46	70-130	25
Methyl-t-Butyl Ether	50077-05	2.9	40.0	40.0	45.1	43.8	ug/L	EPA 8260B	5/20/06	105	102	3.00	70-130	25
Benzene	50119-09	<0.50	40.0	40.0	39.6	39.4	ug/L	EPA 8260B	5/23/06	99.1	98.4	0.678	70-130	25
Toluene	50119-09	<0.50	40.0	40.0	38.4	38.0	ug/L	EPA 8260B	5/23/06	96.1	95.1	1.05	70-130	25
Tert-Butanol	50119-09	<5.0	200	200	196	190	ug/L	EPA 8260B	5/23/06	97.9	95.2	2.80	70-130	25
Methyl-t-Butyl Ether	50119-09	<0.50	40.0	40.0	40.0	38.8	ug/L	EPA 8260B	5/23/06	100	97.1	3.04	70-130	25
Benzene	50156-07	<0.50	40.0	40.0	41.4	40.2	ug/L	EPA 8260B	5/23/06	103	100	2.93	70-130	25
Toluene	50156-07	<0.50	40.0	40.0	40.8	39.8	ug/L	EPA 8260B	5/23/06	102	99.4	2.44	70-130	25
Tert-Butanol	50156-07	<5.0	200	200	200	200	ug/L	EPA 8260B	5/23/06	99.9	100	0.378	70-130	25
Methyl-t-Butyl Ether	50156-07	10	40.0	40.0	53.5	53.0	ug/L	EPA 8260B	5/23/06	108	107	1.14	70-130	25
Benzene	50068-09	<0.50	40.0	40.0	40.3	39.6	ug/L	EPA 8260B	5/20/06	101	99.0	1.84	70-130	25
Toluene	50068-09	<0.50	40.0	40.0	39.6	39.3	ug/L	EPA 8260B	5/20/06	99.0	98.4	0.679	70-130	25
Tert-Butanol	50068-09	24	200	200	220	220	ug/L	EPA 8260B	5/20/06	97.9	98.2	0.346	70-130	25
Methyl-t-Butyl Ether	50068-09	6.8	40.0	40.0	46.9	48.2	ug/L	EPA 8260B	5/20/06	100	103	3.03	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 50076

QC Report : Laboratory Control Sample (LCS)

Date : 05/24/2006

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	5/22/06	102	70-130
Toluene	40.0	ug/L	EPA 8260B	5/22/06	96.0	70-130
Tert-Butanol	200	ug/L	EPA 8260B	5/22/06	108	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	5/22/06	83.8	70-130
Benzene	40.0	ug/L	EPA 8260B	5/22/06	93.9	70-130
Toluene	40.0	ug/L	EPA 8260B	5/22/06	101	70-130
Tert-Butanol	200	ug/L	EPA 8260B	5/22/06	96.2	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	5/22/06	89.5	70-130
Benzene	40.0	ug/L	EPA 8260B	5/22/06	96.0	70-130
Toluene	40.0	ug/L	EPA 8260B	5/22/06	100	70-130
Tert-Butanol	200	ug/L	EPA 8260B	5/22/06	101	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	5/22/06	90.9	70-130
Benzene	40.0	ug/L	EPA 8260B	5/23/06	96.4	70-130
Toluene	40.0	ug/L	EPA 8260B	5/23/06	108	70-130
Tert-Butanol	200	ug/L	EPA 8260B	5/23/06	101	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	5/23/06	96.1	70-130
Benzene	40.0	ug/L	EPA 8260B	5/20/06	99.1	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 50076

QC Report : Laboratory Control Sample (LCS)

Date : 05/24/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Toluene	40.0	ug/L	EPA 8260B	5/20/06	94.8	70-130
Tert-Butanol	200	ug/L	EPA 8260B	5/20/06	96.4	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	5/20/06	101	70-130
Benzene	40.0	ug/L	EPA 8260B	5/23/06	101	70-130
Toluene	40.0	ug/L	EPA 8260B	5/23/06	97.6	70-130
Tert-Butanol	200	ug/L	EPA 8260B	5/23/06	97.6	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	5/23/06	102	70-130
Benzene	40.0	ug/L	EPA 8260B	5/23/06	95.7	70-130
Toluene	40.0	ug/L	EPA 8260B	5/23/06	94.7	70-130
Tert-Butanol	200	ug/L	EPA 8260B	5/23/06	92.7	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	5/23/06	97.9	70-130
Benzene	40.0	ug/L	EPA 8260B	5/20/06	99.7	70-130
Toluene	40.0	ug/L	EPA 8260B	5/20/06	102	70-130
Tert-Butanol	200	ug/L	EPA 8260B	5/20/06	99.2	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	5/20/06	93.5	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. 50076

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: CR

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

Sample Designation	Date	Time	Sampling	Container: 40 ml VOA	Container: SLEEVE	Container: POLY	Container: AMBER	Container: TEDLAR	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	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	5-16	1045		3					X				X							X				X	X				1wk	01
MW-2	5-17	0825																												02
MW-3	5-16	1340																												03
MW-4	5-16	1200																												04
MW-5	5-16	1420																												05
MW-6	5-17	0710																												06
MW-7	5-16	1515																												07
MW-8	5-16	1230																												08
MW-9	5-16	1600																												09
MW-10	5-16	1615																												10

Relinquished by:	Date	Time	Received by:
[signature]	5-17	1200	[signature]
[signature]			[signature]
[signature]	05/17/06	1555	[signature] Kiff analyst

Remarks: CR # 562-787-0199

SAMPLE RECEIPT
Temp °C 5.6 Therm. ID# IR-1
Initial JM Date 051706
Time 1720 Coolant present: Yes No

Bill to: Tesoro Companies, Inc.

KIFF ANALYTICAL LLC

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

Lab No. 50070

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Mike Purchase

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

California EDF Report? ☑ Yes ☐ No

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: [signature] CR

Sample Designation	Date	Time	40 ml VOA	SLEEVE	POLY	AMBER	TEDLAR	HCl	HNO_3	ICE	NONE	WATER	SOIL	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 (12hr, 24hr, 48hr, 72hr, 1wk ◉, 2wk)	For Lab Use Only
VW-2	5-17	0840	3					X											X				X	X							1wk	11
VW-3	5-16	0900	↓					↓											↓				↓	↓							↓	12
TP-1-Pre	5-17	0900	↓					↓											↓				↓	↓							↓	13
TP-1-Post	5-17	0920	↓					↓											↓				↓	↓							↓	14
TP-2-Pre	5-17	0935	↓					↓											↓				↓	↓							↓	15
TP-2-Post	5-17	1005	↓					↓											↓				↓	↓							↓	16

Relinquished by:	Date	Time	Received by:
[signature]	5-17	1200	[line]
[line]			
[line]	051706	1355	Received by Laboratory: [signature] Kiff Analytical

Remarks:

SAMPLE RECEIPT
Temp °C ______ Therm. ID# ______
Initials ______ Date ______
Time ______ Coolant present: Yes / No

Bill to: Tesoro Companies, Inc.

APPENDIX C

FIELD AND QA/QC PROCEDURES

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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.

Drilling Methods

Cone Penetrometer Test (CPT) Rig

Before initiating drilling activities, Arctos will mark the boring locations and contact Underground Service Alert to clear the area of subsurface lines and utilities. Arctos will also obtain boring and well permits from the Zone 7 Water Agency. CPT borings will be advanced using a 20-ton capacity integrated electronic cone system advanced by direct-push using the weight of the rig. The cone will take measurements of cone bearing (qc), sleeve friction (fs), and dynamic pore water pressure (u2) at 5-centimeter intervals during penetration to provide a nearly continuous geologic log. Soil behavior type and stratigraphic interpretation will be determined based on relationships between cone bearing, sleeve friction, and dynamic pore water pressure (reference: P.K. Robertson. "Soil Classification using the Cone Penetration Test," Canadian Geotechnical Journal, Volume 27, 1990).

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.

Field QA/QC Procedures

Procedures for preserving and transporting 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

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.

CPT rods 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.