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12 June 2006
Project No. 01LV

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

Subject: First 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 first quarter 2006 at the subject site (Figure 1). From January through March 2005, Arctos completed the following tasks:

- Quarterly groundwater monitoring
- Site investigation activities
- Update of site conceptual model.

Groundwater Monitoring

Arctos's subcontractor, Blaine Tech Services, Inc. (Blaine Tech), of San Jose, California, performed groundwater monitoring at the site on 9 February 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, turbidity, temperature, dissolved oxygen (D.O.), and oxidation reduction potential (ORP) 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.

In addition to the standard groundwater analyses, 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 listed in Table 2.

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 26 to 30 feet below ground surface (441 to 448 feet above mean sea level). Water levels had increased by 4 to 5 feet since November 2005. 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 and benzene concentrations of 25,000 and 3,300 micrograms per liter (µg/l), respectively, were at well MW-2. The highest MTBE and tert-butyl alcohol (TBA) concentrations of 12,000 and 2,800 µg/l, respectively, were at well VW-2. Elevated benzene and MTBE concentrations in groundwater (340 and 910 µg/l, respectively) are also present approximately 140 feet downgradient of the site at well MW-6.

The following results for natural attenuation parameters show the presence of biological activity in the groundwater to potentially degrade TPHg, benzene, and MTBE:

- Decreasing concentrations of nitrate and sulfate in the source area (well MW-2) and downgradient (wells MW-6 and MW-9)
- Increasing concentrations of ferrous iron
- Decreasing values of ORP.

D.O. concentrations were stable through the centerline of the plume, indicating the presence of a source of groundwater with higher D.O. concentrations (i.e., surface water infiltration). Groundwater natural attenuation parameters are summarized in Table 2.

Historical analytical results for the groundwater samples are summarized in Table 3. 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.

Field Investigation Activities

The objectives of the investigation were to (1) identify the depth of the regional aquitard at and downgradient of the site, (2) determine the vertical extent of impacted soil and groundwater at and downgradient of the site, and (3) identify possible source areas in the vadose zone at the site. A work plan to conduct the investigation activities was submitted by Arctos in the Third Quarter 2005 Status Report dated 15 October 2005 and approved by Alameda County Environmental Health (ACEH) in a letter dated 2 December 2005.

To meet these objectives, Arctos (1) collected soil gas samples at nine locations on site and (2) installed six soil borings for delineation of vertical and horizontal impacts to groundwater. Figure 2 shows the locations of the soil borings and soil gas sampling locations. Arctos obtained boring permits from the Zone 7 Water Agency and notified Underground Service Alert to clear the boring locations for subsurface lines and utilities before drilling.

Soil Gas Sampling

On 3 January 2006, TEG of Rancho Cordova, California, collected nine soil gas samples at a depth of 4.5 to 5 feet below grade following the California Department of Toxic Substances Control guidelines for soil gas sampling. Appendix C presents the field investigation and quality assurance/quality control (QA/QC) procedures.

Drilling and Soil Sampling

Four soil borings (DB-1 through DB-4) were drilled on site from 25 to 27 January 2006 by Vironex, Inc. (Vironex), of San Leandro, California, using a direct push drill rig (Figure 2). Arctos personnel logged the borings continuously from the surface to the completed depth and collected soil samples for laboratory analysis at a minimum of 10-foot intervals with

additional samples collected based on field screening with a photo ionization detector (PID).

Two soil borings (DB-5 and DB-6) were drilled off site on 3 February 2006 by Gregg Drilling and Testing, Inc., of Martinez, California, using a cone penetration test (CPT) rig. Borings were logged continuously using measurements of cone bearing, sleeve friction, and pore water pressure.

The borings were drilled at the following locations (Figure 2):

- Boring DB-1, on site northwest (downgradient) of the USTs
- Borings DB-2, DB-3, and DB-4, on site north and northwest (downgradient) of the dispenser islands
- Borings DB-5 and DB-6, off site northwest (downgradient) of the site.

Borings DB-1, DB-2, DB-3, and DB-4 were completed to approximately 54 to 67 feet below grade when the direct push rig met refusal. Borings DB-5 and DB-6 were completed to approximately 90 and 86 feet below grade, respectively. Appendix D contains the boring logs; Appendix C presents the field investigation and QA/QC procedures.

Grab Groundwater Sampling

Arctos attempted to collect 14 grab groundwater samples from coarse-grained soil layers identified in the 6 borings. The following table summarizes the sample intervals of the attempted groundwater sampling for each boring.

Boring	Grab Groundwater Sampling Intervals (feet below grade)	Attempted Sampling Intervals (feet below grade)
DB-1	46 to 50 and 56 to 60	
DB-2	41 to 45 and 51 to 55	
DB-3	46 to 50	63 to 67
DB-4	46 to 50	61 to 64
DB-5	36 to 40 and 49 to 53	65 to 69
DB-6	36 to 40 and 49 to 53	59 to 63

An insufficient amount of groundwater entered the sampling chamber from borings DB-3 through DB-6 at depths greater than 60 feet; therefore, samples were not collected. Ten

samples were collected from the shallower depths and delivered for analysis to Kiff Analytical LLC (Kiff), of Davis, California. Appendix C presents the field investigation and QA/QC procedures.

Site Surveying
On 21 March 2006, Cross Land Surveying, Inc., of San Jose, California, surveyed the new borings. Boring locations were measured to the nearest 1/10 foot and elevations to the nearest 1/100 foot relative to mean sea level (MSL) at the ground surface. The elevations were based on City of Livermore Benchmark K2-741 (elevation of 467.835 feet above mean sea level [MSL]) at the intersection of South P Street and Railroad Avenue in the City of Livermore, California. The survey data are reflected in the site plan (Figure 2). The site survey report is in Appendix E.

Analytical Program
Selected soil and groundwater samples were delivered to Kiff for analysis of TPHg, BTEX, oxygenates, lead scavengers, methanol and ethanol by modified EPA Method 8260B. TEG analyzed soil gas samples on site for TPHg, BTEX, and oxygenates using EPA Method 8260.

The soil gas, soil, and grab groundwater analytical results are summarized in Tables 4, 5, and 6, respectively. Chain-of-custody forms, laboratory analytical reports, and laboratory QA/QC data are in Appendix B.

Field Investigation Results

Soil Gas Samples
Benzene and MTBE were not detected in the soil gas samples collected. TPHg was detected in soil gas sample SG-4 at a concentration of 19 µg/l as vapor. Table 4 summarizes the soil gas analytical results. The laboratory report and chain-of-custody form are in Appendix B.

Soil Samples
The subsurface soil encountered during drilling generally consisted of silty clays to sands and gravels from the ground surface to approximately 40 feet below grade and sands and gravels from approximately 40 to 82 feet below grade with occasional layers of clayey silt. Stiff and cemented sands were identified in CPT borings DB-5 and DB-6 from approximately 63 to 82 feet below grade. The regional aquitard was observed at an approximately depth of 82 feet grade consisting of clays and silts. This lithology was consistent with previous investigations. Lithologic cross sections are shown on Figures 6 and 7.

Soil samples were collected from onsite borings DB-1 through DB-4. The static water level measured in nearby groundwater monitoring wells was approximately 26 to 27 feet below ground surface. Soil samples collected above a depth of 30 feet below grade are assumed to be in the vadose zone and samples below 30 feet are beneath the water table.

The only detected concentrations in the vadose zone were in boring DB-3 downgradient of the dispenser islands. MTBE was detected at boring DB-3 at concentrations of 5.6 and 18 micrograms per kilogram (µg/kg) at depths of 10 and 20 feet below grade, respectively.

The highest TPHg and benzene concentrations of 140 milligrams per kilogram (mg/kg) and 3,100 µg/kg, respectively, were detected at a depth of 48 feet below grade in boring DB-1, downgradient of the USTs. Boring DB-2 had a benzene concentration of 130 µg/kg at a depth of 43 feet below grade and boring DB-3 had a TPHg concentration of 120 mg/kg at a depth of 66 feet below grade. These concentrations are above the published Environmental Screening Levels (ESLs), established by the RWQCB, of 100 mg/kg for TPHg and 44 µg/kg for benzene.

The highest MTBE and TBA concentrations were detected in borings DB-2, DB-3, and DB-4, located downgradient of the dispenser islands (Table 5). MTBE concentrations exceeding the ESL (23 mg/kg) were encountered at boring DB-3 from the water table to the total boring depth (30 to 66 feet below grade). TBA concentrations exceeding the ESL (73 mg/kg) were also detected in DB-3 between 30 and 63 feet below grade. MTBE and TBA concentrations generally decreased with depth.

One soil sample was collected from offsite boring DB-5 at a depth of 90 feet below grade. TPHg and benzene were detected at concentrations of 1.5 mg/kg and 17 µg/kg, respectively. MTBE and TBA were not detected. These concentrations are below the ESLs for each compound. Soil analytical results are summarized in Table 5 and shown on Figures 6 and 7. Soil analytical laboratory reports and chain-of-custody forms are in Appendix B.

Grab Groundwater Samples

Groundwater samples were collected from borings DB-1 through DB-6. Grab samples from all six borings contained detectable concentrations of TPHg and benzene. Only boring DB-6 (furthest downgradient from site) had nondetected concentrations of MTBE and TBA. Boring DB-2 contained the highest concentrations of TPHg and benzene at 120,000 and 5,200 µg/l, respectively, from 51 to 55 feet below grade. Boring DB-2 also had the highest concentrations of MTBE and TBA at 38,000 and 2,700 µg/l, respectively, from 41 to 45 feet below grade. Table 6 summarizes the grab groundwater analytical results and the laboratory reports are in Appendix B. Figures 4 and 5 show the

isoconcentration contours for benzene and MTBE, respectively. Figures 6 and 7 show recent groundwater concentrations on geologic cross sections.

Site Conceptual Model Update

Arctos updated the site conceptual model (SCM) using the electronic format developed by ACEH. The SCM summarizes the regional geology, hydrogeology, chronology of site activities, and soil and groundwater impacts. The SCM table, without attachments, is provided in Appendix F. The complete SCM can be viewed at the project internet web site at https://portal.haleyaldrich.com/sites/ext/tesoro with a username and password. Based on the results of the investigation, the site conditions were updated with the conclusions described below.

Conclusions

Results of the field activities and laboratory analyses indicate the following conclusions:

- No existing source areas for MTBE are present in the vadose zone that would lead to further increasing concentrations in the groundwater
- The regional aquitard is present in the area of the site at a depth of approximately 82 feet below grade
- Groundwater is impacted by TPHg, benzene, and MTBE, and is delineated to the northwest by well MW-6, to the south by well MW-1, to the north by MW-5, and to the east by wells MW-3 and MW-4
- Impacted groundwater is present below the screened intervals of the existing groundwater monitoring wells (below 55 feet below grade); however, the highest concentrations are present within the existing screen intervals.

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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STATE OF CALIFORNIA

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 Natural Attenuation Parameters
Table 3 – Groundwater Analytical Results
Table 4 – Soil Gas Analytical Results
Table 5 – Soil Analytical Results
Table 6 – Grab Groundwater Analytical Results
Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Groundwater Elevation Contours
Figure 4 – Benzene Concentration Contours
Figure 5 – MTBE Concentration Contours
Figure 6 – Gelogic Cross Section A-A′
Figure 7 – Gelogic Cross Section B-B′
Appendix A – Field Data Sheets
Appendix B – Laboratory Analytical Reports and Chain-of-Custody Form
Appendix C – Field and QA/QC Procedures
Appendix D – Boring Logs
Appendix E – Site Survey Report
Appendix F – Site Conceptual Model

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

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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-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
MW-2	6/1/1993	38.02	472.98	434.96
	6/22/1993	39.07		433.91
	10/6/1993	43.72		429.26
	1/13/1994	35.85		437.13
	3/30/1994	32.82		440.16
	4/25/1994	34.76		438.22
	8/12/1994	44.33		428.65
	12/14/1994	40.00		432.98
	2/10/1995	32.16		440.82
	6/15/1995	25.93		447.05
	9/26/1995	32.42		440.56
	12/15/1995	29.41		443.57
	3/21/1996	17.47		455.51
	6/13/1996	23.69		449.29
	9/16/1996	31.24		441.74
	12/2/1996	26.90		446.08
	3/7/1997	21.33		451.65
	6/12/1997	29.94		443.04

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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	9/29/1997	34.22	472.98	438.76
(cont.)	12/1/1997	35.94		437.04
	3/19/1998	20.34		452.64
	5/29/1998	22.63		450.35
	9/15/1998	32.30		440.68
	11/30/1998	36.90		436.08
	1/17/1999	30.17		442.81
	6/10/1999	29.98		443.00
	9/7/1999	31.85		441.13
	12/13/1999	33.72		439.26
	3/13/2000	26.54		446.44
	6/12/2000	28.44		444.54
	11/10/2000	31.31		441.67
	12/31/2000	32.68		440.30
	3/27/2001	30.81		442.17
	6/30/2001	37.58		435.40
	9/26/2001	44.97		428.01
	12/18/2001	40.67		432.31
	3/18/2002	38.94		434.04
	6/5/2002	36.45		436.53
	8/21/2002	37.15		435.83
	12/3/2002	36.76		436.22
	3/4/2003	33.60		439.38
	6/10/2003	32.89		440.09
	9/9/2003	35.45		437.53
	12/23/2003	31.79		441.19
	3/23/2004	28.25		444.73
	5/10/2004	30.91		442.07
	8/4/2004	35.36		437.62
	11/4/2004	34.92		438.06
	1/12/2005	29.46		443.52
	5/2/2005	25.61		447.37
	7/19/2005	30.11		442.87
	11/21/2005	32.04		440.94
	2/9/2006	27.11		445.87

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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-3	6/1/1993	36.18	473.37	437.19
	6/22/1993	37.11		436.26
	10/6/093	41.15		432.22
	1/13/1994	33.95		439.42
	3/30/1994	30.97		442.40
	4/25/1994	32.46		440.91
	8/12/1994	41.72		431.65
	12/14/1994	37.62		435.75
	2/10/1995	29.96		443.41
	6/15/1995	23.66		449.71
	9/26/1995	29.62		443.75
	12/15/1995	27.10		446.27
	3/21/1996	15.85		457.52
	6/13/1996	21.31		452.06
	9/16/1996	28.62		444.75
	12/2/1996	25.55		447.82
	3/7/1997	19.77		453.60
	6/12/1997	27.67		445.70
	9/29/1997	29.60		443.77
	12/1/1997	33.37		440.00
	3/19/1998	18.76		454.61
	5/29/1998	20.64		452.73
	9/15/1998	30.70		442.67
	11/30/1998	34.96		438.41
	1/17/1999	28.81		444.56
	6/10/1999	28.10		445.27
	9/7/1999	30.38		442.99
	12/13/1999	31.46		441.91
	3/13/2000	24.28		449.09
	6/12/2000	26.80		446.57
	11/10/2000	29.47		443.90
	12/31/2000	31.38		441.99
	3/27/2001	29.94		443.43
	6/30/2001	37.54		435.83
	9/26/2001	45.17		428.20

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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	12/18/2001	39.41	473.37	433.96
(cont.)	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
MW-4	3/30/1994	31.56	473.64	442.08
	4/25/1994	32.73		440.91
	8/12/1994	41.61		432.03
	12/14/1994	38.11		435.53
	2/10/1995	30.50		443.14
	6/15/1995	23.63		450.01
	9/26/1995	29.70		443.94
	12/15/1995	27.56		446.08
	3/21/1996	15.63		458.01
	6/13/1996	21.07		452.57
	9/16/1996	28.99		444.65
	12/2/1996	26.04		447.60
	3/7/1997	19.69		453.95
	6/12/1997	28.04		445.60
	9/29/1997	29.91		443.73
	12/1/1997	33.88		439.76
	3/19/1998	18.67		454.97

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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-4	5/29/1998	20.16	473.64	453.48
(cont.)	9/15/1998	30.46		443.18
	11/30/1998	34.50		439.14
	1/17/1999	28.30		445.34
	6/10/1999	27.60		446.04
	9/7/1999	30.79		442.85
	12/13/1999	31.60		442.04
	3/13/2000	24.35		449.29
	6/12/2000	26.91		446.73
	11/10/2000	29.71		443.93
	12/31/2000	31.79		441.85
	3/27/2001	29.98		443.66
	6/30/2001	36.88		436.76
	9/26/2001	43.87		429.77
	12/18/2001	39.30		434.34
	3/18/2002	37.75		435.89
	6/5/2002	35.68		437.96
	8/21/2002	36.58		437.06
	12/3/2002	35.90		437.74
	3/4/2003	32.73		440.91
	6/10/2003	31.20		442.44
	9/9/2003	34.64		439.00
	12/23/2003	31.30		442.34
	3/23/2004	26.71		446.93
	5/10/2004	30.33		443.31
	8/4/2004	34.87		438.77
	11/4/2004	34.28		439.36
	1/12/2005	28.67		444.97
	5/2/2005	24.46		449.18
	7/19/2005	29.36		444.28
	11/21/2005	31.80		441.84
	2/9/2006	26.34		447.30
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

TABLE 1

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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	12/14/1994	38.89	472.67	433.78
(cont.)	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
	8/21/2002	36.76		435.91
	12/3/2002	36.12		436.55
	3/4/2003	32.90		439.77
	6/10/2003	33.04		439.63
	9/9/2003	34.20		438.47

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(b)] (feet MSL)	Water Table Elevation[(c)] (feet MSL)
MW-5	12/23/2003	31.38	472.67	441.29
(cont.)	3/23/2004	27.51		445.16
	5/10/2004	31.12		441.55
	8/4/2004	35.09		437.58
	11/4/2004	34.34		438.33
	1/12/2005	29.19		443.48
	5/2/2005	25.31		447.36
	7/19/2005	30.49		442.18
	11/21/2005	32.35		440.32
	2/9/2006	27.19		445.48
MW-6	3/30/1994	33.38	471.93	438.55
	4/25/1994	35.49		436.44
	8/12/1994	45.14		426.79
	12/14/1994	40.99		430.94
	2/10/1995	33.34		438.59
	6/15/1995	26.88		445.05
	9/26/1995	33.55		438.38
	12/15/1995	30.32		441.61
	3/21/1996	18.89		453.04
	6/13/1996	24.62		447.31
	9/16/1996	32.64		439.29
	12/2/1996	27.42		444.51
	3/7/1997	22.13		449.80
	6/12/1997	31.02		440.91
	9/29/1997	35.77		436.16
	12/1/1997	37.14		434.79
	3/19/1998	21.10		450.83
	5/29/1998	23.26		448.67
	9/15/1998	33.50		438.43
	11/30/1998	38.73		433.20
	1/17/1999	32.05		439.88
	6/10/1999	31.44		440.49
	9/7/1999	33.94		437.99
	12/13/1999	35.84		436.09
	3/13/2000	28.45		443.48

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	6/12/2000	30.52	471.93	441.41
(cont.)	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
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

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	12/2/1996	27.11	472.33	445.22
(cont.)	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
	12/3/2002	36.52		435.81
	3/4/2003	32.60		439.73
	6/10/2003	31.33		441.00
	9/9/2003	34.71		437.62
	12/23/2003	30.80		441.53
	3/23/2004	26.41		445.92
	5/10/2004	29.86		442.47
	8/4/2004	34.06		438.27
	11/4/2004	34.12		438.21
	1/12/2005	28.83		443.50
	5/2/2005	24.66		447.67

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	7/19/2005	29.07	472.33	443.26
(cont.)	11/21/2005	30.42		441.91
	2/9/2006	26.15		446.18
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
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
	2/9/2006	29.44		441.34
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
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

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)
VW-2	5/2/2005	25.34	473.28	447.94
(cont.)	7/19/2005	29.76		443.52
	11/21/2005	31.81		441.47
	2/9/2006	27.21		446.07
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
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
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
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 NATURAL ATTENUATION PARAMETERS
TESORO - LIVERMORE, 67076

Monitoring Well	Location[a]	Sample Date	DO[b] (mg/l)	ORP[b] (mV)	Conductivity[b] (µS)	Temp[b] (°C)	pH[b]	TOC[c] (mg/l)	COD[d] (mg/l)	Alkalinity[e] (mg/l)	Chloride[f] (mg/l)	Ferrous Iron[g] (mg/l)	Nitrate[f] (mg/l)	Nitrite[f] (mg/l)	Sulfate[f] (mg/l)	Sulfide[h] (mg/l)	Phosphorus[i] (mg/l)	Carbon Dioxide[j] (mg/l)
MW-4	170 ft CG	2/9/2006	0.96	39	1,137	19.4	7.38	8.0	61	430	75	ND<0.1[k]	32	ND<0.1	70	ND<0.05	0.54	41
MW-3	80 ft CG	2/9/2006	0.90	35	1,052	19.6	7.31	7.0	56	390	98	ND<0.1	4.3	ND<0.1	57	ND<0.05	0.34	70
MW-2	source	2/9/2006	0.89	-82	1,133	19.5	7.07	37	150	530	72	1.4	0.65	ND<0.1	1.5	ND<0.05	0.27	99
MW-6	145 ft DG	2/9/2006	1.01	-53	1,182	20.1	6.97	21	110	550	68	0.87	ND<0.5	ND<0.1	ND<0.5	ND<0.05	0.62	130
MW-9	325 ft DG	2/9/2006	1.00	-51	1,159	22.2	7.32	12	87	450	94	0.20	ND<0.5	ND<0.1	11	ND<0.05	0.59	62

(a) Samples collected from wells MW-4 (170 feet cross gradient [CG] of source), MW-3 (80 feet CG of source), MW-2 (source area), MW-6 (145 feet downgradient [DG] of source), and MW-9 (325 feet DG of source).
(b) Dissolved oxygen (DO), oxidation reduction potential (ORP), conductivity, temperature, and pH measured using field instruments; reported in milligrams per liter (mg/l), millivolts, micro siemens, and degrees Celsius.
(c) Total organic carbon (TOC) analyzed by EPA Method 415.1.
(d) Chemical oxygen demand (COD) analyzed by EPA Method 410.4.
(e) Alkalinity analyzed by Method SM2320B.
(f) Chloride, nitrate (NO_3), nitrite (NO_2), and sulfate (SO_4) analyzed by EPA Method 300.
(g) Ferrous Iron analyzed by Method SM3500-Fe D.
(h) Sulfide (S_2) analyzed by EPA Method 376.2
(i) Phosphorus analyzed by EPA Method 365.3.
(j) Carbon Dioxide (CO_2) analyzed by Method SM 4500C.
(k) ND - Not detected at the reporting limit indicated.

TABLE 3

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 3

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
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 3

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 3

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
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 3

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
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
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	-	-	-	-	-	-	-	-
	12/2/1996	200	1.1	0.64	ND<0.5	ND<0.5	ND<5	-	-	-	-	-	-	-	-

TABLE 3

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	3/7/1997	520	74	ND<0.5	0.58	1.5	ND<5	-	-	-	-	-	-	-	-
(cont.)	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 3

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
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 3

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 3

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
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	-	-	-	-	-	-	-	-

TABLE 3

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-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

TABLE 3

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-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
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
MW-10	9/5/2003	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	-	-	-	-
	12/23/2003	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	3/23/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/10/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	0.61	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/2004	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5

TABLE 3

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-10	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
(cont.)	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
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
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
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
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
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	-	-	-	-	-	-	-	-

TABLE 3

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-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.

TABLE 4

SOIL GAS ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Sample	Depth (feet)	Purge Volume	Sample Date	TPHg[(a)] (µg/l)	Benzene[(a)] (µg/l)	Toluene[(a)] (µg/l)	Ethylbenzene[(a)] (µg/l)	Xylenes[(a)] (µg/l)	MTBE[(a)] (µg/l)	DIPE[(a)] (µg/l)	ETBE[(a)] (µg/l)	TAME[(a)] (µg/l)	TBA[(a)] (µg/l)
SG-1	5	3	1/3/06	ND<5[(b)]	ND<0.1	0.28	ND<0.1	0.27	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.5
SG-2	5	3	1/3/06	ND<5	ND<0.1	0.24	ND<0.1	0.25	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.5
SG-3	5	3	1/3/06	ND<5	ND<0.1	0.20	ND<0.1	0.19	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.5
SG-4	4.5	1	1/3/06	19	ND<0.1	0.23	ND<0.1	0.17	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.5
		3	1/3/06	11	ND<0.1	0.21	ND<0.1	0.21	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.5
		7	1/3/06	9.4	ND<0.1	0.18	ND<0.1	0.18	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.5
SG-5	5	3	1/3/06	ND<5	ND<0.1	0.22	ND<0.1	0.22	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.5
SG-5 DUP	5	3	1/3/06	ND<5	ND<0.1	0.17	ND<0.1	0.19	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.5
SG-6	5	3	1/3/06	ND<5	ND<0.1	0.18	ND<0.1	0.19	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.5
SG-7	5	3	1/3/06	ND<5	ND<0.1	0.23	ND<0.1	0.17	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.5
SG-8	5	3	1/3/06	ND<5	ND<0.1	0.14	ND<0.1	0.16	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.5
SG-9	5	3	1/3/06	ND<5	ND<0.1	0.18	ND<0.1	0.19	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.5

(a) Total petroluem 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), and tert-butyl alcohol (TBA) analyzed by EPA Method 8260; reported in micrograms per liter (µg/l) of vapor.

(b) Not detected at detection limit listed.

TABLE 5

SOIL ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Boring	Depth (feet)	Sample Date	TPHg[a] (mg/kg)	Benzene[b] (µg/kg)	Toluene[b] (µg/kg)	Ethylbenzene[b] (µg/kg)	Xylenes[b] (µg/kg)	MTBE[b] (µg/kg)	DIPE[b] (µg/kg)	ETBE[b] (µg/kg)	TAME[b] (µg/kg)	TBA[b] (µg/kg)	Methanol[b] (µg/kg)	Ethanol[b] (µg/kg)	1,2-DCA[b] (µg/kg)	EDB[b] (µg/kg)
DB-1	10	01/27/06	ND<1[c]	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
	20	01/27/06	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
	27	01/27/06	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
	30	01/27/06	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
	34	01/27/06	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	7.7	ND<200	ND<10	ND<5	ND<5
	37	01/27/06	ND<1	ND<5	ND<5	ND<5	ND<5	17	ND<5	ND<5	ND<5	23	ND<200	ND<10	ND<5	ND<5
	40	01/27/06	18	ND<5	ND<5	7.3	ND<5	ND<5	ND<5	ND<5	ND<5	ND<15	ND<250	ND<25	ND<5	ND<5
	43	01/27/06	100	27	ND<5	710	1,000	80	ND<5	ND<5	ND<5	50	ND<500	ND<50	ND<5	ND<5
	45	01/27/06	81	180	67	2,500	5,800	46	ND<5	ND<5	ND<5	30	ND<500	ND<100	ND<5	ND<5
	48	01/27/06	140	3,100	170	4,800	22,000	52	ND<25	ND<25	ND<25	ND<150	ND<2,500	ND<500	ND<25	ND<25
	50	01/27/06	12	360	11	240	230	50	ND<5	ND<5	ND<5	ND<15	ND<250	ND<25	ND<5	ND<5
	52	01/27/06	68	56	ND<25	440	560	110	ND<25	ND<25	ND<25	ND<150	ND<2,500	ND<250	ND<25	ND<25
	57	01/27/06	9.6	9.9	ND<5	ND<25	34	21	ND<5	ND<5	ND<5	ND<25	ND<500	ND<50	ND<5	ND<5
DB-2	10	01/26/06	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
	20	01/26/06	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
	30	01/26/06	31	ND<5	ND<5	100	190	370	ND<5	ND<5	ND<5	200	ND<200	ND<10	ND<5	ND<5
	32	01/26/06	ND<1	ND<5	ND<5	ND<5	ND<5	240	ND<5	ND<5	ND<5	590	ND<200	ND<10	ND<5	ND<5
	36	01/26/06	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
	40	01/26/06	2.6	7.4	ND<5	44	14	740	ND<5	ND<5	5.2	110 J[d]	ND<200	ND<50	ND<5	ND<5
	43	01/26/06	20	130	55	400	410	1,700	ND<5	ND<5	29	600 J	ND<800	ND<25	ND<5	ND<5
	45	01/26/06	9.9	12	7.2	59	210	1,200	ND<5	ND<5	10	530	ND<500	ND<80	ND<5	ND<5
DB-3	10	01/26/06	ND<1	ND<5	ND<5	ND<5	ND<5	5.6	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
	20	01/26/06	ND<1	ND<5	ND<5	ND<5	ND<5	18	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
	30	01/26/06	23	8.2	ND<5	150	770	1,500	ND<5	ND<5	24	1,500	ND<2,500	ND<25	ND<5	ND<5
	33	01/26/06	13	15	28	100	600	2,900	ND<5	ND<5	19	480 J	ND<2,000	ND<25	ND<5	ND<5
	37	01/26/06	56	26	6.2	63	69	1,400	ND<5	ND<5	17	580	ND<300	ND<30	ND<5	ND<5
	40	01/26/06	19	ND<5	ND<5	41	12	620	ND<5	ND<5	ND<5	92 J	ND<250	ND<25	ND<5	ND<5
	42	01/26/06	3.4	ND<5	ND<5	130	410	1,100	ND<5	ND<5	11	1,700	ND<1,000	ND<50	ND<5	ND<5
	45	01/26/06	ND<1	ND<5	ND<5	12	11	160	ND<5	ND<5	ND<5	100	ND<200	ND<20	ND<5	ND<5
	50	01/26/06	ND<1	ND<5	ND<5	ND<5	ND<5	88	ND<5	ND<5	ND<5	15 J	ND<200	ND<10	ND<5	ND<5
	55	01/26/06	12	9.4	ND<5	60	15	32	ND<5	ND<5	ND<5	ND<15	ND<250	ND<25	ND<5	ND<5
	58	01/26/06	ND<1	ND<5	ND<5	ND<5	ND<5	14	ND<5	ND<5	ND<5	5.5	ND<200	ND<10	ND<5	ND<5
	63	01/26/06	38	11	5.4	88	150	1,100	ND<5	ND<5	6.4	300 J	ND<500	ND<50	ND<5	ND<5
	66	01/26/06	120	32	32	660	910	370	ND<25	ND<25	ND<25	ND<150	ND<2,500	ND<250	ND<25	ND<25

TABLE 5

SOIL ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Boring	Depth (feet)	Sample Date	TPHg[a] (mg/kg)	Benzene[b] (µg/kg)	Toluene[b] (µg/kg)	Ethylbenzene[b] (µg/kg)	Xylenes[b] (µg/kg)	MTBE[b] (µg/kg)	DIPE[b] (µg/kg)	ETBE[b] (µg/kg)	TAME[b] (µg/kg)	TBA[b] (µg/kg)	Methanol[b] (µg/kg)	Ethanol[b] (µg/kg)	1,2-DCA[b] (µg/kg)	EDB[b] (µg/kg)
DB-4	10	01/25/06	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
	20	01/25/06	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
	30	01/25/06	5.2	13	ND<5	44	150	820	ND<5	ND<5	28	870 J	ND<250	ND<25	ND<5	ND<5
	32	01/25/06	ND<1	ND<5	ND<5	ND<5	6.5	150	ND<5	ND<5	ND<5	24 J	ND<200	ND<10	ND<5	ND<5
	37	01/25/06	ND<1	ND<5	ND<5	ND<5	20	980	ND<5	ND<5	17	550 J	ND<250	ND<25	ND<5	ND<5
	40	01/25/06	ND<1	ND<5	ND<5	ND<5	ND<5	49	ND<5	ND<5	ND<5	16	ND<200	ND<10	ND<5	ND<5
	42	01/25/06	20	ND<5	6.3	44	240	1,000	ND<5	ND<5	15	440 J	ND<800	ND<10	ND<5	ND<5
	50	01/25/06	ND<1	ND<5	ND<5	ND<5	ND<5	28	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
	55	01/25/06	4.2	ND<5	ND<5	ND<5	ND<5	29	ND<5	ND<5	ND<5	14	ND<200	13	ND<5	ND<5
	60	01/25/06	4.1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
DB-5	90	02/03/06	1.5	17	18	59	220	ND<5	ND<5	ND<5	ND<5	ND<5	ND<200	ND<10	ND<5	ND<5
B-4	20	6/1/93	ND<1	ND<5	ND<5	ND<5	20	-[e]	-	-	-	-	-	-	-	-
	25	6/1/93	16	ND<50	270	180	1,700	-	-	-	-	-	-	-	-	-
	30	6/1/93	ND<1	170	44	13	57	-	-	-	-	-	-	-	-	-
	35	6/1/93	55	73	110	300	650	-	-	-	-	-	-	-	-	-
VW-1	30	5/27/93	280	ND<500	4,300	2,600	17,000	-	-	-	-	-	-	-	-	-
	35	5/27/93	11	200	450	110	560	-	-	-	-	-	-	-	-	-
	40	5/27/93	340	1,800	16,000	5,300	32,000	-	-	-	-	-	-	-	-	-
VW-2	20	5/28/93	200	ND<500	4,000	4,000	25,000	-	-	-	-	-	-	-	-	-
	30	5/28/93	3.5	18	150	44	230	-	-	-	-	-	-	-	-	-
	35	5/28/93	ND<1	21	24	8.6	56	-	-	-	-	-	-	-	-	-
VW-3	20	6/1/93	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
	25	6/1/93	ND<1	17	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
	30	6/1/93	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
	35	6/1/93	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
MW-1	25	5/27/93	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
	30	5/27/93	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
	35	5/27/93	ND<1	29	15	5.1	31	-	-	-	-	-	-	-	-	-
MW-2	20	5/27/93	6.4	ND<5	ND<5	ND<5	37	-	-	-	-	-	-	-	-	-
	25	5/27/93	1.5	57	99	26	220	-	-	-	-	-	-	-	-	-
	30	5/27/93	ND<1	40	65	7.0	51	-	-	-	-	-	-	-	-	-
	35	5/27/93	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
MW-3	25	5/28/93	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
	30	5/28/93	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
	35	5/28/93	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
MW-4	30	3/30/94	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
	35	3/30/94	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-

TABLE 5

SOIL ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Boring	Depth (feet)	Sample Date	TPHg[a] (mg/kg)	Benzene[b] (µg/kg)	Toluene[b] (µg/kg)	Ethylbenzene[b] (µg/kg)	Xylenes[b] (µg/kg)	MTBE[b] (µg/kg)	DIPE[b] (µg/kg)	ETBE[b] (µg/kg)	TAME[b] (µg/kg)	TBA[b] (µg/kg)	Methanol[b] (µg/kg)	Ethanol[b] (µg/kg)	1,2-DCA[b] (µg/kg)	EDB[b] (µg/kg)
MW-5	30	3/29/94	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
	35	3/29/94	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
MW-6	30	3/29/94	42	650	1,700	720	4,600	-	-	-	-	-	-	-	-	-
	35	3/29/94	3.7	61	160	94	550	-	-	-	-	-	-	-	-	-
MW-7	20	3/30/94	ND<1	ND<5	ND<5	ND<5	ND<5	-	-	-	-	-	-	-	-	-
	35	3/30/94	4.9	16	13	25	48	-	-	-	-	-	-	-	-	-
	40	3/30/94	8.8	64	29	65	390	-	-	-	-	-	-	-	-	-
MW-8	6	9/2/03	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	-	-	-	-
	30	9/2/03	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	-	-	-	-
MW-9	10	9/2/03	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	-	-	-	-
	30	9/2/03	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	-	-	-	-
MW-10	5	9/2/03	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	-	-	-	-
	30	9/2/03	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	-	-	-	-
TP-1	10	6/23/05	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	-	-	ND<5	ND<5
	20	6/23/05	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	-	-	ND<5	ND<5
	30	6/23/05	ND<1	ND<5	ND<5	ND<5	ND<5	12	ND<5	ND<5	ND<5	7.3	-	-	ND<5	ND<5
	40	6/23/05	5,800	35,000	210,000	110,000	480,000	ND<250	ND<250	ND<250	ND<250	ND<7,000	-	-	ND<250	ND<250
TP-2	10	6/23/05	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	-	-	ND<5	ND<5
	20	6/23/05	ND<1	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	ND<5	-	-	ND<5	ND<5
	30	6/23/05	15	54	23	220	420	2,200	ND<5	ND<5	39	1,000[e]	-	-	ND<5	ND<5
	35	6/23/05	9.8	200	ND<25	250	320	4,200	ND<25	ND<25	ND<25	440[e]	-	-	ND<25	ND<25
ESL			100	44	2,900	3,300	2,300	23	NE	NE	NE	73	NE	45,000	4.5	0.33

(a) Total petroleum hydrocarbons as gasoline (TPHg) analyzed by EPA Method 8260; reported in milligrams per kilogram (mg/kg).

(b) 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), 1,2-dibromoethane (EDB), methanol, and ethanol analyzed by EPA Method 8260; reported in micrograms per kilogram (µg/kg).

(c) ND - Not detected at detection limit listed.

(d) TBA results may be biased slightly high. A fraction of MTBE (typically less than 5 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 3:1.

(e) "-" Not analyzed.

TABLE 6

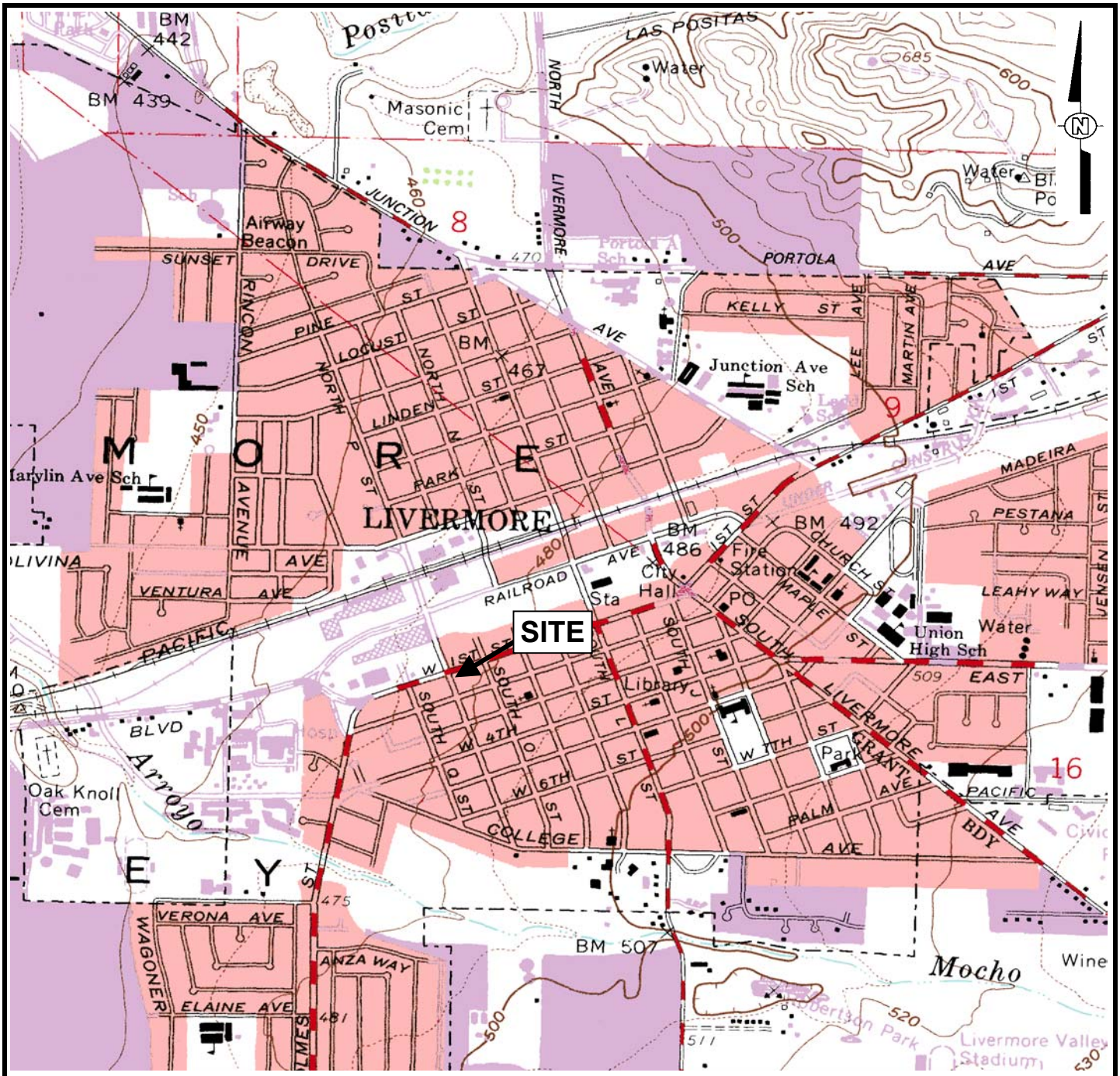
GRAB GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Depth (feet)	Sample Date	TPHg[(a)] (µg/l)	Benzene[(a)] (µg/l)	Toluene[(a)] (µg/l)	Ethylbenzene[(a)] (µg/l)	Xylenes[(a)] (µg/l)	MTBE[(a)] (µg/l)	DIPE[(a)] (µg/l)	ETBE[(a)] (µg/l)	TAME[(a)] (µg/l)	TBA[(a)] (µg/l)	Methanol[(a)] (µg/l)	Ethanol[(a)] (µg/l)	1,2-DCA[(a)] (µg/l)	EDB[(a)] (µg/l)
DB-1	50	1/27/2006	42,000	1,400	120	3,800	4,100	3,500	ND<10[(b)]	ND<10	48	120 J[(c)]	ND<2,000	ND<100	ND<10	ND<10
	60	1/27/2006	26,000	1,000	170	1,100	860	280	ND<5	ND<5	15	49	ND<500	ND<50	ND<5	ND<5
DB-2	45	1/26/2006	47,000	1,200	420	1,800	5,200	38,000	ND<10	ND<10	300	2,700	ND<30,000	ND<100	ND<10	ND<10
	55	1/26/2006	120,000	5,200	1,700	4,500	15,000	11,000	ND<10	ND<10	69	830	ND<8,000	ND<100	ND<10	ND<10
DB-3	50	1/26/2006	24,000	400	54	860	980	24,000	ND<10	ND<10	180	2,600	ND<25,000	ND<100	ND<10	ND<10
DB-4	50	1/25/2006	550	2.0	0.64	5.1	18	510	ND<0.5	ND<0.5	4.4	80	ND<50	10	ND<0.5	ND<0.5
DB-5	40	2/3/2006	1,800	54	4.6	39	80	150	ND<0.5	ND<0.5	1.6	130	ND<50	ND<5	ND<0.5	ND<0.5
	53	2/3/2006	58,000	1,100	150	1,300	2,100	1,500	ND<10	ND<10	15	710	ND<1,000	ND<100	ND<10	ND<10
DB-6	40	2/3/2006	2,000	0.52	0.53	0.66	0.66	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	53	2/3/2006	1,100	13	2.7	8.0	4.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5

(a) 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).

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

(c) 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.



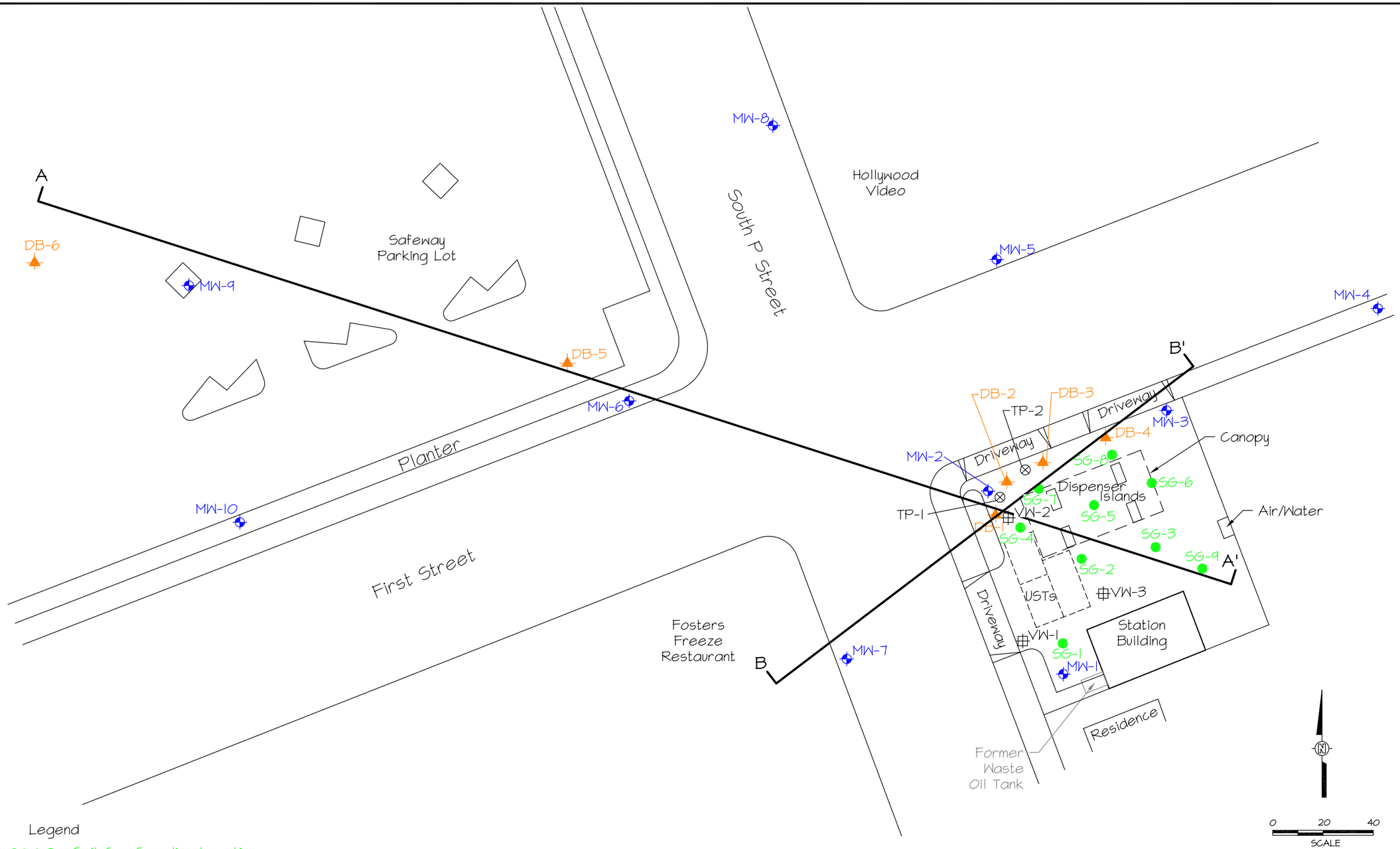
SCALE

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

- SG-1 Soil Gas Sampling Location
- DB-1 Soil Boring and Grab Groundwater Sampling Location
- MW-7 Groundwater Monitoring Well
- VW-2 Vapor Extraction Well
- TP-2 Temporary Monitoring Well
- A A' Geologic Cross Section

REVISION	NO.	BY	DATE	DESCRIPTION
1	0	MY	9/8/05	Site Investigation Work Plan
	1	MY	4/28/06	Investigation Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

SITE PLAN

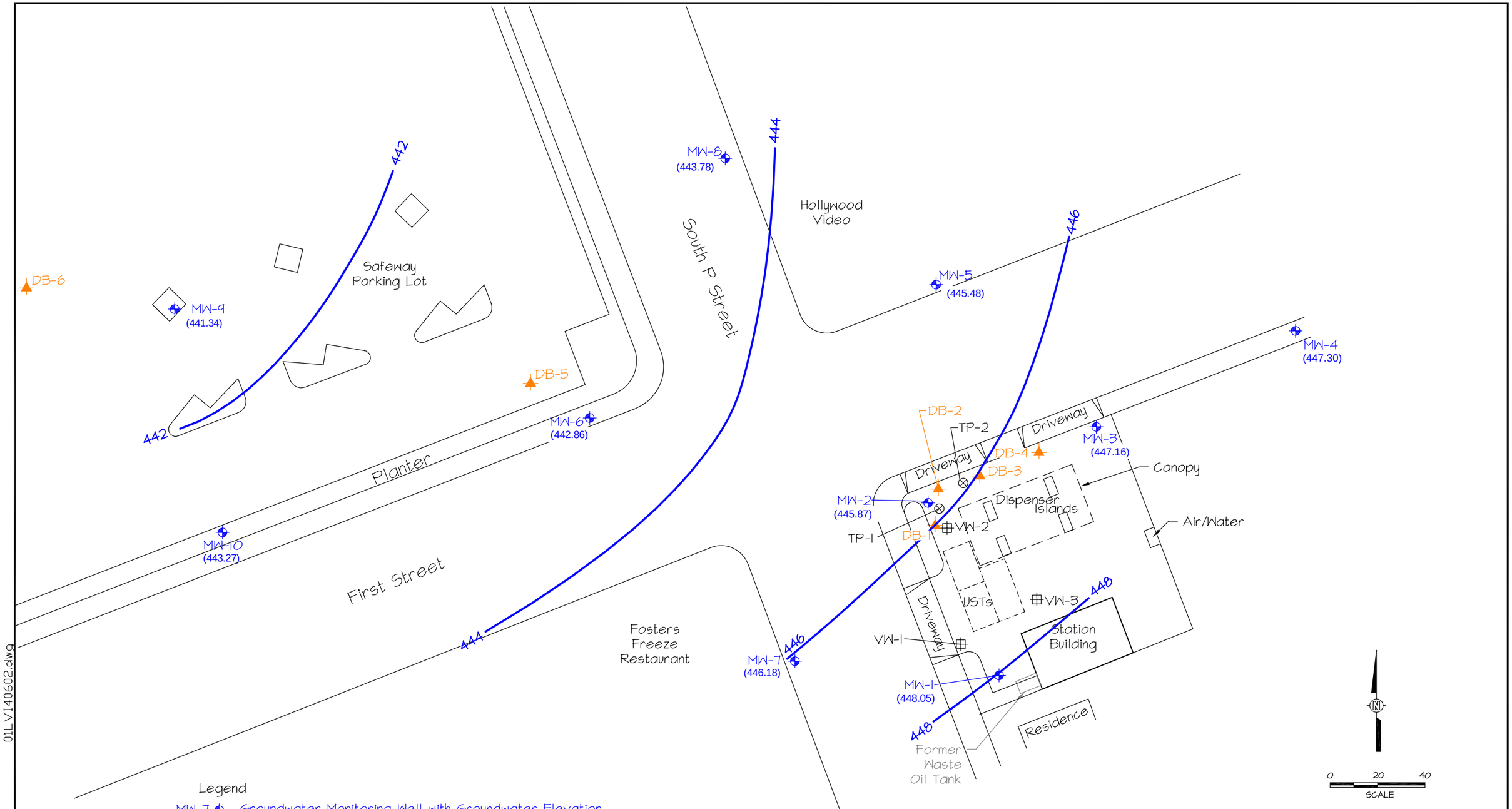
PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
01LV	MY	MP	JPG

FILE NO. 01LVB30401.DWG

FIGURE 2

01LVB30401.dwg

5/5/2006 1:15 PM



REVISION	NO.	BY	DATE	DESCRIPTION
2	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

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

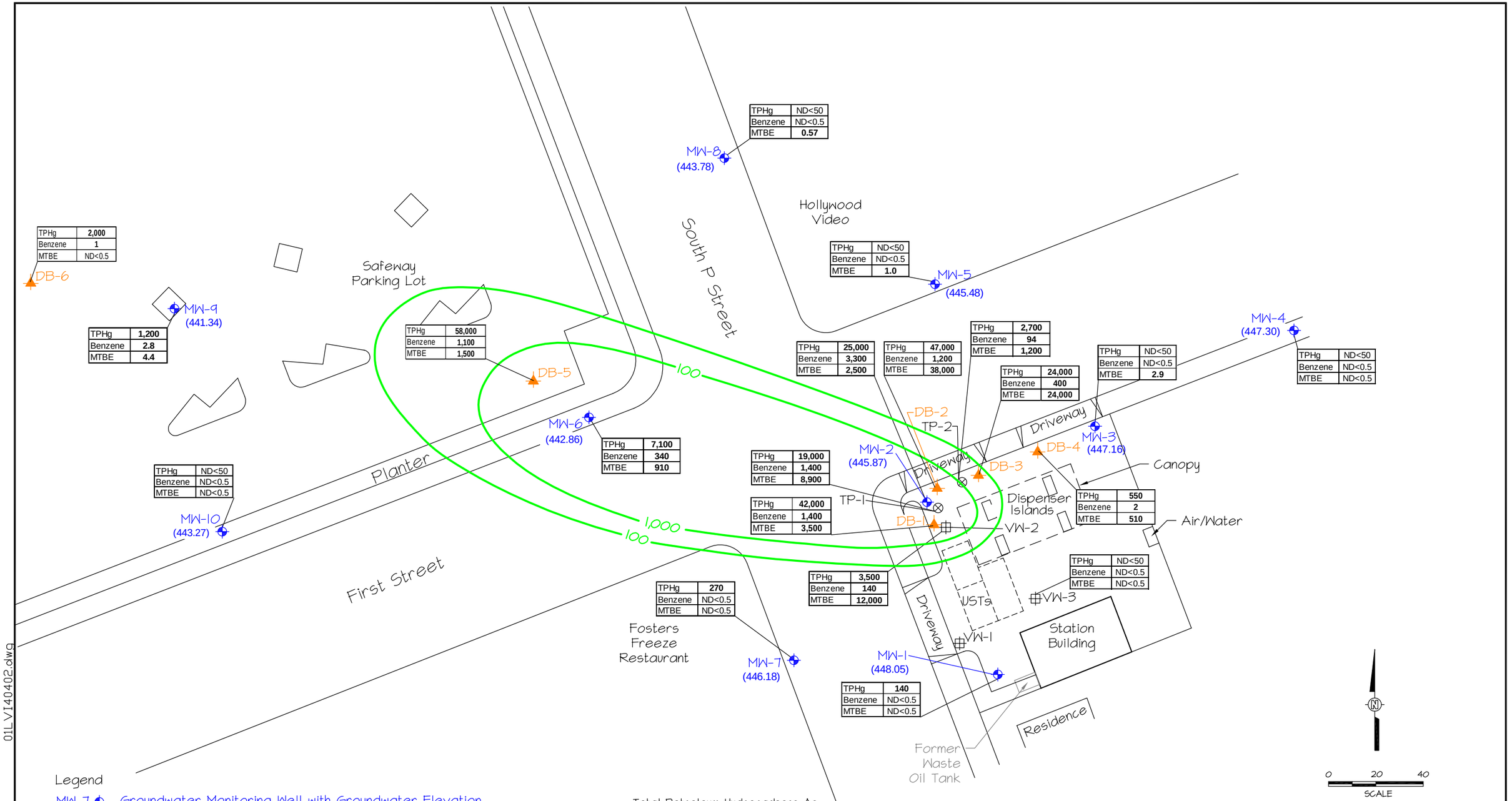
GROUNDWATER ELEVATION CONTOURS

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

FILE NO. 01LV140602.DWG

FIGURE 3

6/8/2006 2:30 PM 01LV140602.dwg



Legend

MW-7 (446.18) — Groundwater Monitoring Well with Groundwater Elevation (Feet, MSL) and 9 February 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

TPHg	140
Benzene	ND<0.5
MTBE	ND<0.5

- TPHg 140 — Total Petroleum Hydrocarbons As Gasoline (THPg) (µg/l)
- Benzene ND<0.5 — Benzene (µg/l)
- MTBE ND<0.5 — Methyl Tert-Butyl Ether (MTBE) (µg/l)

100 — Benzene Concentration Contour (µg/l)

REVISION	NO.	BY	DATE	DESCRIPTION
2	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

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

BENZENE CONCENTRATION CONTOURS

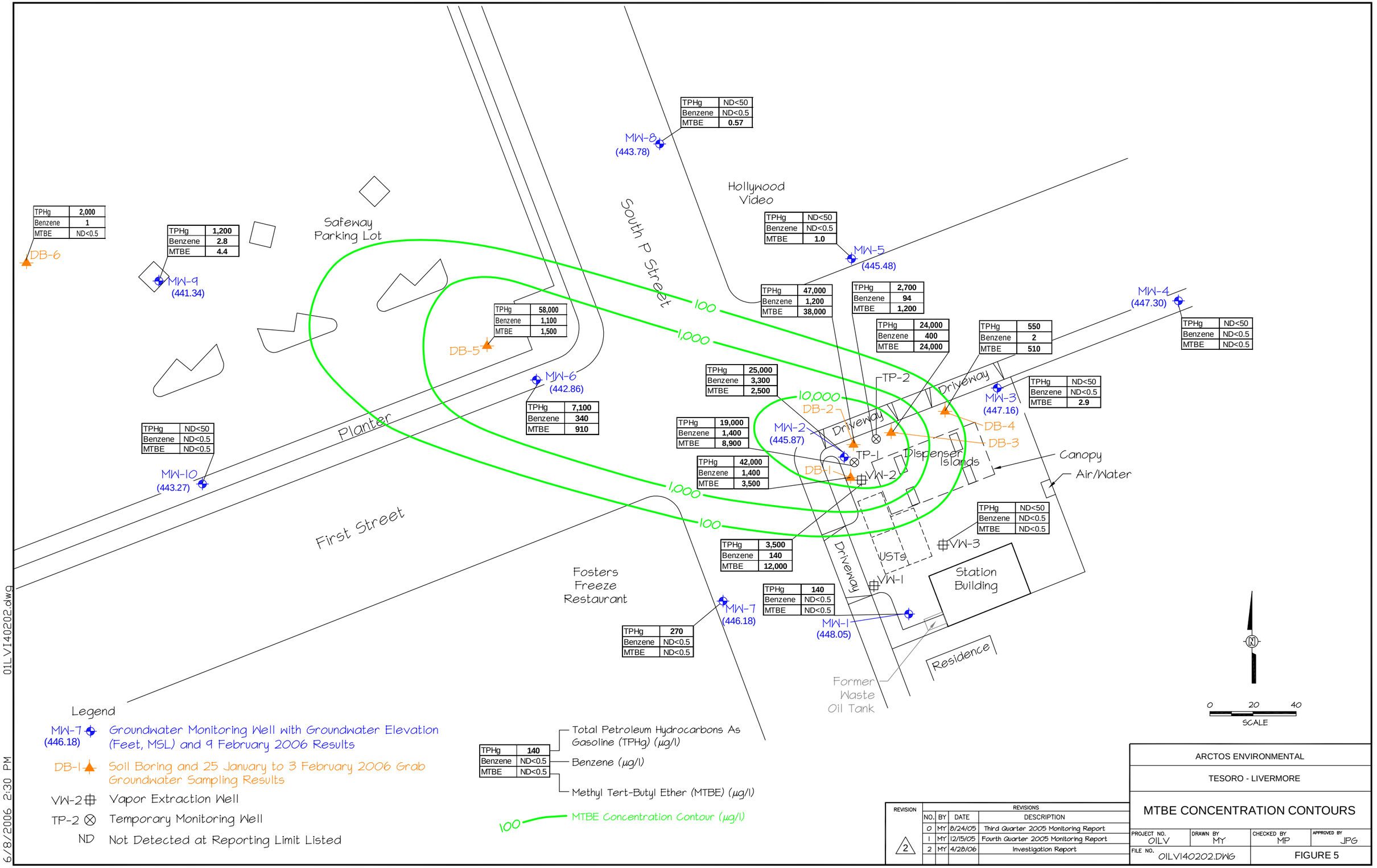
PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
01LV	MY	MP	JPG

FILE NO. 01LV140402.DWG

FIGURE 4

01LV140402.dwg

6/8/2006 2:25 PM



01LV140202.dwg 6/8/2006 2:30 PM

REVISION	NO.	BY	DATE	DESCRIPTION
2	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

ARCTOS ENVIRONMENTAL

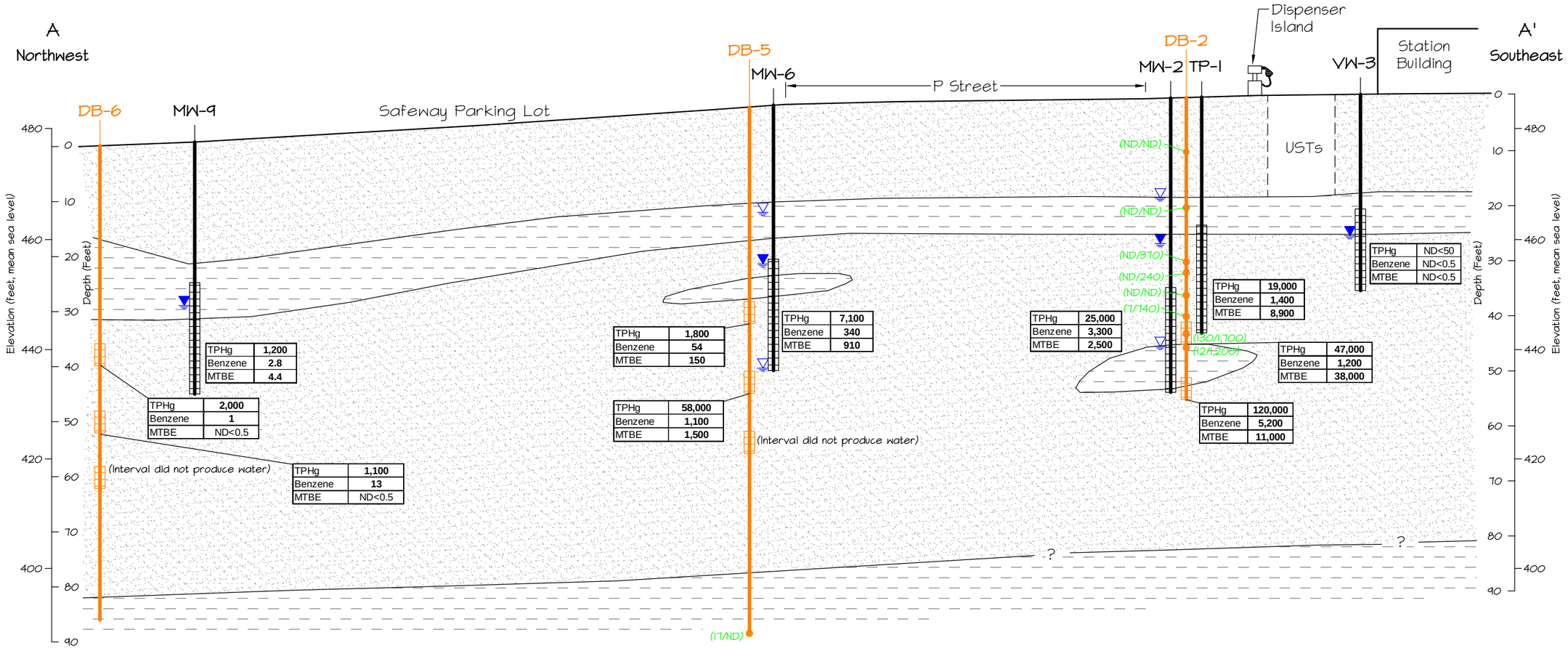
TESORO - LIVERMORE

MTBE CONCENTRATION CONTOURS

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

FILE NO. 01LV140202.DWG

FIGURE 5



Legend

Soil Classification

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

MW-9 — Well identification

▼ Groundwater elevation on 9 February 2006

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

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

Screened interval

DB-5
(1/ND) — Soil sample location with Benzene/MTBE results in micrograms per kilogram (µg/kg)

Grab groundwater sample location

Groundwater Results

TPHg	1,200
Benzene	2.8
MTBE	4.4

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

0 10' 40'
Horizontal Scale

0 10' 20'
Vertical Scale

REVISION	NO.	BY	DATE	DESCRIPTION
1	0	MY	9/8/05	Site Investigation Work Plan
	1	MY	2/13/06	Investigation Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

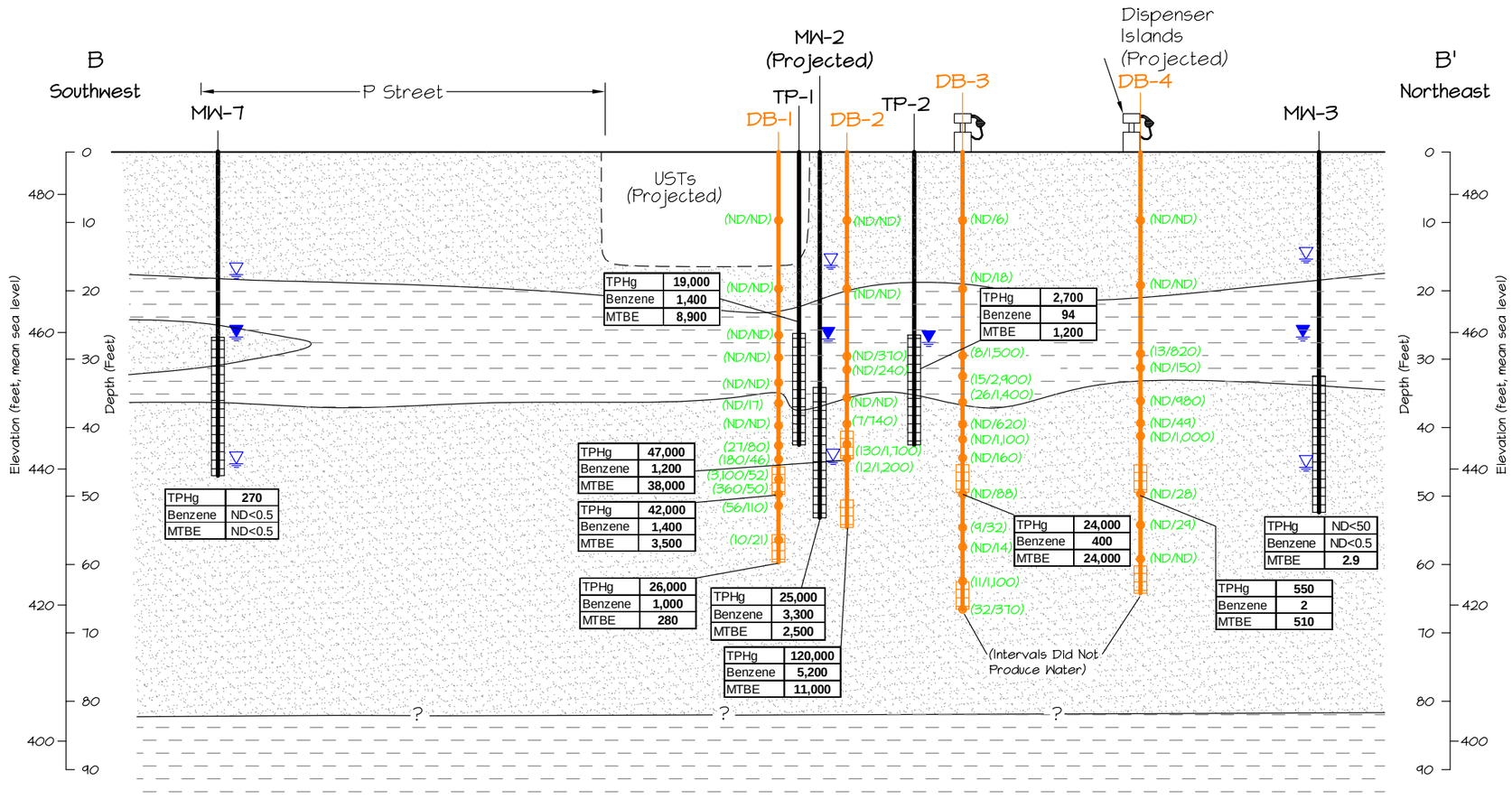
GEOLOGIC CROSS SECTION A-A'

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

FILE NO. 01LVB30301.DWG

FIGURE 6

6/8/2006 3:30 PM 01LVB30301.dwg



Legend

Soil Classification

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

MW-3 — Well identification

Groundwater elevation on 9 February 2006

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

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

Screened interval

DB-1

(27/80) — Soil sample location with Benzene/MTBE results in micrograms per kilogram (µg/kg)

Grab groundwater sample location

Groundwater Results

TPHg	ND<50
Benzene	ND<0.5
MTBE	2.9

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

0 10' 20'
Horizontal Scale

0 10' 20'
Vertical Scale

REVISION	NO.	BY	DATE	DESCRIPTION
0	0	MY	2/13/06	Investigation Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

GEOLOGIC CROSS SECTION B-B'

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

FILE NO. 01LVB30700.DWG

FIGURE 7

01LVB30700.dwg 6/8/2006 3:45 PM

APPENDIX A

FIELD DATA SHEETS

WELL GAUGING DATA

Project # 060209-PC1 Date 2/9/06 Client Arcos

Site 1619 1st St., Livermore

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-1	4	Parked over until 1108				26.24	54.06	TOC	
MW-2	4					27.11	53.92		
MW-3	4					26.21	52.78		
MW-4	2					26.34	46.85		
MW-5	2					27.19	46.25		
MW-6	2					29.07	47.60		
MW-7	2					26.15	46.71		
MW-8	2					27.40	44.48		
MW-9	2					29.44	44.80		
MW-10	2					28.36	45.06		
VW-2	2					27.21	36.72		No Purge ~~G.W.~~
VW-3	2					26.60	36.20		No Purge ~~G.W.~~
TP-1	2					28.02	43.21		
TP-2	2					27.27	42.40		

W. .L MONITORING DATA SHE..T

Project #: 060209-PC	Client: Arctos
Sampler: PC	Date: 2/9/06
Well I.D.: MW-1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 54.06	Depth to Water (DTW): 26.24
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 31.80	

Purge Method: Bailer; Disposable Bailer; Positive Air Displacement; (X) Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: Bailer; (X) Disposable Bailer; Extraction Port; Dedicated Tubing; Other: _____

18.1 (Gals.) X	3	= 54.3 Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1155	19.5	7.42	909	444	18	
1159	20.1	7.26	1080	205	36	
1204	20.4	7.30	987	293	55	

Did well dewater? Yes (No) Gallons actually evacuated: 55

Sampling Date: 2/9/06 Sampling Time: 1215 Depth to Water: 31.78

Sample I.D.: MW-1 Laboratory: (Kiff) CalScience Other_____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: see COC

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 060209-PC1	Client: Arcos
Sampler: PC	Date: 2/9/06
Well I.D.: MW-2	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 53.92	Depth to Water (DTW): 27.11
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 32.47	

Purge Method: Bailer; Disposable Bailer; Positive Air Displacement; (Electric Submersible); Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: Bailer; (Disposable Bailer); Extraction Port; Dedicated Tubing; Other: _____

17.4 (Gals.) X	3	= 53.2 Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1410	21.5	7.27	1078	223	17.5	gas odor
1415	20.5	7.05	1077	124	35	
	well dewatered @ 36 gal.					
1448	19.5	7.07	1183	159	-	

Did well dewater? (Yes) No Gallons actually evacuated: 36

Sampling Date: 2/9/06 Sampling Time: 1448 Depth to Water: 30.45

Sample I.D.: MW-2 Laboratory: (Kiff) CalScience Other_____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: see COC *

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.89	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	~ 82	mV

WELL MONITORING DATA SHEET

Project #: 060209-PC1	Client: Arctos
Sampler: PC	Date: 2/9/06
Well I.D.: MW-3	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 52.78	Depth to Water (DTW): 26.21
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 31.52	

Purge Method: Bailer; Disposable Bailer; Positive Air Displacement; (Electric Submersible); Waterra; Peristaltic; Extraction Pump; Other ____

Sampling Method: Bailer; (Disposable Bailer); Extraction Port; Dedicated Tubing; Other: ____

17.3 (Gals.) X 3 = 51.9 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or (uS))	Turbidity (NTUs)	Gals. Removed	Observations
1129	18.6	7.61	1085	21000	17.5	cloudy
1134	19.5	7.34	1050	161	35	+
1140	19.6	7.31	1052	46	52	clear

Did well dewater? Yes (No) Gallons actually evacuated: 52

Sampling Date: 2/9/06 Sampling Time: 1148 Depth to Water: 30.61

Sample I.D.: MW-3 Laboratory: (KAR) CalScience Other ____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: see COC

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.90	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	35	mV

WELL MONITORING DATA SHEET

Project #: 060209-PC1	Client: Arcadis
Sampler: PC	Date: 2/9/06
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 46.85	Depth to Water (DTW): 26.34
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 26.54	

Purge Method: Bailer / (Disposable Bailer) / (Positive Air Displacement) / (Electric Submersible) / Waterra Peristaltic / Extraction Pump / Other_____

Sampling Method: Bailer / (Disposable Bailer) / Extraction Port / Dedicated Tubing / Other: _____

3.3 (Gals.) X 3 = 3.3 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1012	19.6	7.58	1077	309	3.3	brown
1020	20.1	7.38	1093	582	6.6	↓
1028	19.4	7.42	1137	71000	9.9	↓

Did well dewater? Yes (No) Gallons actually evacuated: 10

Sampling Date: 2/9/06 Sampling Time: 1035 Depth to Water: 25.25

Sample I.D.: MW-4 Laboratory: (Kiff) CalScience Other_____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: see COC *

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	1.5 PR mg/L	Post-purge:	0.96	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	39	mV

WELL MONITORING DATA SHEET

Project #: 060209-PC1	Client: Arcadis
Sampler: PC	Date: 2/9/06
Well I.D.: MW-5	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 46.25	Depth to Water (DTW): 27.19
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 31.00	

Purge Method: Bailer; Disposable Bailer; (Positive Air Displacement); Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other____

Sampling Method: Bailer; (Disposable Bailer); Extraction Port; Dedicated Tubing; Other: ____

3.0 (Gals.) X	3	=	9 Gals.
1 Case Volume	Specified Volumes		Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1258	19.7	7.29	1208	101	3	cloudy
1304	19.8	7.32	1199	253	6	↓
1310	20.0	7.35	1194	307	9	

Did well dewater? Yes (No) Gallons actually evacuated: 9

Sampling Date: 2/9/06 Sampling Time: 1316 Depth to Water: 29.30

Sample I.D.: MW-5 Laboratory: (Kiff) CalScience Other____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: see COC

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 060209-PC1	Client: Arctos
Sampler: PC	Date: 2/9/06
Well I.D.: MW-6	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 47.60	Depth to Water (DTW): 29.07
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 32.78	

Purge Method: Bailer, Disposable Bailer (X), Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other____

Sampling Method: Bailer, Disposable Bailer (X), Extraction Port, Dedicated Tubing, Other: ____

3.0 (Gals.) X	3	=	9 Gals.
1 Case Volume	Specified Volumes		Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1230	21.0	7.05	1171	168	3	
1236	20.1	6.99	1190	99	6	
1242	20.1	6.97	1182	101	9	

Did well dewater? Yes (No) Gallons actually evacuated: 9

Sampling Date: 2/9/06 Sampling Time: 1246 Depth to Water: 29.91

Sample I.D.: MW-6 Laboratory: (Kiff) CalScience Other____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: see COC *

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.01	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	-53	mV

WELL MONITORING DATA SHEET

Project #: 060209-PC1	Client: Arctos
Sampler: PC	Date: 2/9/06
Well I.D.: MW-7	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 46.71	Depth to Water (DTW): 26.15
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 30.26	

Purge Method: Bailer; Disposable Bailer; (X) Positive Air Displacement; Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other____

Sampling Method: Bailer; (X) Disposable Bailer; Extraction Port; Dedicated Tubing; Other: ____

3.3 (Gals.) X	3	=	9.9 Gals.
1 Case Volume	Specified Volumes		Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
928	18.8	7.51	1049	164	3.3	
935	19.4	7.50	1046	91	6.6	
942	19.0	7.59	1054	61	9.9	

Did well dewater? Yes (No) Gallons actually evacuated: 9.9

Sampling Date: 2/9/06 Sampling Time: 950 Depth to Water: 28.70

Sample I.D.: MW-7 Laboratory: (Kiff) CalScience Other____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #:	Client:
Sampler:	Date:
Well I.D.:	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 44.48	Depth to Water (DTW): 27.40
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 30.82	

Purge Method: Bailer; Disposable Bailer; (Positive Air Displacement); Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: Bailer; (Disposable Bailer); Extraction Port; Dedicated Tubing; Other: _____

2.7 (Gals.) X 3 = 8.1 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
850	18.4	6.43	1017	410	2.7	
858	18.6	7.27	1056	320	5.4	
904	19.3	7.41	1052	277	8.1	

Did well dewater? Yes (No) Gallons actually evacuated: 8.1

Sampling Date: 2/9/06 Sampling Time: 910 Depth to Water: 29.65

Sample I.D.: MW-8 Laboratory: (Kiff) CalScience Other_____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 060209-SC1	Client: Arcos
Sampler: PC	Date: 2/9/06
Well I.D.: MW-9	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 44.80	Depth to Water (DTW): 29.44
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 32.51	

Purge Method: Bailer; Disposable Bailer; (Positive Air Displacement); Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other____

Sampling Method: Bailer; (Disposable Bailer); Extraction Port; Dedicated Tubing; Other: ____

2.5 (Gals.) X 3 = 7.5 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1330	21.3	7.42	1208	>1000	2.5	grey, silty
1336	21.9	7.28	1181	>1000	5	↓ ↓
1342	22.2	7.32	1159	>1000	7.5	↓ ↓

Did well dewater? Yes (No) Gallons actually evacuated: 7.5

Sampling Date: 2/9/06 Sampling Time: 1352 Depth to Water: 31.70

Sample I.D.: MW-9 Laboratory: (Kiff) CalScience Other____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: see COC *

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.00	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	~51	mV

WELL MONITORING DATA SHEET

Project #: 060209-PC1	Client: Arcfos
Sampler: PC	Date: 2/9/06
Well I.D.: MW-10	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 45.06	Depth to Water (DTW): 28.36
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 31.70	

Purge Method: Bailer; Disposable Bailer; (Positive Air Displacement); Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other____

Sampling Method: Bailer; (Disposable Bailer); Extraction Port; Dedicated Tubing; Other: ____

2.7 (Gals.) X 3 = 8.1 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1056	18.9	7.84	1356	>1000	2.5	
1102	19.4	7.96	1350	638	5	
1110	19.3	8.09	1345	637	8.1	

Did well dewater? Yes (No) Gallons actually evacuated: 8.1

Sampling Date: 2/9/06 Sampling Time: 1115 Depth to Water: 31.48

Sample I.D.: MW-10 Laboratory: (Kiff) CalScience Other____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L	
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV	

WELL MONITORING DATA SHEET

Project #: 060209-PC1	Client: Arcos
Sampler: PC	Date: 2/9/06
Well I.D.: VW-2	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 36.72	Depth to Water (DTW): 27.21
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer, Disposable Bailer, Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

Sampling Method: Bailer, (Disposable Bailer), Extraction Port, Dedicated Tubing, Other: _____

No Purge

_____(Gals.) X _____ = _____ Gals.
1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1432	19.6	7.09	1245	35	-	

Did well dewater? Yes No Gallons actually evacuated: -

Sampling Date: 2/9/06 Sampling Time: 1432 Depth to Water:

Sample I.D.: VW-2 Laboratory: (Kiff) CalScience Other_____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: see COC

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 060209-PC1	Client: Arcadis
Sampler: PC	Date: 2/9/06
Well I.D.: VW-3	Well Diameter: ② 3 4 6 8 ____
Total Well Depth (TD): 36.20	Depth to Water (DTW): 26.60
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / Electric Submersible / Waterra / Peristaltic / Extraction Pump / Other_____ — No Purge

Sampling Method: Bailer / (Disposable Bailer) / Extraction Port / Dedicated Tubing / Other: _____

_____(Gals.) X _____ = _____ Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1215	19.6	7.06	1604	9	—	

Did well dewater? Yes No — Gallons actually evacuated:

Sampling Date: 2/9/06 — Sampling Time: 1215 — Depth to Water:

Sample I.D.: VW-3 — Laboratory: (Kiff) CalScience Other_____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: see COC

EB I.D. (if applicable): @ Time — Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 060209-PC1	Client: Arctos
Sampler: PC	Date: 2/9/06
Well I.D.: TP-1	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 43.21	Depth to Water (DTW): 28.07
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 31.06	

Purge Method: Bailer; Disposable Bailer; ^ Positive Air Displacement; Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: Bailer; ^ Disposable Bailer; Extraction Port; Dedicated Tubing; Other: _____

2.4 (Gals.) X	3	=	7.2 Gals.
1 Case Volume	Specified Volumes		Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1452	19.9	7.11	1250	>1000	2.5	grey, gas odor
1456	19.6	7.05	1260	>1000	5	↓ ↓
1500	19.5	7.03	1248	>1000	7.5	

Did well dewater? Yes (No) Gallons actually evacuated: 7.5

Sampling Date: 2/9/06 Sampling Time: 1505 Depth to Water: 28.77

Sample I.D.: TP-1 Laboratory: (Kiff) CalScience Other_____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: see COC

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 060209-MC	Client: Arcos
Sampler: MC	Date: 2/9/06
Well I.D.: TP-2	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 42.40	Depth to Water (DTW): 27.27
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 30.30	

Purge Method: Bailer; Disposable Bailer; ~~Positive~~ Air Displacement; Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: Bailer; ~~Disposable~~ Bailer; Extraction Port; Dedicated Tubing; Other: _____

1 Case Volume	Specified Volumes	Calculated Volume
2.4 (Gals.) X	3	= 7.2 Gals.

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1520	19.8	6.79	1229	>1000	2.4	grey, silty
1524	20.1	6.70	1232	>1000	4.8	↓
	well dewatered					
1528	19.5	6.82	1227	>1000	-	

Did well dewater? (Yes) No Gallons actually evacuated: 5

Sampling Date: 2/9/06 Sampling Time: 1528 Depth to Water: 30.29

Sample I.D.: TP-2 Laboratory: (Kiff) CalScience Other_____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: see COC

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELLHEAD INSPECTION CHECKLIST

Date 2/9/06 Client Arcos

Site Address 1619 1st St., Livermore

Job Number 060209-PC1 Technician D. Cornish

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Debris Removed From Wellbox	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
MW-1							✓	
MW-2							✓	
MW-3							✓	
MW-4							✓	
MW-5	✓		✓				✓	
MW-6							✓	
MW-7							✓	
MW-8							✓	
MW-9	✓	✓	✓					
MW-10	✓		✓					
VW-2	✓		✓					
VW-3							✓	
TP-1	✓							
TP-2	✓							

NOTES: MW-6 - 2/2 tabs str. MW-8 2/2 tabs broken; 2/2 bolts missing
MW-4 2/2 Bolts missing MW-1 2/2 bolts missing
MW-3 2/2 tabs str. MW-7 1/2 tabs stripped
VW-3 cap broken
~~VW-2~~ MW-2 2/2 tabs str.; 1/2 bolts missing
MW-7 2/2 bolts missing

SPH or Purge Water Drum Log

Client: Arcfos Environmental

Site Address: 1619 1st Street Livermore

STATUS OF DRUM(S) UPON ARRIVAL

Date	11-21-05	2/9/06				
Number of drum(s) empty:		2				
Number of drum(s) 1/4 full:						
Number of drum(s) 1/2 full:						
Number of drum(s) 3/4 full:	1	1				
Number of drum(s) full:	1	2				
Total drum(s) on site:	2 (used oil filters)					
Are the drum(s) properly labeled?		Y				
Drum ID & Contents:	Haz waste	(2) Soil cuttings (1) decon water				
If any drum(s) are partially or totally filled, what is the first use date:		1/27/06				

- If you add any SPH to an empty or partially filled drum, drum must have at least 20 gals. of Purgewater or DI Water.

-If drum contains SPH, the drum MUST be steel AND labeled with the appropriate label.

-All BTS drums MUST be labeled appropriately.

STATUS OF DRUM(S) UPON DEPARTURE

Date	11-22-05	2/9/06				
Number of drums empty:						
Number of drum(s) 1/4 full:						
Number of drum(s) 1/2 full:	1					
Number of drum(s) 3/4 full:	1	1				
Number of drum(s) full:	1	6				
Total drum(s) on site:	6	7				
Are the drum(s) properly labeled?	yes	Y				
Drum ID & Contents:	purge water	soil cuttings decon.				

LOCATION OF DRUM(S)

Describe location of drum(s): In compound to left of bldg.

FINAL STATUS

Number of new drum(s) left on site this event	4	2				
Date of inspection:	11-22-05	2/9/06				
Drum(s) labelled properly:	y	y				
Logged by BTS Field Tech:	DW	PC				
Office reviewed by:						

APPENDIX B

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORM

KIFF Analytical LLC

Report Number : 48339
Date : 2/16/2006

Mike Purchase
Arctos Environmental
1332 Peralta Avenue
Berkeley, CA

Subject : 14 Water Samples
Project Name : Tesoro - Livermore
Project Number : 060209-PC1

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 : 48339

Date : 2/16/2006

Project Name : **Tesoro - Livermore**

Project Number : **060209-PC1**

Sample : **MW-1** Matrix : Water Lab Number : 48339-01

Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Ethylbenzene	**0.67**	0.50	ug/L	EPA 8260B	2/14/2006
Total Xylenes	**1.0**	0.50	ug/L	EPA 8260B	2/14/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/14/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
TPH as Gasoline	**140**	50	ug/L	EPA 8260B	2/14/2006
Toluene - d8 (Surr)	98.9		% Recovery	EPA 8260B	2/14/2006
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	2/14/2006

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KIFF Analytical LLC

Report Number : 48339

Date : 2/16/2006

Project Name : **Tesoro - Livermore**

Project Number : **060209-PC1**

Sample : **MW-2** Matrix : Water Lab Number : 48339-02

Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**3300**	7.0	ug/L	EPA 8260B	2/13/2006
Toluene	**720**	7.0	ug/L	EPA 8260B	2/13/2006
Ethylbenzene	**1300**	7.0	ug/L	EPA 8260B	2/13/2006
Total Xylenes	**2200**	7.0	ug/L	EPA 8260B	2/13/2006
Methyl-t-butyl ether (MTBE)	**2500**	7.0	ug/L	EPA 8260B	2/13/2006
Diisopropyl ether (DIPE)	**< 7.0**	7.0	ug/L	EPA 8260B	2/13/2006
Ethyl-t-butyl ether (ETBE)	**< 7.0**	7.0	ug/L	EPA 8260B	2/13/2006
Tert-amyl methyl ether (TAME)	**27**	7.0	ug/L	EPA 8260B	2/13/2006
Tert-Butanol	**490**	40	ug/L	EPA 8260B	2/13/2006
Methanol	**< 700**	700	ug/L	EPA 8260B	2/13/2006
Ethanol	**< 70**	70	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	**< 7.0**	7.0	ug/L	EPA 8260B	2/13/2006
1,2-Dibromoethane	**< 7.0**	7.0	ug/L	EPA 8260B	2/13/2006
TPH as Gasoline	**25000**	700	ug/L	EPA 8260B	2/13/2006
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	2/13/2006
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	2/13/2006

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KIFF Analytical LLC

Report Number : 48339
Date : 2/16/2006

Project Name : **Tesoro - Livermore**
Project Number : **060209-PC1**

Sample : **MW-3** Matrix : Water Lab Number : 48339-03
Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Methyl-t-butyl ether (MTBE)	**2.9**	0.50	ug/L	EPA 8260B	2/13/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Toluene - d8 (Surr)	95.6		% Recovery	EPA 8260B	2/13/2006
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	2/13/2006

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Report Number : 48339
Date : 2/16/2006

Project Name : **Tesoro - Livermore**
Project Number : **060209-PC1**

Sample : **MW-4** Matrix : Water Lab Number : 48339-04
Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	2/13/2006
4-Bromofluorobenzene (Surr)	107		% Recovery	EPA 8260B	2/13/2006

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KIFF Analytical LLC

Report Number : 48339
Date : 2/16/2006

Project Name : **Tesoro - Livermore**
Project Number : **060209-PC1**

Sample : **MW-5** Matrix : Water Lab Number : 48339-05
Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Ethylbenzene	**0.63**	0.50	ug/L	EPA 8260B	2/13/2006
Total Xylenes	**1.0**	0.50	ug/L	EPA 8260B	2/13/2006
Methyl-t-butyl ether (MTBE)	**1.0**	0.50	ug/L	EPA 8260B	2/13/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Toluene - d8 (Surr)	96.7		% Recovery	EPA 8260B	2/13/2006
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	2/13/2006

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Report Number : 48339
Date : 2/16/2006

Project Name : **Tesoro - Livermore**
Project Number : **060209-PC1**

Sample : **MW-6** Matrix : Water Lab Number : 48339-06
Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**340**	2.0	ug/L	EPA 8260B	2/14/2006
Toluene	**11**	2.0	ug/L	EPA 8260B	2/14/2006
Ethylbenzene	**370**	2.0	ug/L	EPA 8260B	2/14/2006
Total Xylenes	**360**	2.0	ug/L	EPA 8260B	2/14/2006
Methyl-t-butyl ether (MTBE)	**910**	2.0	ug/L	EPA 8260B	2/14/2006
Diisopropyl ether (DIPE)	**< 2.0**	2.0	ug/L	EPA 8260B	2/14/2006
Ethyl-t-butyl ether (ETBE)	**< 2.0**	2.0	ug/L	EPA 8260B	2/14/2006
Tert-amyl methyl ether (TAME)	**9.3**	2.0	ug/L	EPA 8260B	2/14/2006
Tert-Butanol	**120**	9.0	ug/L	EPA 8260B	2/14/2006
Methanol	**< 200**	200	ug/L	EPA 8260B	2/14/2006
Ethanol	**< 20**	20	ug/L	EPA 8260B	2/14/2006
1,2-Dichloroethane	**< 2.0**	2.0	ug/L	EPA 8260B	2/14/2006
1,2-Dibromoethane	**< 2.0**	2.0	ug/L	EPA 8260B	2/14/2006
TPH as Gasoline	**7100**	200	ug/L	EPA 8260B	2/14/2006
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	2/14/2006
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	2/14/2006

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Report Number : 48339

Date : 2/16/2006

Project Name : **Tesoro - Livermore**

Project Number : **060209-PC1**

Sample : **MW-7** Matrix : Water Lab Number : 48339-07

Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Ethylbenzene	**1.2**	0.50	ug/L	EPA 8260B	2/14/2006
Total Xylenes	**0.98**	0.50	ug/L	EPA 8260B	2/14/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/14/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
TPH as Gasoline	**270**	50	ug/L	EPA 8260B	2/14/2006
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	2/14/2006
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	2/14/2006

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KIFF Analytical LLC

Report Number : 48339
Date : 2/16/2006

Project Name : **Tesoro - Livermore**
Project Number : **060209-PC1**

Sample : **MW-8** Matrix : Water Lab Number : 48339-08
Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Methyl-t-butyl ether (MTBE)	**0.57**	0.50	ug/L	EPA 8260B	2/13/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	2/13/2006
4-Bromofluorobenzene (Surr)	99.8		% Recovery	EPA 8260B	2/13/2006

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KIFF Analytical LLC

Report Number : 48339
Date : 2/16/2006

Project Name : **Tesoro - Livermore**
Project Number : **060209-PC1**

Sample : **MW-9** Matrix : Water Lab Number : 48339-09
Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2.8**	0.50	ug/L	EPA 8260B	2/14/2006
Toluene	**0.51**	0.50	ug/L	EPA 8260B	2/14/2006
Ethylbenzene	**6.4**	0.50	ug/L	EPA 8260B	2/14/2006
Total Xylenes	**0.84**	0.50	ug/L	EPA 8260B	2/14/2006
Methyl-t-butyl ether (MTBE)	**4.4**	0.50	ug/L	EPA 8260B	2/14/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/14/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/14/2006
TPH as Gasoline	**1200**	50	ug/L	EPA 8260B	2/14/2006
Toluene - d8 (Surr)	98.7		% Recovery	EPA 8260B	2/14/2006
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	2/14/2006

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KIFF Analytical LLC

Report Number : 48339

Date : 2/16/2006

Project Name : **Tesoro - Livermore**

Project Number : **060209-PC1**

Sample : **MW-10** Matrix : Water Lab Number : 48339-10

Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Toluene - d8 (Surr)	98.3		% Recovery	EPA 8260B	2/13/2006
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	2/13/2006

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Report Number : 48339

Date : 2/16/2006

Project Name : **Tesoro - Livermore**

Project Number : **060209-PC1**

Sample : **VW-2** Matrix : Water Lab Number : 48339-11

Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**140**	25	ug/L	EPA 8260B	2/15/2006
Toluene	**< 25**	25	ug/L	EPA 8260B	2/15/2006
Ethylbenzene	**130**	25	ug/L	EPA 8260B	2/15/2006
Total Xylenes	**36**	25	ug/L	EPA 8260B	2/15/2006
Methyl-t-butyl ether (MTBE)	**12000**	25	ug/L	EPA 8260B	2/15/2006
Diisopropyl ether (DIPE)	**< 25**	25	ug/L	EPA 8260B	2/15/2006
Ethyl-t-butyl ether (ETBE)	**< 25**	25	ug/L	EPA 8260B	2/15/2006
Tert-amyl methyl ether (TAME)	**65**	25	ug/L	EPA 8260B	2/15/2006
Tert-Butanol	**2800**	150	ug/L	EPA 8260B	2/15/2006
Methanol	**< 2500**	2500	ug/L	EPA 8260B	2/15/2006
Ethanol	**< 250**	250	ug/L	EPA 8260B	2/15/2006
1,2-Dichloroethane	**< 25**	25	ug/L	EPA 8260B	2/15/2006
1,2-Dibromoethane	**< 25**	25	ug/L	EPA 8260B	2/15/2006
TPH as Gasoline	**3500**	2500	ug/L	EPA 8260B	2/15/2006
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	2/15/2006
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	2/15/2006

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Report Number : 48339
Date : 2/16/2006

Project Name : **Tesoro - Livermore**
Project Number : **060209-PC1**

Sample : **VW-3** Matrix : Water Lab Number : 48339-12
Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/13/2006
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	2/13/2006
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	2/13/2006
4-Bromofluorobenzene (Surr)	89.4		% Recovery	EPA 8260B	2/13/2006

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Report Number : 48339
Date : 2/16/2006

Project Name : **Tesoro - Livermore**
Project Number : **060209-PC1**

Sample : **TP-1** Matrix : Water Lab Number : 48339-13
Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1400**	15	ug/L	EPA 8260B	2/15/2006
Toluene	**230**	15	ug/L	EPA 8260B	2/15/2006
Ethylbenzene	**990**	15	ug/L	EPA 8260B	2/15/2006
Total Xylenes	**1700**	15	ug/L	EPA 8260B	2/15/2006
Methyl-t-butyl ether (MTBE)	**8900**	15	ug/L	EPA 8260B	2/15/2006
Diisopropyl ether (DIPE)	**< 15**	15	ug/L	EPA 8260B	2/15/2006
Ethyl-t-butyl ether (ETBE)	**< 15**	15	ug/L	EPA 8260B	2/15/2006
Tert-amyl methyl ether (TAME)	**72**	15	ug/L	EPA 8260B	2/15/2006
Tert-Butanol	**2200**	70	ug/L	EPA 8260B	2/15/2006
Methanol	**< 1500**	1500	ug/L	EPA 8260B	2/15/2006
Ethanol	**< 150**	150	ug/L	EPA 8260B	2/15/2006
1,2-Dichloroethane	**< 15**	15	ug/L	EPA 8260B	2/15/2006
1,2-Dibromoethane	**< 15**	15	ug/L	EPA 8260B	2/15/2006
TPH as Gasoline	**19000**	1500	ug/L	EPA 8260B	2/15/2006
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	2/15/2006
4-Bromofluorobenzene (Surr)	99.5		% Recovery	EPA 8260B	2/15/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48339
Date : 2/16/2006

Project Name : **Tesoro - Livermore**
Project Number : **060209-PC1**

Sample : **TP-2** Matrix : Water Lab Number : 48339-14
Sample Date :2/9/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**94**	2.5	ug/L	EPA 8260B	2/14/2006
Toluene	**2.9**	2.5	ug/L	EPA 8260B	2/14/2006
Ethylbenzene	**28**	2.5	ug/L	EPA 8260B	2/14/2006
Total Xylenes	**14**	2.5	ug/L	EPA 8260B	2/14/2006
Methyl-t-butyl ether (MTBE)	**1200**	2.5	ug/L	EPA 8260B	2/14/2006
Diisopropyl ether (DIPE)	**< 2.5**	2.5	ug/L	EPA 8260B	2/14/2006
Ethyl-t-butyl ether (ETBE)	**< 2.5**	2.5	ug/L	EPA 8260B	2/14/2006
Tert-amyl methyl ether (TAME)	**13**	2.5	ug/L	EPA 8260B	2/14/2006
Tert-Butanol	**1600**	15	ug/L	EPA 8260B	2/14/2006
Methanol	**< 250**	250	ug/L	EPA 8260B	2/14/2006
Ethanol	**< 25**	25	ug/L	EPA 8260B	2/14/2006
1,2-Dichloroethane	**< 2.5**	2.5	ug/L	EPA 8260B	2/14/2006
1,2-Dibromoethane	**< 2.5**	2.5	ug/L	EPA 8260B	2/14/2006
TPH as Gasoline	**2700**	250	ug/L	EPA 8260B	2/14/2006
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	2/14/2006
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	2/14/2006

Approved By: Joel Kiff

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

Report Number : 48339

Date : 2/16/2006

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **060209-PC1**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	2/13/2006
Methanol	< 50	50	ug/L	EPA 8260B	2/13/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/13/2006
Toluene - d8 (Surr)	109		%	EPA 8260B	2/13/2006
4-Bromofluorobenzene (Surr)	102		%	EPA 8260B	2/13/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	2/13/2006
Methanol	< 50	50	ug/L	EPA 8260B	2/13/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/13/2006
Toluene - d8 (Surr)	102		%	EPA 8260B	2/13/2006
4-Bromofluorobenzene (Surr)	100		%	EPA 8260B	2/13/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	2/13/2006
Methanol	< 50	50	ug/L	EPA 8260B	2/13/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	2/13/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	2/13/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/13/2006
Toluene - d8 (Surr)	99.4		%	EPA 8260B	2/13/2006
4-Bromofluorobenzene (Surr)	106		%	EPA 8260B	2/13/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	2/14/2006
Methanol	< 50	50	ug/L	EPA 8260B	2/14/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	2/14/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/14/2006
Toluene - d8 (Surr)	102		%	EPA 8260B	2/14/2006
4-Bromofluorobenzene (Surr)	99.6		%	EPA 8260B	2/14/2006

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48339

Date : 2/16/2006

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **060209-PC1**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	2/14/2006
Methanol	< 50	50	ug/L	EPA 8260B	2/14/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	2/14/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/14/2006
Toluene - d8 (Surr)	101		%	EPA 8260B	2/14/2006
4-Bromofluorobenzene (Surr)	100		%	EPA 8260B	2/14/2006
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	2/14/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	2/14/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/14/2006
Toluene - d8 (Surr)	98.8		%	EPA 8260B	2/14/2006
4-Bromofluorobenzene (Surr)	102		%	EPA 8260B	2/14/2006

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48339

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 2/16/2006

Project Name : **Tesoro - Livermore**

Project Number : **060209-PC1**

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	48371-06	<0.50	39.8	39.9	39.4	38.6	ug/L	EPA 8260B	2/13/06	98.8	96.8	2.10	70-130	25
Toluene	48371-06	<0.50	39.8	39.9	39.2	38.6	ug/L	EPA 8260B	2/13/06	98.3	96.8	1.60	70-130	25
Tert-Butanol	48371-06	<5.0	199	200	187	180	ug/L	EPA 8260B	2/13/06	93.7	90.2	3.78	70-130	25
Methyl-t-Butyl Ether	48371-06	<0.50	39.8	39.9	40.3	41.5	ug/L	EPA 8260B	2/13/06	101	104	2.67	70-130	25
Benzene	48339-04	<0.50	40.0	40.0	36.0	36.1	ug/L	EPA 8260B	2/13/06	90.1	90.3	0.270	70-130	25
Toluene	48339-04	<0.50	40.0	40.0	33.8	33.5	ug/L	EPA 8260B	2/13/06	84.6	83.7	1.01	70-130	25
Tert-Butanol	48339-04	<5.0	200	200	205	203	ug/L	EPA 8260B	2/13/06	102	102	0.968	70-130	25
Methyl-t-Butyl Ether	48339-04	<0.50	40.0	40.0	36.4	37.4	ug/L	EPA 8260B	2/13/06	91.0	93.5	2.74	70-130	25
Benzene	48339-08	<0.50	40.0	40.0	36.3	35.3	ug/L	EPA 8260B	2/13/06	90.8	88.3	2.82	70-130	25
Toluene	48339-08	<0.50	40.0	40.0	38.4	37.6	ug/L	EPA 8260B	2/13/06	95.9	94.1	1.97	70-130	25
Tert-Butanol	48339-08	<5.0	200	200	187	181	ug/L	EPA 8260B	2/13/06	93.6	90.7	3.15	70-130	25
Methyl-t-Butyl Ether	48339-08	0.57	40.0	40.0	33.5	32.8	ug/L	EPA 8260B	2/13/06	82.2	80.6	2.08	70-130	25
Benzene	48345-05	27	40.0	40.0	66.0	64.5	ug/L	EPA 8260B	2/14/06	97.8	94.1	3.87	70-130	25
Toluene	48345-05	<0.50	40.0	40.0	42.6	41.6	ug/L	EPA 8260B	2/14/06	106	104	2.46	70-130	25
Tert-Butanol	48345-05	<5.0	200	200	200	198	ug/L	EPA 8260B	2/14/06	100	99.3	1.02	70-130	25
Methyl-t-Butyl Ether	48345-05	<0.50	40.0	40.0	40.0	38.9	ug/L	EPA 8260B	2/14/06	100	97.3	2.68	70-130	25
Benzene	48375-02	<0.50	40.0	40.0	42.5	41.4	ug/L	EPA 8260B	2/14/06	106	104	2.51	70-130	25
Toluene	48375-02	<0.50	40.0	40.0	43.2	42.2	ug/L	EPA 8260B	2/14/06	108	106	2.36	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48339

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 2/16/2006

Project Name : **Tesoro - Livermore**

Project Number : **060209-PC1**

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	48375-02	150	200	200	337	330	ug/L	EPA 8260B	2/14/06	93.5	89.9	3.89	70-130	25
Methyl-t-Butyl Ether	48375-02	39	40.0	40.0	84.7	82.9	ug/L	EPA 8260B	2/14/06	115	110	3.95	70-130	25
Benzene	48356-19	<0.50	40.0	40.0	38.8	37.9	ug/L	EPA 8260B	2/14/06	97.0	94.7	2.46	70-130	25
Toluene	48356-19	<0.50	40.0	40.0	37.8	36.7	ug/L	EPA 8260B	2/14/06	94.5	91.8	2.84	70-130	25
Tert-Butanol	48356-19	<5.0	200	200	201	204	ug/L	EPA 8260B	2/14/06	100	102	1.68	70-130	25
Methyl-t-Butyl Ether	48356-19	<0.50	40.0	40.0	38.7	38.9	ug/L	EPA 8260B	2/14/06	96.8	97.3	0.585	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48339

QC Report : Laboratory Control Sample (LCS)

Date : 2/16/2006

Project Name : **Tesoro - Livermore**

Project Number : **060209-PC1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	2/13/06	93.6	70-130
Toluene	40.0	ug/L	EPA 8260B	2/13/06	101	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/13/06	88.0	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/13/06	80.5	70-130
Benzene	40.0	ug/L	EPA 8260B	2/13/06	98.2	70-130
Toluene	40.0	ug/L	EPA 8260B	2/13/06	91.4	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/13/06	108	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/13/06	107	70-130
Benzene	40.0	ug/L	EPA 8260B	2/13/06	92.3	70-130
Toluene	40.0	ug/L	EPA 8260B	2/13/06	98.5	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/13/06	92.6	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/13/06	83.0	70-130
Benzene	40.0	ug/L	EPA 8260B	2/14/06	100	70-130
Toluene	40.0	ug/L	EPA 8260B	2/14/06	104	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/14/06	95.0	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/14/06	95.6	70-130
Benzene	40.0	ug/L	EPA 8260B	2/14/06	105	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48339

QC Report : Laboratory Control Sample (LCS)

Date : 2/16/2006

Project Name : **Tesoro - Livermore**

Project Number : **060209-PC1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Toluene	40.0	ug/L	EPA 8260B	2/14/06	107	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/14/06	102	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/14/06	99.2	70-130
Benzene	40.0	ug/L	EPA 8260B	2/14/06	97.4	70-130
Toluene	40.0	ug/L	EPA 8260B	2/14/06	95.9	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/14/06	101	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/14/06	96.6	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Calscience Environmental Laboratories, Inc.

February 16, 2006

Joel Kiff
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Subject: **Calscience Work Order No.: 06-02-0652**
Client Reference: Tesoro - Livermore

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/11/2006 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 02/11/06
Work Order No: 06-02-0652

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-2	**06-02-0652-1**	**02/09/06**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Phosphorus, Total	0.27	0.10	1		mg/L	N/A	02/14/06	EPA 365.3
Sulfide, Total	ND	0.050	1		mg/L	N/A	02/15/06	EPA 376.2
Chemical Oxygen Demand	150	5	1		mg/L	02/13/06	02/14/06	EPA 410.4
Carbon, Total Organic	37	0.50	1		mg/L	N/A	02/13/06	EPA 415.1
Alkalinity, Total (as CaCO3)	530	5.0	1		mg/L	N/A	02/14/06	SM 2320B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-3	**06-02-0652-2**	**02/09/06**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Phosphorus, Total	0.34	0.10	1		mg/L	N/A	02/14/06	EPA 365.3
Sulfide, Total	ND	0.050	1		mg/L	N/A	02/15/06	EPA 376.2
Chemical Oxygen Demand	56	5	1		mg/L	02/13/06	02/14/06	EPA 410.4
Carbon, Total Organic	7.0	0.5	1		mg/L	N/A	02/13/06	EPA 415.1
Alkalinity, Total (as CaCO3)	390	5.0	1		mg/L	N/A	02/14/06	SM 2320B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-4	**06-02-0652-3**	**02/09/06**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Phosphorus, Total	0.54	0.10	1		mg/L	N/A	02/14/06	EPA 365.3
Sulfide, Total	ND	0.050	1		mg/L	N/A	02/15/06	EPA 376.2
Chemical Oxygen Demand	61	5	1		mg/L	02/13/06	02/14/06	EPA 410.4
Carbon, Total Organic	8.0	0.5	1		mg/L	N/A	02/13/06	EPA 415.1
Alkalinity, Total (as CaCO3)	430	5.0	1		mg/L	N/A	02/14/06	SM 2320B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 02/11/06
Work Order No: 06-02-0652

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-6	**06-02-0652-4**	**02/09/06**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Phosphorus, Total	0.62	0.10	1		mg/L	N/A	02/14/06	EPA 365.3
Sulfide, Total	ND	0.050	1		mg/L	N/A	02/15/06	EPA 376.2
Chemical Oxygen Demand	110	5	1		mg/L	02/13/06	02/14/06	EPA 410.4
Carbon, Total Organic	21	0.50	1		mg/L	N/A	02/13/06	EPA 415.1
Alkalinity, Total (as CaCO3)	550	5.0	1		mg/L	N/A	02/14/06	SM 2320B

MW-9	**06-02-0652-5**	**02/09/06**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Phosphorus, Total	0.59	0.10	1		mg/L	N/A	02/14/06	EPA 365.3
Sulfide, Total	ND	0.050	1		mg/L	N/A	02/15/06	EPA 376.2
Chemical Oxygen Demand	87	5	1		mg/L	02/13/06	02/14/06	EPA 410.4
Carbon, Total Organic	12	0.50	1		mg/L	N/A	02/13/06	EPA 415.1
Alkalinity, Total (as CaCO3)	450	5.0	1		mg/L	N/A	02/14/06	SM 2320B

Method Blank		**N/A**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Phosphorus, Total	ND	0.10	1		mg/L	N/A	02/14/06	EPA 365.3
Sulfide, Total	ND	0.050	1		mg/L	N/A	02/15/06	EPA 376.2
Chemical Oxygen Demand	ND	5.0	1		mg/L	02/13/06	02/14/06	EPA 410.4
Carbon, Total Organic	ND	0.50	1		mg/L	N/A	02/13/06	EPA 415.1

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: N/A
Work Order No: 06-02-0652

Project: Tesoro - Livermore

Matrix: Aqueous

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Phosphorus, Total	EPA 365.3	MW-9	02/14/06	N/A	77	76	70-130	1	0-25	
Carbon, Total Organic	EPA 415.1	06-02-0644-1	02/13/06	N/A	99	101	70-130	1	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: N/A
Work Order No: 06-02-0652

Project: Tesoro - Livermore

Matrix: Aqueous

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Alkalinity, Total (as CaCO3)	SM 2320B	06-02-0725-7	02/14/06	2.0	2.0	0	0-25	
Bicarbonate (as CaCO3)	SM 2320B	06-02-0725-7	02/14/06	2.0	2.0	0	0-25	
Carbonate (as CaCO3)	SM 2320B	06-02-0725-7	02/14/06	ND	ND	NA	0-25	
Hydroxide (as CaCO3)	SM 2320B	06-02-0725-7	02/14/06	ND	ND	NA	0-25	
Chemical Oxygen Demand	EPA 410.4	MW-3	02/14/06	56	54	5	0-25	
Sulfide, Total	EPA 376.2	06-02-0493-1	02/15/06	1.8	2.0	11	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: N/A
Work Order No: 06-02-0652

Project: Tesoro - Livermore

Matrix : Aqueous

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Phosphorus, Total	EPA 365.3	099-05-098-1,694	02/14/06	N/A	0.40	0.40	101	80-120	
Carbon, Total Organic	EPA 415.1	099-05-097-2,166	02/13/06	N/A	10	9.0	90	80-120	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 06-02-0652

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

0652

KIFF Analytical LLC

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

Cal Science Environmental
7440 Lincoln Way
Garden Grove, CA 92841
714-895-5494

Lab No. ________ Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Scott Forbes

EDF Report? ___ Yes _X_No

Company/Address: Kiff Analytical, LLC

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Global ID:

EDF Deliverable to (Email Address):

Phone No.:

FAX No.:

Project Number: 060209-PC1

P.O. No.: 48339

Project Name: Tesoro - Livermore

E-mail address: inbox@kiffanalytical.com

Project Address:

Analysis Request

	Sample Designation	Sampling Date	Sampling Time	Container: Glass	Container: Poly	Container: Amber			Preservative: HCl	Preservative: ZnAc2&Na	Preservative: ICE	Preservative: NONE	Preservative: H2SO4	Matrix: WATER	Matrix: SOIL		Total Sulfide (EPA 376.2)	Alkalinity (EPA 310.1)	Total Organic Carbon (EPA 415.1)	Chemical Oxygen Demand (EPA 410.4)	Phosphorus (EPA 365.3)				Date due: February 16, 2006	For Lab Use Only
1	MW-2	02/09/06	1448	1	2					X	X	X	X	X			X	X	X	X	X				X	
2	MW-3	02/09/06	1148	1	2					X	X	X	X	X			X	X	X	X	X				X	
3	MW-4	02/09/06	1035	1	2					X	X	X	X	X			X	X	X	X	X				X	
4	MW-6	02/09/06	1248	1	2					X	X	X	X	X			X	X	X	X	X				X	
5	MW-9	02/09/06	1352	1	2					X	X	X	X	X			X	X	X	X	X				X	

Relinquished by:	Date	Time	Received by:
[signature] Kiff Analytical	021006	1900	
Relinquished by:	Date	Time	Received by:
Relinquished by: Cal Overnight	2/11/06	1050	Received by Laboratory: [signature] Cel

Remarks:

Bill to: Accounts Payable

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 06 - 02 - 0552

Cooler 1 **of** 1

SAMPLE RECEIPT FORM

CLIENT: Kiff Analytical **DATE:** 2/11/06

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.

_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

3.4 °C Temperature blank.
TL 3 °C IR thermometer.
_____ Ambient temperature.

Initial: TL

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: ✓ No (Not Intact) : _____ Not Applicable (N/A): _____

Initial: TL

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)	✓		
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: TL

COMMENTS:

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

February 15, 2006

CLS Work Order #: CPB0350
COC #: 48339

Scott Forbes
KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project Name: Tesoro Livermore

Enclosed are the results of analyses for samples received by the laboratory on 02/10/06 08:44. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,

James Liang, Ph.D.
Laboratory Director

CA DOHS ELAP Accreditation/Registration number 1233

CALIFORNIA LABORATORY SERVICES

02/15/06 10:08

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CPB0350
COC #: 48339

CPB0350

KIFF Analytical LLC
2795 Second Street, Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4808

California Lab Services
3249 Fitzgerald Rd.
Rancho Cordova, CA 95742
tel: (916) 638-7301 COC# 48339 Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Scott Forbes
EDF Report? __ Yes _X_ No
Company/Address: Kiff Analytical, LLC
Recommended but not mandatory to complete this section:
Sampling Company Log Code:
Phone No.:
FAX No.:
Global ID:
Project Number: 060209-PC1
P.O. No.: 48339
EDF Deliverable to (Email Address):
Project Name: Tesoro-Livermore
E-mail address: inbox@kiffanalytical.com
Project Address:

Sample Designation	Sampling Date	Sampling Time	Glass Jar	Poly	Amber			HCl	HNO3	ICE	NONE	Na2S2O3	WATER	SOIL	Carbon Dioxide, Dissolved (SM 4500)	Ferrous Iron (SM 3500)	Chloride, Nitrogen as Nitrite (NO2)	Sulfate/Nitrate (NO3)				Date due: February 17, 2006	For Lab Use Only
MW-2	2/9/06	1448		2						X	2		X		X	X	X	X				X	
MW-3	2/9/06	1148		2						X	2		X		X	X	X	X				X	
MW-4	2/9/06	1035		2						X	2		X		X	X	X	X				X	
MW-6	2/9/06	1248		2						X	2		X		X	X	X	X				X	
MW-9	2/9/06	1352		2						X	2		X		X	X	X	X				X	

(Container: Glass Jar, Poly, Amber; Preservative: HCl, HNO3, ICE, NONE, Na2S2O3; Matrix: WATER, SOIL)

Relinquished by:	Date	Time	Received by:
[signature] Kiff Analytical	021006	0844	
	2-10-6	0844	Received by Laboratory: [signature] 0°

Remarks:

Bill to: Accounts Payable

CALIFORNIA LABORATORY SERVICES

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CPB0350
COC #: 48339

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2 (CPB0350-01) Water	**Sampled: 02/09/06 14:48**	**Received: 02/10/06 08:44**							
Carbon Dioxide as CO2	**99**	5.0	mg/L	1	CP01055	02/13/06	02/13/06	SM 4500C	
Chloride	**72**	5.0	"	10	CP01000	02/10/06	02/10/06	EPA 300.0	
Ferrous Iron	**1.4**	0.10	"	1	CP01016	02/10/06	02/10/06	SM3500-Fe D	
Nitrate as NO3	**0.65**	0.50	"	"	CP01000	02/10/06	02/10/06	EPA 300.0	
Nitrite as N	ND	0.10	"	"	"	"	"	"	
Sulfate as SO4	**1.5**	0.50	"	"	"	"	"	"	
MW-3 (CPB0350-02) Water	**Sampled: 02/09/06 11:48**	**Received: 02/10/06 08:44**							
Carbon Dioxide as CO2	**70**	5.0	mg/L	1	CP01055	02/13/06	02/13/06	SM 4500C	
Chloride	**98**	5.0	"	10	CP01000	02/10/06	02/10/06	EPA 300.0	
Ferrous Iron	ND	0.10	"	1	CP01016	02/10/06	02/10/06	SM3500-Fe D	
Nitrate as NO3	**4.3**	0.50	"	"	CP01000	02/10/06	02/10/06	EPA 300.0	
Nitrite as N	ND	0.10	"	"	"	"	"	"	
Sulfate as SO4	**57**	5.0	"	10	"	"	02/10/06	"	
MW-4 (CPB0350-03) Water	**Sampled: 02/09/06 10:35**	**Received: 02/10/06 08:44**							
Carbon Dioxide as CO2	**41**	5.0	mg/L	1	CP01055	02/13/06	02/13/06	SM 4500C	
Chloride	**75**	5.0	"	10	CP01000	02/10/06	02/10/06	EPA 300.0	
Ferrous Iron	ND	0.10	"	1	CP01016	02/10/06	02/10/06	SM3500-Fe D	
Nitrate as NO3	**32**	0.50	"	"	CP01000	02/10/06	02/10/06	EPA 300.0	
Nitrite as N	ND	0.10	"	"	"	"	"	"	
Sulfate as SO4	**70**	5.0	"	10	"	"	02/10/06	"	
MW-6 (CPB0350-04) Water	**Sampled: 02/09/06 12:48**	**Received: 02/10/06 08:44**							
Carbon Dioxide as CO2	**130**	5.0	mg/L	1	CP01055	02/13/06	02/13/06	SM 4500C	
Chloride	**68**	5.0	"	10	CP01000	02/10/06	02/10/06	EPA 300.0	
Ferrous Iron	**0.87**	0.10	"	1	CP01016	02/10/06	02/10/06	SM3500-Fe D	
Nitrate as NO3	ND	0.50	"	"	CP01000	02/10/06	02/10/06	EPA 300.0	
Nitrite as N	ND	0.10	"	"	"	"	"	"	
Sulfate as SO4	ND	0.50	"	"	"	"	"	"	

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CPB0350
COC #: 48339

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-9 (CPB0350-05) Water	**Sampled: 02/09/06 13:52**	**Received: 02/10/06 08:44**							
Carbon Dioxide as CO2	**62**	5.0	mg/L	1	CP01055	02/13/06	02/13/06	SM 4500C	
Chloride	**94**	5.0	"	10	CP01000	02/10/06	02/11/06	EPA 300.0	
Ferrous Iron	**0.20**	0.10	"	1	CP01016	02/10/06	02/10/06	SM3500-Fe D	
Nitrate as NO3	ND	0.50	"	"	CP01000	02/10/06	02/10/06	EPA 300.0	
Nitrite as N	ND	0.10	"	"	"	"	"	"	
Sulfate as SO4	**11**	0.50	"	"	"	"	"	"	

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CPB0350
COC #: 48339

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CP01000 - General Prep										
Blank (CP01000-BLK1)				Prepared & Analyzed: 02/10/06						
Nitrate as NO3	ND	0.50	mg/L							
Sulfate as SO4	ND	0.50	"							
Chloride	ND	0.50	"							
Nitrite as N	ND	0.10	"							
LCS (CP01000-BS1)				Prepared & Analyzed: 02/10/06						
Chloride	1.92	0.50	mg/L	2.00		96.0	80-120			
Nitrate as NO3	2.08	0.50	"	2.00		104	80-120			
Sulfate as SO4	5.06	0.50	"	5.00		101	80-120			
Nitrite as N	0.533	0.10	"	0.610		87.4	80-120			
LCS Dup (CP01000-BSD1)				Prepared & Analyzed: 02/10/06						
Sulfate as SO4	5.02	0.50	mg/L	5.00		100	80-120	0.794	20	
Chloride	1.92	0.50	"	2.00		96.0	80-120	0.00	20	
Nitrate as NO3	2.08	0.50	"	2.00		104	80-120	0.00	20	
Nitrite as N	0.536	0.10	"	0.610		87.9	80-120	0.561	20	
Matrix Spike (CP01000-MS1)		**Source: CPB0365-01**		Prepared: 02/10/06		Analyzed: 02/11/06				
Nitrate as NO3	2.55	0.50	mg/L	2.00	1.1	72.5	75-125			QM-5
Sulfate as SO4	7.88	0.50	"	5.00	3.1	95.6	75-125			
Chloride	3.58	0.50	"	2.00	1.8	89.0	75-125			
Nitrite as N	0.550	0.10	"	0.610	0.0	90.2	75-125			
Matrix Spike Dup (CP01000-MSD1)		**Source: CPB0365-01**		Prepared: 02/10/06		Analyzed: 02/11/06				
Chloride	3.60	0.50	mg/L	2.00	1.8	90.0	75-125	0.557	25	
Nitrate as NO3	2.56	0.50	"	2.00	1.1	73.0	75-125	0.391	25	QM-5
Sulfate as SO4	7.93	0.50	"	5.00	3.1	96.6	75-125	0.633	25	
Nitrite as N	0.557	0.10	"	0.610	0.0	91.3	75-125	1.26	25	

KIFF Analytical
2795 Second St. Suite 300
Davis, CA 95616

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Scott Forbes

CLS Work Order #: CPB0350
COC #: 48339

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CP01016 - General Preparation										
Blank (CP01016-BLK1)				Prepared & Analyzed: 02/10/06						
Ferrous Iron	ND	0.10	mg/L							
LCS (CP01016-BS1)				Prepared & Analyzed: 02/10/06						
Ferrous Iron	0.263	0.10	mg/L	0.250		105	80-120			
LCS Dup (CP01016-BSD1)				Prepared & Analyzed: 02/10/06						
Ferrous Iron	0.263	0.10	mg/L	0.250		105	80-120	0.00	25	
Matrix Spike (CP01016-MS1)		**Source: CPB0350-01**		Prepared & Analyzed: 02/10/06						
Ferrous Iron	1.64	0.10	mg/L	0.250	1.4	96.0	75-125			
Matrix Spike Dup (CP01016-MSD1)		**Source: CPB0350-01**		Prepared & Analyzed: 02/10/06						
Ferrous Iron	1.64	0.10	mg/L	0.250	1.4	96.0	75-125	0.00	30	
Batch CP01055 - General Preparation										
Blank (CP01055-BLK1)				Prepared & Analyzed: 02/13/06						
Carbon Dioxide as CO2	ND	5.0	mg/L							

KIFF Analytical	Project: Tesoro Livermore	
2795 Second St. Suite 300	Project Number: [none]	**CLS Work Order #: CPB0350**
Davis, CA 95616	Project Manager: Scott Forbes	COC #: 48339

Notes and Definitions

QM-5	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

LAB KIFF 48339 DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
☐ EPA ☐ RWQCB REGION
☐ LIA
☐ OTHER

CHAIN OF CUSTODY BTS # 060209-PC1

CLIENT: Arctos Environmental, Inc.
SITE: Tesoro - Livermore
1619 1st Street
Livermore, CA

SPECIAL INSTRUCTIONS
Invoice and Report to : Arctos Environmental, Inc.
Attn: Mike Purchase
1332 Peralta Ave. Berkeley, CA 94702
Ph. 510-525-2180
mpurchase@arctosenv.com

CONDUCT ANALYSIS TO DETECT

SAMPLE I.D.	DATE	TIME	MATRIX (S= SOIL W=H_2O)	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	TPH-G + BTEX + MTBE (8260)	(7) Oxygenates (8260)	Lead Scavengers	Ferrous Iron (24 hr. Hold time)	Nitrate, Sulfate, Phosphorous	Major anions (Chloride, Nitrite, Sulfide)	Total Alkalinity (SM2320B)	COD (410.4)	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW-1	2/9/06	1215	W	3		x	x	x									-01
MW-2		1448		8		x	x	x	x	x	x	x	x				-02
MW-3		1148		8		x	x	x	x	x	x	x	x				-03
MW-4		1035		8		x	x	x	x	x	x	x	x				-04
MW-5		1316		3		x	x	x									-05
MW-6		1248		8		x	x	x	x	x	x	x	x				-06
MW-7		950		3		x	x	x									-07
MW-8		910		3		x	x	x									-08
MW-9		1352		8		x	x	x	x	x	x	x	x				-09
MW-10		1115		~~8~~ 3		x	x	x									-10

SAMPLING COMPLETED DATE 2/9/06 TIME 1530
SAMPLING PERFORMED BY R. Cornish
RESULTS NEEDED NO LATER THAN Standard TAT

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]					
			[signature] / Kiff Analytical	020906	1537

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

1 OF 3

Sample Receipt
Temp °C 2.9 Therm. ID# IR-4
Initial OA Date 02-09-06
Time 1925 Coolant present: Y / N

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CONDUCT ANALYSIS TO DETECT

LAB KIFF 48339 DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
☐ EPA ☐ RWQCB REGION
☐ LIA
☐ OTHER

CHAIN OF BTS # 060209-PC1

CLIENT Arctos Environmental, Inc.

SITE Tesoro - Livermore

1619 1st Street

Livermore, CA

SPECIAL INSTRUCTIONS

Invoice and Report to : Arctos Environmental, Inc.

Attn: Mike Purchase

1332 Peralta Ave. Berkeley, CA 94702
Ph. 510-525-2180
mpurchase@arctosenv.com

SAMPLE I.D.	DATE	TIME	MATRIX S= SOIL W=H_2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	TOC	Carbon Dioxide							ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW-2	2/9/06	1446	W	8		X	X										-02
MW-3		1148		8		X	X										-03
MW-4		1035		8		X	X										-04
MW-9		1352		8		X	X										-09
MW-6		1248		8		X	X										-06

SAMPLING COMPLETED DATE 2/9/06 TIME 1530

SAMPLING PERFORMED BY P. Cornish

RESULTS NEEDED NO LATER THAN Standard TAT

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
			Osara	2-10-06	1537

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF BTS # 060209-PCJ

CLIENT: Arctos Environmental, Inc.

SITE: Tesoro - Livermore
1619 1st Street
Livermore, CA

LAB: KIFF 48339 | DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
☐ EPA ☐ RWQCB REGION
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS

Invoice and Report to : Arctos Environmental, Inc.
Attn: Mike Purchase
1332 Peralta Ave. Berkeley, CA 94702
Ph. 510-525-2180
mpurchase@arctosenv.com

SAMPLE I.D.	DATE	TIME	MATRIX S= SOIL W=H_2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	CONDUCT ANALYSIS TO DETECT: TPH-G + BTEX + MTBE (8260)	(7) Oxygenates (8260)	Lead Scavengers	Ferrous Iron (24 hr. Hold time)	Nitrate, Sulfate, Phosphorous	Major anions (Chloride, Nitrite, Sulfide)	Total Alkalinity (SM2320B)	COD (410.4)	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
VW-2	2/9/06	1432	W	3		A	A	A									-11
VW-3	"	1215	"	3		A	A	A									-12
TP-1	"	1505	"	3		A	A	A									-13
TP-2	"	1520	"	3		A	A	A									-14

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY
	2/9/06	1530	P. Cornish

RESULTS NEEDED NO LATER THAN: Standard TAT

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
PCJ					
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
			Kiff Analytical	20906	1537

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

teg

TRANSGLOBAL
ENVIRONMENTAL
GEOCHEMISTRY

26 January 2006

Mr. Mike Purchase
Arctos Environmental
1332 Peralta Avenue
Berkeley, CA 94702

SUBJECT: DATA REPORT - Arctos Environmental Project # 01LV
1619 1st Street - Livermore, California

TEG Project # 60103D

Mr. Purchase:

Please find enclosed a data report for the samples analyzed from the above referenced project for Arctos Environmental. The samples were analyzed on site in TEG's mobile laboratory. TEG conducted a total of 12 analyses on 12 soil vapor samples.

-- 12 analyses on soil vapors for aromatic volatile hydrocarbons (BTEX), fuel oxygenates, and total petroleum hydrocarbons-gasoline by EPA method 8260B.

The results of the analyses are summarized in the enclosed tables. Applicable detection limits and calibration data are included in the tables.

1,1 difluoroethane was used as a leak check compound around the probe rods during the soil vapor sampling. No 1,1 difluoroethane was detected in any of the vapor samples reported at or above the DTSC recommended leak check compound reporting limit of 10 ug/L of vapor.

TEG appreciates the opportunity to have provided analytical services to Arctos Environmental on this project. If you have any further questions relating to these data or report, please do not hesitate to contact us.

Sincerely,

Mark Jerpbak
Director, TEG-Northern California

teg

Arctos Project # 01LV
1619 1st Street, Livermore, California

TEG Project #60103D

EPA Method 8260B VOC Analyses of SOIL VAPOR in ug/L of Vapor,

SAMPLE NUMBER:		Blank	SG-1	SG-2	SG-3	SG-4	SG-4	SG-4
PURGE VOLUME:			3	3	3	1	3	7
SAMPLE DEPTH (feet):			5.0	5.0	5.0	4.5	4.5	4.5
COLLECTION DATE:		1/03/06	1/03/06	1/03/06	1/03/06	1/03/06	1/03/06	1/03/06
COLLECTION TIME:		09:40	16:30	13:10	15:03	10:21	10:41	11:01
DILUTION FACTOR:		1	1	1	1	1	1	1
	RL							
Benzene	0.10	nd	nd	nd	nd	nd	nd	nd
Toluene	0.10	nd	0.28	0.24	0.20	0.23	0.21	0.18
Ethylbenzene	0.10	nd	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.10	nd	0.27	0.25	0.19	0.17	0.21	0.18
o-Xylene	0.10	nd	nd	nd	nd	nd	nd	nd
Tert- Butanol (TBA)	0.50	nd	nd	nd	nd	nd	nd	nd
Methyl-t-butyl ether (MTBE)	0.10	nd	nd	nd	nd	nd	nd	nd
Diisopropyl ether (DIPE)	0.10	nd	nd	nd	nd	nd	nd	nd
Ethyl-t-butyl ether (ETBE)	0.10	nd	nd	nd	nd	nd	nd	nd
Tert-amyl methyl ether (TAME)	0.10	nd	nd	nd	nd	nd	nd	nd
TPH	5.0	nd	nd	nd	nd	19	11	9.4
Surrogate Recovery (DBFM)		106%	108%	109%	107%	107%	110%	109%
Surrogate Recovery (1,2-DCA-d4)		98%	103%	100%	102%	105%	104%	101%
Surrogate Recovery (Toluene-d8)		108%	108%	107%	108%	107%	108%	108%

'RL' REPORTING LIMIT
'nd' NOT DETECTED AT LISTED REPORTING LIMITS

ANALYSES PERFORMED IN TEG-Northern California's LAB
ANALYSES PERFORMED BY: Mr. John Henkelman

11350 Monier Park Place, Rancho Cordova, CA 95742 Phone: (916) 853-8010 Fax: (916) 853-8020

teg

Arctos Project # 01LV
1619 1st Street, Livermore, California

TEG Project #60103D

EPA Method 8260B VOC Analyses of SOIL VAPOR in ug/L of Vapor,

SAMPLE NUMBER:		SG-5	SG-5 dup	SG-6	SG-7	SG-8	SG-9
PURGE VOLUME:		3	3	3	3	3	3
SAMPLE DEPTH (feet):		5.0	5.0	5.0	5.0	5.0	5.0
COLLECTION DATE:		1/03/06	1/03/06	1/03/06	1/03/06	1/03/06	1/03/06
COLLECTION TIME:		12:14	12:35	13:45	11:35	15:20	15:45
DILUTION FACTOR:		1	1	1	1	1	1
	RL						
Benzene	0.10	nd	nd	nd	nd	nd	nd
Toluene	0.10	0.22	0.17	0.18	0.23	0.14	0.18
Ethylbenzene	0.10	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.10	0.22	0.19	0.19	0.17	0.16	0.19
o-Xylene	0.10	nd	nd	nd	nd	nd	nd
Tert- Butanol (TBA)	0.50	nd	nd	nd	nd	nd	nd
Methyl-t-butyl ether (MTBE)	0.10	nd	nd	nd	nd	nd	nd
Diisopropyl ether (DIPE)	0.10	nd	nd	nd	nd	nd	nd
Ethyl-t-butyl ether (ETBE)	0.10	nd	nd	nd	nd	nd	nd
Tert-amyl methyl ether (TAME)	0.10	nd	nd	nd	nd	nd	nd
TPH	5.0	nd	nd	nd	nd	nd	nd
Surrogate Recovery (DBFM)		108%	104%	108%	109%	113%	107%
Surrogate Recovery (1,2-DCA-d4)		103%	98%	99%	101%	103%	107%
Surrogate Recovery (Toluene-d8)		107%	107%	108%	107%	109%	107%

'RL' REPORTING LIMIT

'nd' NOT DETECTED AT LISTED REPORTING LIMITS

ANALYSES PERFORMED IN TEG-Northern California's LAB

ANALYSES PERFORMED BY: Mr. John Henkelman

11350 Monier Park Place, Rancho Cordova, CA 95742 Phone: (916) 853-8010 Fax: (916) 853-8020

TEG Project #60103D

CALIBRATION STANDARDS - Initial Calibration / LCS

Instrument: Agilent 5973N MSD

COMPOUND	INITIAL CALIBRATION RF	INITIAL CALIBRATION %RSD	LCS RF	LCS %DIFF
Benzene	1.023	14.1%	1.169	14.3%
Toluene	0.699	9.5%	0.724	3.6%
Ethylbenzene	0.557	16.0%	0.583	4.7%
m,p-Xylene	0.574	14.4%	0.618	7.7%
o-Xylene	0.756	15.0%	0.704	6.9%
Tert- Butanol (TBA)	0.121	11.9%	0.131	8.3%
Methyl-t-butyl ether (MTBE)	0.406	12.4%	0.424	4.4%
Ethyl-t-butyl ether (ETBE)	0.628	10.6%	0.655	4.3%
Tert-amyl methyl ether (TAME)	0.540	11.8%	0.589	9.1%
ACCEPTABLE LIMITS:		20.0%		15.0%

KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

Mike Purchase
Arctos Environmental
1332 Peralta Avenue
Berkeley, CA

Subject : 44 Soil Samples and 6 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 : 48126
Date : 02/08/2006

Subject : 44 Soil Samples and 6 Water Samples
Project Name : Tesoro - Livermore
Project Number : 67076
P.O. Number : 67076

Case Narrative

Repeat analysis yielded inconsistent results for sample DB-4@50. The concentrations appear to vary between the bottles. The highest concentration results are reported.

The Method Reporting Limit for Methanol has been increased due to the presence of an interfering compound for samples DB-3@50, DB-2@45, DB-2@55, DB-1@50, DB-4-42, DB-3-33, DB-3-42, DB-2-43 and DB-2-45.

The Method Reporting Limit for Ethanol has been increased due to the presence of an interfering compound for samples DB-3-42, DB-3-45, DB-2-40, DB-1-45, DB-1-48 and DB-2-45.

Tert-Butanol results for sample DB-1@50 may be biased slightly high and are flagged with a 'J'. A fraction of MtBE (typically less than 1%) converts to Tert-Butanol during the analysis of water samples. We consider this conversion effect to be mathematically significant in samples that contain MtBE/Tert-Butanol in ratios of over 20:1.

Tert-Butanol results for samples DB-4-30, DB-4-32, DB-4-37, DB-4-42, DB-3-33, DB-3-40, DB-3-50, DB-3-63, DB-2-40 and DB-2-43 may be biased slightly high and are flagged with a 'J'. A fraction of MtBE (up to 5%) converts to Tert-Butanol during the analysis of soil samples. We consider this conversion effect to be mathematically significant in samples that contain MtBE/Tert-Butanol in ratios of over 3:1.

Matrix Spike/Matrix Spike Duplicate Results associated with samples DB-1-37, DB-2-40, DB-2-43, DB-1-10, DB-1-20, DB-1-27, DB-1-43, DB-1-45, DB-1-50, DB-1-57 for the analytes Tert-Butanol, Methyl-t-butyl ether were outside of control limits. This may indicate a bias for the sample that was spiked. Since the LCS recoveries were within control limits, no data are flagged.

Matrix Spike/Matrix Spike Duplicate Results associated with sample DB-4-42 for the analyte Toluene were affected by the analyte concentrations already present in the un-spiked sample.

Matrix Spike/Matrix Spike Duplicate Results associated with samples DB-1-34, DB-1-30, DB-2-45, DB-1-40, DB-1-48, DB-1-52 for the analyte Tert-Butanol were outside of control limits. This may indicate a bias for the sample that was spiked. Since the LCS recoveries were within control limits, no data are flagged.

Matrix Spike/Matrix Spike Duplicate Results associated with samples DB-2-40, DB-1-34, DB-1-30, DB-2-45, DB-2-43, DB-1-40, DB-1-48, DB-1-52 for the analytes Toluene, 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 : 48126

Date : 02/08/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-4@50** Matrix : Water Lab Number : 48126-01

Sample Date :01/25/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2.0**	0.50	ug/L	EPA 8260B	02/01/2006
Toluene	**0.64**	0.50	ug/L	EPA 8260B	02/01/2006
Ethylbenzene	**5.1**	0.50	ug/L	EPA 8260B	02/01/2006
Total Xylenes	**18**	0.50	ug/L	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**510**	2.5	ug/L	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**4.4**	0.50	ug/L	EPA 8260B	02/01/2006
Tert-Butanol	**80**	5.0	ug/L	EPA 8260B	02/01/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	02/01/2006
Ethanol	**10**	5.0	ug/L	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	02/01/2006
TPH as Gasoline	**550**	50	ug/L	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	95.9		% Recovery	EPA 8260B	02/01/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-3@50** Matrix : Water Lab Number : 48126-02
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**400**	10	ug/L	EPA 8260B	01/31/2006
Toluene	**54**	10	ug/L	EPA 8260B	01/31/2006
Ethylbenzene	**860**	10	ug/L	EPA 8260B	01/31/2006
Total Xylenes	**980**	10	ug/L	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**24000**	50	ug/L	EPA 8260B	02/07/2006
Diisopropyl ether (DIPE)	**< 10**	10	ug/L	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 10**	10	ug/L	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**180**	10	ug/L	EPA 8260B	01/31/2006
Tert-Butanol	**2600**	50	ug/L	EPA 8260B	01/31/2006
Methanol	**< 25000**	25000	ug/L	EPA 8260B	01/31/2006
Ethanol	**< 100**	100	ug/L	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 10**	10	ug/L	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 10**	10	ug/L	EPA 8260B	01/31/2006
TPH as Gasoline	**24000**	5000	ug/L	EPA 8260B	02/07/2006
Toluene - d8 (Surr)	94.6		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	01/31/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48126

Date : 02/08/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-2@45** Matrix : Water Lab Number : 48126-03

Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1200**	10	ug/L	EPA 8260B	01/31/2006
Toluene	**420**	10	ug/L	EPA 8260B	01/31/2006
Ethylbenzene	**1800**	10	ug/L	EPA 8260B	01/31/2006
Total Xylenes	**5200**	10	ug/L	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**38000**	90	ug/L	EPA 8260B	02/06/2006
Diisopropyl ether (DIPE)	**< 10**	10	ug/L	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 10**	10	ug/L	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**300**	10	ug/L	EPA 8260B	01/31/2006
Tert-Butanol	**2700**	50	ug/L	EPA 8260B	01/31/2006
Methanol	**< 30000**	30000	ug/L	EPA 8260B	01/31/2006
Ethanol	**< 100**	100	ug/L	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 10**	10	ug/L	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 10**	10	ug/L	EPA 8260B	01/31/2006
TPH as Gasoline	**47000**	1000	ug/L	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	96.9		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	01/31/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-2@55** Matrix : Water Lab Number : 48126-04
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**5200**	10	ug/L	EPA 8260B	01/31/2006
Toluene	**1700**	10	ug/L	EPA 8260B	01/31/2006
Ethylbenzene	**4500**	10	ug/L	EPA 8260B	01/31/2006
Total Xylenes	**15000**	40	ug/L	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**11000**	40	ug/L	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 10**	10	ug/L	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 10**	10	ug/L	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**69**	10	ug/L	EPA 8260B	01/31/2006
Tert-Butanol	**830**	50	ug/L	EPA 8260B	01/31/2006
Methanol	**< 8000**	8000	ug/L	EPA 8260B	01/31/2006
Ethanol	**< 100**	100	ug/L	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 10**	10	ug/L	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 10**	10	ug/L	EPA 8260B	01/31/2006
TPH as Gasoline	**120000**	4000	ug/L	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	88.5		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	107		% Recovery	EPA 8260B	01/31/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-1@50** Matrix : Water Lab Number : 48126-05
Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1400**	10	ug/L	EPA 8260B	01/31/2006
Toluene	**120**	10	ug/L	EPA 8260B	01/31/2006
Ethylbenzene	**3800**	10	ug/L	EPA 8260B	01/31/2006
Total Xylenes	**4100**	25	ug/L	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**3500**	25	ug/L	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 10**	10	ug/L	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 10**	10	ug/L	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**48**	10	ug/L	EPA 8260B	01/31/2006
Tert-Butanol	**120 J**	50	ug/L	EPA 8260B	01/31/2006
Methanol	**< 2000**	2000	ug/L	EPA 8260B	01/31/2006
Ethanol	**< 100**	100	ug/L	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 10**	10	ug/L	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 10**	10	ug/L	EPA 8260B	01/31/2006
TPH as Gasoline	**42000**	2500	ug/L	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	89.7		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	107		% Recovery	EPA 8260B	01/31/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48126

Date : 02/08/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-1@60** Matrix : Water Lab Number : 48126-06

Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1000**	5.0	ug/L	EPA 8260B	02/01/2006
Toluene	**170**	5.0	ug/L	EPA 8260B	02/01/2006
Ethylbenzene	**1100**	5.0	ug/L	EPA 8260B	02/01/2006
Total Xylenes	**860**	5.0	ug/L	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**280**	5.0	ug/L	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 5.0**	5.0	ug/L	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 5.0**	5.0	ug/L	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**15**	5.0	ug/L	EPA 8260B	02/01/2006
Tert-Butanol	**49**	25	ug/L	EPA 8260B	02/01/2006
Methanol	**< 500**	500	ug/L	EPA 8260B	02/01/2006
Ethanol	**< 50**	50	ug/L	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 5.0**	5.0	ug/L	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 5.0**	5.0	ug/L	EPA 8260B	02/01/2006
TPH as Gasoline	**26000**	500	ug/L	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	96.5		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	02/01/2006

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-4-10** Matrix : Soil Lab Number : 48126-07
Sample Date :01/25/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	92.8		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	103		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	99.3		% Recovery	EPA 8260B	02/01/2006

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KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-4-20** Matrix : Soil Lab Number : 48126-08
Sample Date :01/25/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	97.2		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	92.9		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	106		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	106		% Recovery	EPA 8260B	01/31/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-4-30** Matrix : Soil Lab Number : 48126-09
Sample Date :01/25/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.013**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**0.044**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**0.15**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**0.82**	0.050	mg/Kg	EPA 8260B	02/03/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**0.028**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**0.87 J**	0.015	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.25**	0.25	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**5.2**	1.0	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	103		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	92.2		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	102		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	02/01/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-4-32** Matrix : Soil Lab Number : 48126-10
Sample Date :01/25/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**0.0065**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**0.15**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**0.024 J**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	97.4		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	96.9		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	108		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	111		% Recovery	EPA 8260B	01/31/2006

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KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-4-37** Matrix : Soil Lab Number : 48126-11
Sample Date :01/25/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**0.020**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**0.98**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**0.017**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**0.55 J**	0.015	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.25**	0.25	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	93.7		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	101		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	02/01/2006

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KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-4-40** Matrix : Soil Lab Number : 48126-12
Sample Date :01/25/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**0.049**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**0.016**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	97.1		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	94.9		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	108		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	01/31/2006

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-4-42** Matrix : Soil Lab Number : 48126-13
Sample Date :01/25/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene	**0.0063**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**0.044**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**0.24**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**1.0**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**0.015**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**0.44 J**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.80**	0.80	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**20**	1.0	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	93.1		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	105		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	107		% Recovery	EPA 8260B	02/01/2006

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KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-4-50** Matrix : Soil Lab Number : 48126-14
Sample Date :01/25/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**0.028**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	96.6		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	109		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	108		% Recovery	EPA 8260B	01/31/2006

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KIFF Analytical LLC

Report Number : 48126

Date : 02/08/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-4-55** Matrix : Soil Lab Number : 48126-15

Sample Date :01/25/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**0.029**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**0.014**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**0.013**	0.010	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**4.2**	1.0	mg/Kg	EPA 8260B	02/04/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	88.9		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	96.9		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	93.7		% Recovery	EPA 8260B	02/01/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-4-60** Matrix : Soil Lab Number : 48126-16
Sample Date :01/25/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**4.1**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	97.6		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	93.5		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	96.3		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	01/31/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-3-10** Matrix : Soil Lab Number : 48126-17
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**0.0056**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	92.7		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	98.2		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	01/31/2006

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-3-20** Matrix : Soil Lab Number : 48126-18
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**0.018**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	93.7		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	98.8		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	01/31/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-3-30** Matrix : Soil Lab Number : 48126-19
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.0082**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**0.15**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**0.77**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**1.5**	0.025	mg/Kg	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**0.024**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**1.5**	0.015	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 2.5**	2.5	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.025**	0.025	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**23**	2.5	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	94.6		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	98.7		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	90.0		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	96.0		% Recovery	EPA 8260B	01/31/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-3-33** Matrix : Soil Lab Number : 48126-20
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.015**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**0.028**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**0.10**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**0.60**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**2.9**	0.025	mg/Kg	EPA 8260B	02/03/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**0.019**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**0.48 J**	0.015	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 2.0**	2.0	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.025**	0.025	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**13**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	97.1		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	95.9		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	94.8		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	95.3		% Recovery	EPA 8260B	01/31/2006

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Report Number : 48126
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Project Name : **Tesoro - Livermore**
Project Number : **67076**

Sample : **DB-3-37** Matrix : Soil Lab Number : 48126-21
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.026**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene	**0.0062**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethylbenzene	**0.063**	0.050	mg/Kg	EPA 8260B	02/04/2006
Total Xylenes	**0.069**	0.050	mg/Kg	EPA 8260B	02/04/2006
Methyl-t-butyl ether (MTBE)	**1.4**	0.050	mg/Kg	EPA 8260B	02/04/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-amyl methyl ether (TAME)	**0.017**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-Butanol	**0.58**	0.25	mg/Kg	EPA 8260B	02/04/2006
Methanol	**< 0.30**	0.30	mg/Kg	EPA 8260B	02/03/2006
Ethanol	**< 0.030**	0.030	mg/Kg	EPA 8260B	02/03/2006
TPH as Gasoline	**56**	5.0	mg/Kg	EPA 8260B	02/04/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene - d8 (Surr)	92.6		% Recovery	EPA 8260B	02/03/2006
4-Bromofluorobenzene (Surr)	91.8		% Recovery	EPA 8260B	02/03/2006
Dibromofluoromethane (Surr)	94.5		% Recovery	EPA 8260B	02/03/2006
1,2-Dichloroethane-d4 (Surr)	86.0		% Recovery	EPA 8260B	02/03/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-3-40** Matrix : Soil Lab Number : 48126-22
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**0.041**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**0.012**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**0.62**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**0.092 J**	0.015	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.25**	0.25	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**19**	1.0	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	89.9		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	97.0		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	95.9		% Recovery	EPA 8260B	02/01/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-3-42** Matrix : Soil Lab Number : 48126-23
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethylbenzene	**0.13**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Total Xylenes	**0.41**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	**1.1**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-amyl methyl ether (TAME)	**0.011**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-Butanol	**1.7**	0.015	mg/Kg	EPA 8260B	02/03/2006
Methanol	**< 1.0**	1.0	mg/Kg	EPA 8260B	02/03/2006
Ethanol	**< 0.050**	0.050	mg/Kg	EPA 8260B	02/03/2006
TPH as Gasoline	**3.4**	1.0	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene - d8 (Surr)	97.9		% Recovery	EPA 8260B	02/03/2006
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	02/03/2006
Dibromofluoromethane (Surr)	97.2		% Recovery	EPA 8260B	02/03/2006
1,2-Dichloroethane-d4 (Surr)	96.4		% Recovery	EPA 8260B	02/03/2006

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Report Number : 48126
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Project Name : **Tesoro - Livermore**
Project Number : **67076**

Sample : **DB-3-45** Matrix : Soil Lab Number : 48126-24
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethylbenzene	**0.012**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Total Xylenes	**0.011**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	**0.16**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-Butanol	**0.10**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	02/03/2006
Ethanol	**< 0.020**	0.020	mg/Kg	EPA 8260B	02/03/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene - d8 (Surr)	90.1		% Recovery	EPA 8260B	02/03/2006
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	02/03/2006
Dibromofluoromethane (Surr)	90.3		% Recovery	EPA 8260B	02/03/2006
1,2-Dichloroethane-d4 (Surr)	89.8		% Recovery	EPA 8260B	02/03/2006

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

Sample : **DB-3-50** Matrix : Soil Lab Number : 48126-25
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**0.088**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**0.015 J**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	93.2		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	98.8		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	01/31/2006

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

Sample : **DB-3-55** Matrix : Soil Lab Number : 48126-26
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.0094**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**0.060**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**0.015**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**0.032**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**< 0.015**	0.015	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.25**	0.25	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**12**	1.0	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	97.0		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	93.0		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	93.6		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	94.3		% Recovery	EPA 8260B	02/01/2006

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Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-3-58** Matrix : Soil Lab Number : 48126-27

Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	**0.014**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-Butanol	**0.0055**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	02/03/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	02/03/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	02/03/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene - d8 (Surr)	98.3		% Recovery	EPA 8260B	02/03/2006
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	02/03/2006
Dibromofluoromethane (Surr)	97.4		% Recovery	EPA 8260B	02/03/2006
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	02/03/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-3-63** Matrix : Soil Lab Number : 48126-28
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.011**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene	**0.0054**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethylbenzene	**0.088**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Total Xylenes	**0.15**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	**1.1**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-amyl methyl ether (TAME)	**0.0064**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-Butanol	**0.30 J**	0.025	mg/Kg	EPA 8260B	02/03/2006
Methanol	**< 0.50**	0.50	mg/Kg	EPA 8260B	02/03/2006
Ethanol	**< 0.050**	0.050	mg/Kg	EPA 8260B	02/03/2006
TPH as Gasoline	**38**	2.5	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	02/03/2006
4-Bromofluorobenzene (Surr)	90.4		% Recovery	EPA 8260B	02/03/2006
Dibromofluoromethane (Surr)	102		% Recovery	EPA 8260B	02/03/2006
1,2-Dichloroethane-d4 (Surr)	91.9		% Recovery	EPA 8260B	02/03/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-3-66** Matrix : Soil Lab Number : 48126-29
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.032**	0.025	mg/Kg	EPA 8260B	02/01/2006
Toluene	**0.032**	0.025	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**0.66**	0.025	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**0.91**	0.025	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**0.37**	0.025	mg/Kg	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**< 0.15**	0.15	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 2.5**	2.5	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.25**	0.25	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**120**	2.5	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	93.5		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	97.4		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	93.9		% Recovery	EPA 8260B	02/01/2006

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Report Number : 48126

Date : 02/08/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-2-10** Matrix : Soil Lab Number : 48126-30

Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	93.8		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	99.8		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	01/31/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-2-20** Matrix : Soil Lab Number : 48126-31
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	93.6		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	102		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	02/01/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-2-30** Matrix : Soil Lab Number : 48126-32
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/07/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/07/2006
Ethylbenzene	**0.10**	0.025	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**0.19**	0.025	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**0.37**	0.025	mg/Kg	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/07/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/07/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/07/2006
Tert-Butanol	**0.20**	0.15	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	02/07/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	02/07/2006
TPH as Gasoline	**31**	2.5	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/07/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/07/2006
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	94.4		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	102		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	98.4		% Recovery	EPA 8260B	02/01/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-2-32** Matrix : Soil Lab Number : 48126-33
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**0.24**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**0.59**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	97.7		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	92.8		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	106		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	99.3		% Recovery	EPA 8260B	01/31/2006

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KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-2-36** Matrix : Soil Lab Number : 48126-34
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	92.3		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	99.2		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	01/31/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-2-40** Matrix : Soil Lab Number : 48126-35
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.0074**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**0.044**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**0.014**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**0.74**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**0.0052**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**0.11 J**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.050**	0.050	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**2.6**	1.0	mg/Kg	EPA 8260B	02/02/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	94.0		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	94.9		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	91.8		% Recovery	EPA 8260B	02/01/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-2-43** Matrix : Soil Lab Number : 48126-36
Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.13**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene	**0.055**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**0.40**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**0.41**	0.025	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	**1.7**	0.025	mg/Kg	EPA 8260B	02/03/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**0.029**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**0.60 J**	0.015	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.80**	0.80	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**20**	1.0	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	96.6		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	94.8		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	93.4		% Recovery	EPA 8260B	02/01/2006

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Report Number : 48126
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Project Name : **Tesoro - Livermore**
Project Number : **67076**

Sample : **DB-1-10** Matrix : Soil Lab Number : 48126-37
Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	100		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	02/01/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-1-20** Matrix : Soil Lab Number : 48126-38
Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	02/01/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	02/01/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	98.7		% Recovery	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	02/01/2006
Dibromofluoromethane (Surr)	100		% Recovery	EPA 8260B	02/01/2006
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	02/01/2006

Approved By: Joel Kiff

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KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-1-27** Matrix : Soil Lab Number : 48126-39
Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	02/02/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	02/02/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	02/02/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	02/02/2006
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	02/02/2006
Dibromofluoromethane (Surr)	98.9		% Recovery	EPA 8260B	02/02/2006
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	02/02/2006

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KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-1-30** Matrix : Soil Lab Number : 48126-40
Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	02/03/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	02/03/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	02/03/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	02/03/2006
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	02/03/2006
Dibromofluoromethane (Surr)	99.0		% Recovery	EPA 8260B	02/03/2006
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	02/03/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-1-34** Matrix : Soil Lab Number : 48126-41
Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-Butanol	**0.0077**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	02/03/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	02/03/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	02/03/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	02/03/2006
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	02/03/2006
Dibromofluoromethane (Surr)	98.4		% Recovery	EPA 8260B	02/03/2006
1,2-Dichloroethane-d4 (Surr)	96.0		% Recovery	EPA 8260B	02/03/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-1-37** Matrix : Soil Lab Number : 48126-42
Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	**0.017**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	**0.023**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	97.1		% Recovery	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	95.7		% Recovery	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	106		% Recovery	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	107		% Recovery	EPA 8260B	01/31/2006

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KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-1-40** Matrix : Soil Lab Number : 48126-43
Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethylbenzene	**0.0073**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-Butanol	**< 0.015**	0.015	mg/Kg	EPA 8260B	02/03/2006
Methanol	**< 0.25**	0.25	mg/Kg	EPA 8260B	02/03/2006
Ethanol	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/03/2006
TPH as Gasoline	**18**	1.0	mg/Kg	EPA 8260B	02/03/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene - d8 (Surr)	97.3		% Recovery	EPA 8260B	02/03/2006
4-Bromofluorobenzene (Surr)	95.5		% Recovery	EPA 8260B	02/03/2006
Dibromofluoromethane (Surr)	98.6		% Recovery	EPA 8260B	02/03/2006
1,2-Dichloroethane-d4 (Surr)	98.1		% Recovery	EPA 8260B	02/03/2006

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KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-1-43** Matrix : Soil Lab Number : 48126-44
Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.027**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethylbenzene	**0.71**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Total Xylenes	**1.0**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Methyl-t-butyl ether (MTBE)	**0.080**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-Butanol	**0.050**	0.025	mg/Kg	EPA 8260B	02/02/2006
Methanol	**< 0.50**	0.50	mg/Kg	EPA 8260B	02/02/2006
Ethanol	**< 0.050**	0.050	mg/Kg	EPA 8260B	02/02/2006
TPH as Gasoline	**100**	5.0	mg/Kg	EPA 8260B	02/03/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene - d8 (Surr)	94.0		% Recovery	EPA 8260B	02/02/2006
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	02/02/2006
Dibromofluoromethane (Surr)	92.9		% Recovery	EPA 8260B	02/02/2006
1,2-Dichloroethane-d4 (Surr)	91.4		% Recovery	EPA 8260B	02/02/2006

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KIFF Analytical LLC

Report Number : 48126

Date : 02/08/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-1-45** Matrix : Soil Lab Number : 48126-45

Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.18**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene	**0.067**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethylbenzene	**2.5**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Total Xylenes	**5.8**	0.15	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	**0.046**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-Butanol	**0.030**	0.025	mg/Kg	EPA 8260B	02/02/2006
Methanol	**< 0.50**	0.50	mg/Kg	EPA 8260B	02/02/2006
Ethanol	**< 0.10**	0.10	mg/Kg	EPA 8260B	02/02/2006
TPH as Gasoline	**81**	15	mg/Kg	EPA 8260B	02/03/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene - d8 (Surr)	82.2		% Recovery	EPA 8260B	02/02/2006
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	02/02/2006
Dibromofluoromethane (Surr)	81.9		% Recovery	EPA 8260B	02/02/2006
1,2-Dichloroethane-d4 (Surr)	82.9		% Recovery	EPA 8260B	02/02/2006

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Report Number : 48126

Date : 02/08/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-1-48** Matrix : Soil Lab Number : 48126-46

Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**3.1**	0.025	mg/Kg	EPA 8260B	02/06/2006
Toluene	**0.17**	0.025	mg/Kg	EPA 8260B	02/06/2006
Ethylbenzene	**4.8**	0.025	mg/Kg	EPA 8260B	02/06/2006
Total Xylenes	**22**	0.025	mg/Kg	EPA 8260B	02/06/2006
Methyl-t-butyl ether (MTBE)	**0.052**	0.025	mg/Kg	EPA 8260B	02/06/2006
Diisopropyl ether (DIPE)	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/06/2006
Ethyl-t-butyl ether (ETBE)	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/06/2006
Tert-amyl methyl ether (TAME)	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/06/2006
Tert-Butanol	**< 0.15**	0.15	mg/Kg	EPA 8260B	02/06/2006
Methanol	**< 2.5**	2.5	mg/Kg	EPA 8260B	02/06/2006
Ethanol	**< 0.50**	0.50	mg/Kg	EPA 8260B	02/06/2006
TPH as Gasoline	**140**	50	mg/Kg	EPA 8260B	02/03/2006
1,2-Dichloroethane	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/06/2006
1,2-Dibromoethane	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/06/2006
Toluene - d8 (Surr)	90.0		% Recovery	EPA 8260B	02/06/2006
4-Bromofluorobenzene (Surr)	93.8		% Recovery	EPA 8260B	02/06/2006
Dibromofluoromethane (Surr)	92.7		% Recovery	EPA 8260B	02/06/2006
1,2-Dichloroethane-d4 (Surr)	91.2		% Recovery	EPA 8260B	02/06/2006

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Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-1-50** Matrix : Soil Lab Number : 48126-47
Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.36**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene	**0.011**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethylbenzene	**0.24**	0.025	mg/Kg	EPA 8260B	02/03/2006
Total Xylenes	**0.23**	0.025	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	**0.050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-Butanol	**< 0.015**	0.015	mg/Kg	EPA 8260B	02/02/2006
Methanol	**< 0.25**	0.25	mg/Kg	EPA 8260B	02/02/2006
Ethanol	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/02/2006
TPH as Gasoline	**12**	2.5	mg/Kg	EPA 8260B	02/03/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene - d8 (Surr)	87.9		% Recovery	EPA 8260B	02/02/2006
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	02/02/2006
Dibromofluoromethane (Surr)	88.4		% Recovery	EPA 8260B	02/02/2006
1,2-Dichloroethane-d4 (Surr)	90.0		% Recovery	EPA 8260B	02/02/2006

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Report Number : 48126

Date : 02/08/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-1-52** Matrix : Soil Lab Number : 48126-48

Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.056**	0.025	mg/Kg	EPA 8260B	02/06/2006
Toluene	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/06/2006
Ethylbenzene	**0.44**	0.025	mg/Kg	EPA 8260B	02/06/2006
Total Xylenes	**0.56**	0.025	mg/Kg	EPA 8260B	02/06/2006
Methyl-t-butyl ether (MTBE)	**0.11**	0.025	mg/Kg	EPA 8260B	02/06/2006
Diisopropyl ether (DIPE)	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/06/2006
Ethyl-t-butyl ether (ETBE)	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/06/2006
Tert-amyl methyl ether (TAME)	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/06/2006
Tert-Butanol	**< 0.15**	0.15	mg/Kg	EPA 8260B	02/06/2006
Methanol	**< 2.5**	2.5	mg/Kg	EPA 8260B	02/06/2006
Ethanol	**< 0.25**	0.25	mg/Kg	EPA 8260B	02/06/2006
TPH as Gasoline	**68**	2.5	mg/Kg	EPA 8260B	02/06/2006
1,2-Dichloroethane	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/06/2006
1,2-Dibromoethane	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/06/2006
Toluene - d8 (Surr)	97.2		% Recovery	EPA 8260B	02/06/2006
4-Bromofluorobenzene (Surr)	95.7		% Recovery	EPA 8260B	02/06/2006
Dibromofluoromethane (Surr)	100		% Recovery	EPA 8260B	02/06/2006
1,2-Dichloroethane-d4 (Surr)	96.6		% Recovery	EPA 8260B	02/06/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48126
Date : 02/08/2006

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

Sample : **DB-1-57** Matrix : Soil Lab Number : 48126-49
Sample Date :01/27/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.0099**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethylbenzene	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/03/2006
Total Xylenes	**0.034**	0.025	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	**0.021**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-Butanol	**< 0.025**	0.025	mg/Kg	EPA 8260B	02/02/2006
Methanol	**< 0.50**	0.50	mg/Kg	EPA 8260B	02/02/2006
Ethanol	**< 0.050**	0.050	mg/Kg	EPA 8260B	02/02/2006
TPH as Gasoline	**9.6**	2.5	mg/Kg	EPA 8260B	02/03/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene - d8 (Surr)	96.3		% Recovery	EPA 8260B	02/02/2006
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	02/02/2006
Dibromofluoromethane (Surr)	93.1		% Recovery	EPA 8260B	02/02/2006
1,2-Dichloroethane-d4 (Surr)	97.7		% Recovery	EPA 8260B	02/02/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48126

Date : 02/08/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-2-45** Matrix : Soil Lab Number : 48126-50

Sample Date :01/26/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.012**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene	**0.0072**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethylbenzene	**0.059**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Total Xylenes	**0.21**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	**1.2**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-amyl methyl ether (TAME)	**0.010**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-Butanol	**0.53**	0.015	mg/Kg	EPA 8260B	02/03/2006
Methanol	**< 0.50**	0.50	mg/Kg	EPA 8260B	02/03/2006
Ethanol	**< 0.080**	0.080	mg/Kg	EPA 8260B	02/03/2006
TPH as Gasoline	**9.9**	1.0	mg/Kg	EPA 8260B	02/03/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	02/03/2006
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	02/03/2006
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	02/03/2006
Dibromofluoromethane (Surr)	97.3		% Recovery	EPA 8260B	02/03/2006
1,2-Dichloroethane-d4 (Surr)	108		% Recovery	EPA 8260B	02/03/2006

Approved By: Joel Kiff

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

Report Number : 48126

Date : 02/08/2006

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/30/2006
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/30/2006
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/30/2006
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/30/2006
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/30/2006
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/30/2006
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/30/2006
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/30/2006
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/30/2006
Methanol	< 0.20	0.20	mg/Kg	EPA 8260B	01/30/2006
Ethanol	< 0.010	0.010	mg/Kg	EPA 8260B	01/30/2006
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	01/30/2006
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/30/2006
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/30/2006
Toluene - d8 (Surr)	96.9		%	EPA 8260B	01/30/2006
4-Bromofluorobenzene (Surr)	93.7		%	EPA 8260B	01/30/2006
Dibromofluoromethane (Surr)	108		%	EPA 8260B	01/30/2006
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	01/30/2006
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	< 0.20	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	< 0.010	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Toluene - d8 (Surr)	99.1		%	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	93.3		%	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	99.6		%	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	101		%	EPA 8260B	01/31/2006
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	< 0.20	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	< 0.010	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	97.0		%	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	94.9		%	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	107		%	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	106		%	EPA 8260B	01/31/2006

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48126

Date : 02/08/2006

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Methanol	< 0.20	0.20	mg/Kg	EPA 8260B	01/31/2006
Ethanol	< 0.010	0.010	mg/Kg	EPA 8260B	01/31/2006
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	01/31/2006
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/31/2006
Toluene - d8 (Surr)	95.5		%	EPA 8260B	01/31/2006
4-Bromofluorobenzene (Surr)	96.7		%	EPA 8260B	01/31/2006
Dibromofluoromethane (Surr)	109		%	EPA 8260B	01/31/2006
1,2-Dichloroethane-d4 (Surr)	107		%	EPA 8260B	01/31/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Methanol	< 0.20	0.20	mg/Kg	EPA 8260B	02/02/2006
Ethanol	< 0.010	0.010	mg/Kg	EPA 8260B	02/02/2006
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	02/02/2006
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene - d8 (Surr)	101		%	EPA 8260B	02/02/2006
4-Bromofluorobenzene (Surr)	95.6		%	EPA 8260B	02/02/2006
Dibromofluoromethane (Surr)	104		%	EPA 8260B	02/02/2006
1,2-Dichloroethane-d4 (Surr)	106		%	EPA 8260B	02/02/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/01/2006
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/01/2006
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/01/2006
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/01/2006
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	02/01/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/03/2006
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/03/2006
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/03/2006
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/03/2006
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/03/2006
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	02/03/2006

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48126

Date : 02/08/2006

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Methanol	< 0.20	0.20	mg/Kg	EPA 8260B	02/02/2006
Ethanol	< 0.010	0.010	mg/Kg	EPA 8260B	02/02/2006
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	02/02/2006
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/02/2006
Toluene - d8 (Surr)	100		%	EPA 8260B	02/02/2006
4-Bromofluorobenzene (Surr)	94.3		%	EPA 8260B	02/02/2006
Dibromofluoromethane (Surr)	108		%	EPA 8260B	02/02/2006
1,2-Dichloroethane-d4 (Surr)	106		%	EPA 8260B	02/02/2006
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/06/2006
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/06/2006
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/06/2006
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/06/2006
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/06/2006
Methanol	< 0.20	0.20	mg/Kg	EPA 8260B	02/06/2006
Ethanol	< 0.010	0.010	mg/Kg	EPA 8260B	02/06/2006
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/06/2006
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	02/06/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	01/30/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	01/30/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	01/30/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	01/30/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	01/30/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	01/30/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	01/30/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	01/30/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	01/30/2006
Methanol	< 50	50	ug/L	EPA 8260B	01/30/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	01/30/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	01/30/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	01/30/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	01/30/2006
Toluene - d8 (Surr)	98.5		%	EPA 8260B	01/30/2006
4-Bromofluorobenzene (Surr)	105		%	EPA 8260B	01/30/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/06/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/07/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/07/2006

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48126

Date : 02/08/2006

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	01/31/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	01/31/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	01/31/2006
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/01/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/01/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/01/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/01/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/01/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/01/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/01/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/01/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/01/2006
Methanol	< 50	50	ug/L	EPA 8260B	02/01/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/01/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/01/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/01/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/01/2006
Toluene - d8 (Surr)	96.9		%	EPA 8260B	02/01/2006
4-Bromofluorobenzene (Surr)	103		%	EPA 8260B	02/01/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48126

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 02/08/2006

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	48119-02	<0.0050	0.0388	0.0393	0.0380	0.0390	mg/Kg	EPA 8260B	1/30/06	98.1	99.4	1.28	70-130	25
Toluene	48119-02	<0.0050	0.0388	0.0393	0.0349	0.0361	mg/Kg	EPA 8260B	1/30/06	90.1	92.0	2.07	70-130	25
Tert-Butanol	48119-02	<0.0050	0.194	0.196	0.183	0.188	mg/Kg	EPA 8260B	1/30/06	94.3	95.7	1.42	70-130	25
Methyl-t-Butyl Ether	48119-02	<0.0050	0.0388	0.0393	0.0384	0.0402	mg/Kg	EPA 8260B	1/30/06	99.1	102	3.21	70-130	25
Benzene	48126-30	<0.0050	0.0396	0.0399	0.0425	0.0416	mg/Kg	EPA 8260B	1/31/06	107	104	3.07	70-130	25
Toluene	48126-30	<0.0050	0.0396	0.0399	0.0402	0.0388	mg/Kg	EPA 8260B	1/31/06	101	97.1	4.38	70-130	25
Tert-Butanol	48126-30	<0.0050	0.198	0.200	0.190	0.178	mg/Kg	EPA 8260B	1/31/06	96.0	89.3	7.20	70-130	25
Methyl-t-Butyl Ether	48126-30	<0.0050	0.0396	0.0399	0.0362	0.0358	mg/Kg	EPA 8260B	1/31/06	91.4	89.6	1.95	70-130	25
Benzene	48126-42	<0.0050	0.0397	0.0394	0.0319	0.0350	mg/Kg	EPA 8260B	1/31/06	80.4	88.9	10.0	70-130	25
Toluene	48126-42	<0.0050	0.0397	0.0394	0.0295	0.0317	mg/Kg	EPA 8260B	1/31/06	74.3	80.5	7.98	70-130	25
Tert-Butanol	48126-42	0.023	0.198	0.197	0.154	0.173	mg/Kg	EPA 8260B	1/31/06	65.9	76.2	14.4	70-130	25
Methyl-t-Butyl Ether	48126-42	0.017	0.0397	0.0394	0.0416	0.0429	mg/Kg	EPA 8260B	1/31/06	62.7	66.6	6.12	70-130	25
Benzene	48131-01	<0.0050	0.0371	0.0374	0.0374	0.0374	mg/Kg	EPA 8260B	1/31/06	101	99.8	0.984	70-130	25
Toluene	48131-01	<0.0050	0.0371	0.0374	0.0343	0.0341	mg/Kg	EPA 8260B	1/31/06	92.5	91.1	1.58	70-130	25
Tert-Butanol	48131-01	<0.0050	0.186	0.187	0.186	0.179	mg/Kg	EPA 8260B	1/31/06	100	95.6	4.70	70-130	25
Methyl-t-Butyl Ether	48131-01	<0.0050	0.0371	0.0374	0.0389	0.0388	mg/Kg	EPA 8260B	1/31/06	105	104	1.16	70-130	25
Benzene	48105-06	<0.0050	0.0384	0.0397	0.0388	0.0390	mg/Kg	EPA 8260B	2/1/06	101	98.4	2.77	70-130	25
Toluene	48105-06	0.046	0.0384	0.0397	0.0670	0.0682	mg/Kg	EPA 8260B	2/1/06	53.8	55.0	2.19	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48126

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 02/08/2006

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	48105-06	0.016	0.192	0.198	0.189	0.194	mg/Kg	EPA 8260B	2/1/06	90.4	90.0	0.466	70-130	25
Methyl-t-Butyl Ether	48105-06	0.0099	0.0384	0.0397	0.0442	0.0444	mg/Kg	EPA 8260B	2/1/06	89.4	87.0	2.75	70-130	25
Benzene	48131-04	<0.0050	0.0366	0.0366	0.0372	0.0372	mg/Kg	EPA 8260B	2/2/06	102	102	0.130	70-130	25
Toluene	48131-04	<0.0050	0.0366	0.0366	0.0357	0.0361	mg/Kg	EPA 8260B	2/2/06	97.4	98.6	1.16	70-130	25
Tert-Butanol	48131-04	0.28	0.183	0.183	0.497	0.492	mg/Kg	EPA 8260B	2/2/06	116	113	2.39	70-130	25
Methyl-t-Butyl Ether	48131-04	0.011	0.0366	0.0366	0.0483	0.0479	mg/Kg	EPA 8260B	2/2/06	103	102	1.01	70-130	25
Benzene	48157-06	<0.0050	0.0388	0.0368	0.0370	0.0360	mg/Kg	EPA 8260B	2/3/06	95.4	98.1	2.73	70-130	25
Toluene	48157-06	<0.0050	0.0388	0.0368	0.0364	0.0350	mg/Kg	EPA 8260B	2/3/06	93.8	95.2	1.43	70-130	25
Tert-Butanol	48157-06	<0.0050	0.194	0.184	0.185	0.175	mg/Kg	EPA 8260B	2/3/06	95.4	95.0	0.391	70-130	25
Methyl-t-Butyl Ether	48157-06	<0.0050	0.0388	0.0368	0.0415	0.0392	mg/Kg	EPA 8260B	2/3/06	107	107	0.323	70-130	25
Benzene	48131-20	<0.0050	0.0394	0.0398	0.0358	0.0371	mg/Kg	EPA 8260B	2/2/06	90.9	93.4	2.69	70-130	25
Toluene	48131-20	0.024	0.0394	0.0398	0.0446	0.0432	mg/Kg	EPA 8260B	2/2/06	53.7	49.4	8.18	70-130	25
Tert-Butanol	48131-20	0.094	0.197	0.199	0.231	0.242	mg/Kg	EPA 8260B	2/2/06	69.5	74.7	7.16	70-130	25
Methyl-t-Butyl Ether	48131-20	0.17	0.0394	0.0398	0.116	0.102	mg/Kg	EPA 8260B	2/2/06	0.00	0.00	0.00	70-130	25
Benzene	48240-14	<0.0050	0.0398	0.0398	0.0387	0.0392	mg/Kg	EPA 8260B	2/7/06	97.2	98.3	1.15	70-130	25
Toluene	48240-14	<0.0050	0.0398	0.0398	0.0361	0.0370	mg/Kg	EPA 8260B	2/7/06	90.6	92.8	2.36	70-130	25
Tert-Butanol	48240-14	<0.0050	0.199	0.199	0.180	0.184	mg/Kg	EPA 8260B	2/7/06	90.3	92.3	2.21	70-130	25
Methyl-t-Butyl Ether	48240-14	<0.0050	0.0398	0.0398	0.0414	0.0418	mg/Kg	EPA 8260B	2/7/06	104	105	0.927	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48126

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 02/08/2006

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	48124-08	<0.50	40.0	40.0	43.0	41.4	ug/L	EPA 8260B	1/31/06	108	103	3.86	70-130	25
Toluene	48124-08	<0.50	40.0	40.0	38.8	37.1	ug/L	EPA 8260B	1/31/06	96.9	92.8	4.27	70-130	25
Tert-Butanol	48124-08	<5.0	200	200	224	214	ug/L	EPA 8260B	1/31/06	112	107	4.51	70-130	25
Methyl-t-Butyl Ether	48124-08	<0.50	40.0	40.0	44.0	42.0	ug/L	EPA 8260B	1/31/06	110	105	4.45	70-130	25
Benzene	48237-05	<0.50	40.0	40.0	41.5	40.5	ug/L	EPA 8260B	2/6/06	104	101	2.59	70-130	25
Toluene	48237-05	<0.50	40.0	40.0	38.4	37.6	ug/L	EPA 8260B	2/6/06	95.9	94.0	2.08	70-130	25
Tert-Butanol	48237-05	<5.0	200	200	206	207	ug/L	EPA 8260B	2/6/06	103	104	0.225	70-130	25
Methyl-t-Butyl Ether	48237-05	<0.50	40.0	40.0	39.3	39.1	ug/L	EPA 8260B	2/6/06	98.2	97.7	0.448	70-130	25
Benzene	48245-31	4.5	40.0	40.0	46.1	44.0	ug/L	EPA 8260B	2/7/06	104	98.9	5.03	70-130	25
Toluene	48245-31	4.6	40.0	40.0	42.5	41.5	ug/L	EPA 8260B	2/7/06	94.8	92.2	2.77	70-130	25
Tert-Butanol	48245-31	<5.0	200	200	225	212	ug/L	EPA 8260B	2/7/06	113	106	5.96	70-130	25
Methyl-t-Butyl Ether	48245-31	0.82	40.0	40.0	41.3	40.5	ug/L	EPA 8260B	2/7/06	101	99.3	2.01	70-130	25
Benzene	48140-06	<0.50	40.0	40.0	39.7	39.5	ug/L	EPA 8260B	1/31/06	99.3	98.7	0.603	70-130	25
Toluene	48140-06	<0.50	40.0	40.0	39.5	39.8	ug/L	EPA 8260B	1/31/06	98.7	99.4	0.778	70-130	25
Tert-Butanol	48140-06	<5.0	200	200	199	203	ug/L	EPA 8260B	1/31/06	99.7	102	1.88	70-130	25
Methyl-t-Butyl Ether	48140-06	1.2	40.0	40.0	39.5	39.9	ug/L	EPA 8260B	1/31/06	95.8	97.0	1.18	70-130	25
Benzene	48159-06	<0.50	40.0	40.0	38.3	37.2	ug/L	EPA 8260B	2/1/06	95.7	93.0	2.88	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48126

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 02/08/2006

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
Toluene	48159-06	<0.50	40.0	40.0	37.9	37.1	ug/L	EPA 8260B	2/1/06	94.6	92.7	2.12	70-130	25
Tert-Butanol	48159-06	<5.0	200	200	188	194	ug/L	EPA 8260B	2/1/06	93.8	97.2	3.57	70-130	25
Methyl-t-Butyl Ether	48159-06	<0.50	40.0	40.0	38.2	37.8	ug/L	EPA 8260B	2/1/06	95.4	94.6	0.913	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48126

QC Report : Laboratory Control Sample (LCS)

Date : 02/08/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	0.0398	mg/Kg	EPA 8260B	1/30/06	99.5	70-130
Toluene	0.0398	mg/Kg	EPA 8260B	1/30/06	91.1	70-130
Tert-Butanol	0.199	mg/Kg	EPA 8260B	1/30/06	93.7	70-130
Methyl-t-Butyl Ether	0.0398	mg/Kg	EPA 8260B	1/30/06	102	70-130
Benzene	0.0400	mg/Kg	EPA 8260B	1/31/06	106	70-130
Toluene	0.0400	mg/Kg	EPA 8260B	1/31/06	99.3	70-130
Tert-Butanol	0.200	mg/Kg	EPA 8260B	1/31/06	94.9	70-130
Methyl-t-Butyl Ether	0.0400	mg/Kg	EPA 8260B	1/31/06	90.8	70-130
Benzene	0.0383	mg/Kg	EPA 8260B	1/31/06	98.0	70-130
Toluene	0.0383	mg/Kg	EPA 8260B	1/31/06	91.0	70-130
Tert-Butanol	0.192	mg/Kg	EPA 8260B	1/31/06	94.1	70-130
Methyl-t-Butyl Ether	0.0383	mg/Kg	EPA 8260B	1/31/06	104	70-130
Benzene	0.0366	mg/Kg	EPA 8260B	1/31/06	97.9	70-130
Toluene	0.0366	mg/Kg	EPA 8260B	1/31/06	91.1	70-130
Tert-Butanol	0.183	mg/Kg	EPA 8260B	1/31/06	102	70-130
Methyl-t-Butyl Ether	0.0366	mg/Kg	EPA 8260B	1/31/06	97.8	70-130
Benzene	0.0384	mg/Kg	EPA 8260B	2/1/06	95.0	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48126

QC Report : Laboratory Control Sample (LCS)

Date : 02/08/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Toluene	0.0384	mg/Kg	EPA 8260B	2/1/06	94.8	70-130
Tert-Butanol	0.192	mg/Kg	EPA 8260B	2/1/06	87.5	70-130
Methyl-t-Butyl Ether	0.0384	mg/Kg	EPA 8260B	2/1/06	92.2	70-130
Benzene	0.0391	mg/Kg	EPA 8260B	2/2/06	99.0	70-130
Toluene	0.0391	mg/Kg	EPA 8260B	2/2/06	95.6	70-130
Tert-Butanol	0.195	mg/Kg	EPA 8260B	2/2/06	91.9	70-130
Methyl-t-Butyl Ether	0.0391	mg/Kg	EPA 8260B	2/2/06	109	70-130
Benzene	0.0385	mg/Kg	EPA 8260B	2/3/06	99.2	70-130
Toluene	0.0385	mg/Kg	EPA 8260B	2/3/06	94.7	70-130
Tert-Butanol	0.192	mg/Kg	EPA 8260B	2/3/06	91.5	70-130
Methyl-t-Butyl Ether	0.0385	mg/Kg	EPA 8260B	2/3/06	105	70-130
Benzene	0.0394	mg/Kg	EPA 8260B	2/2/06	96.5	70-130
Toluene	0.0394	mg/Kg	EPA 8260B	2/2/06	93.1	70-130
Tert-Butanol	0.197	mg/Kg	EPA 8260B	2/2/06	90.9	70-130
Methyl-t-Butyl Ether	0.0394	mg/Kg	EPA 8260B	2/2/06	104	70-130
Benzene	0.0399	mg/Kg	EPA 8260B	2/6/06	97.8	70-130
Toluene	0.0399	mg/Kg	EPA 8260B	2/6/06	94.4	70-130
Tert-Butanol	0.200	mg/Kg	EPA 8260B	2/6/06	92.5	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48126

QC Report : Laboratory Control Sample (LCS)

Date : 02/08/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Methyl-t-Butyl Ether	0.0399	mg/Kg	EPA 8260B	2/6/06	109	70-130
Benzene	40.0	ug/L	EPA 8260B	1/30/06	105	70-130
Toluene	40.0	ug/L	EPA 8260B	1/30/06	97.5	70-130
Tert-Butanol	200	ug/L	EPA 8260B	1/30/06	108	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	1/30/06	106	70-130
Benzene	40.0	ug/L	EPA 8260B	2/6/06	99.5	70-130
Toluene	40.0	ug/L	EPA 8260B	2/6/06	96.4	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/6/06	105	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/6/06	99.5	70-130
Benzene	40.0	ug/L	EPA 8260B	2/7/06	96.4	70-130
Toluene	40.0	ug/L	EPA 8260B	2/7/06	94.0	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/7/06	102	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/7/06	94.3	70-130
Benzene	40.0	ug/L	EPA 8260B	1/31/06	99.5	70-130
Toluene	40.0	ug/L	EPA 8260B	1/31/06	99.7	70-130
Tert-Butanol	200	ug/L	EPA 8260B	1/31/06	94.6	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	1/31/06	97.7	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48126

QC Report : Laboratory Control Sample (LCS)

Date : 02/08/2006

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	2/1/06	93.2	70-130
Toluene	40.0	ug/L	EPA 8260B	2/1/06	96.2	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/1/06	96.6	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/1/06	97.2	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. 48126

Page 1 of 6

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:

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

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: SLEEVE	Container: POLY	Container: AMBER	Container: TEDLAR	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	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. ☐	For Lab Use Only
DB-4@50	1/25/06	1040	3					X				X							X				X	X				-01
DB-3@50	1/26/06	0950	↓					↓				↓							↓				↓	↓				-02
DB-2@45	1/26/06	1520	↓					↓				↓							↓				↓	↓				-03
DB-2@55	1/26/06	1540	↓					↓				↓							↓				↓	↓				-04
DB-1@50	1/27/06	0940	↓					↓				↓							↓				↓	↓				-05
DB-1@60	1/27/06	1310	↓					↓				↓							↓				↓	↓				-06

Relinquished by:	Date	Time	Received by:
[signature]	1/27/06	1645	[signature]
[signature]	Date	Time	Received by:
[signature]	Date	Time	Received by Laboratory:
	012706	1645	Osama Abdalla / Analyst

Remarks:

Sample Receipt
Temp °C 3.3 Therm. ID# IR-1
Initial OA Date 01/27/06
Time 1945 Coolant present: Y N

Bill to: Tesoro Petroleum Companies, Inc.

Kiff ECOC 011204

KIFF ANALYTICAL LLC

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

Lab No. 48126

Page 2 of 6

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:

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

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: SLEEVE	Container: POLY	Container: AMBER	Container: TEDLAR	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	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. ☐	For Lab Use Only
DB-4-10	1/25/06	0855		X						X			X						X				X	X				-07
DB-4-20	↓	0901		↓						↓			↓						↓				↓	↓				-08
DB-4-30		0920																										-09
DB-4-32		0925																										-10
DB-4-37		0940																										-11
DB-4-40		0945																										-12
DB-4-42		1020																										-13
DB-4-50		1025																										-14
DB-4-55		1100																										-15
DB-4-60	↓	1150		↓						↓			↓						↓				↓	↓				-16

Relinquished by:	Date	Time	Received by:
	1/27/06	1645	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	01278	1645	Osama Abbas / Kiff Analytical

Remarks:

Bill to: Tesoro Petroleum Companies, Inc.

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

Lab No. 48126

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:

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

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: SLEEVE	Container: POLY	Container: AMBER	Container: TEDLAR	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Preservative:	Matrix: WATER	Matrix: SOIL	Matrix: VAPOR	BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas (8260B)	7 Oxygenates/TPH Gas (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2) TOTAL ☐ W.E.T. ☐				TAT	For Lab Use Only
DB-3-10	1/26/06	0732		X						X				X						X				X	X								-17
DB-3-20	↓	0800		↓						↓				↓						↓				↓	↓								-18
DB-3-30		0840																															-19
DB-3-33		0855																															-20
DB-3-37		0910																															-21
DB-3-40		0915																															-22
DB-3-42		0925																															-23
DB-3-45		0930																															-24
DB-3-50		0945																															-25
DB-3-55	↓	1010		↓						↓				↓						↓				↓	↓								-26

Relinquished by:	Date	Time	Received by:
	1/27/06	1645	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	01/27/06	1645	

Remarks:

Bill to: Tesoro Petroleum Companies, Inc.

KIFF ANALYTICAL LLC

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

Lab No. 48126

Page 4 of 6

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Mike Purchase

California EDF Report? ☑ Yes ☐ No

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

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

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

Project Name: Tesoro - Livermore

Project Address: 1619 1st Street, Livermore, California

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Global ID: T0600101410

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

Sampler Signature:

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: SLEEVE	Container: POLY	Container: AMBER	Container: TEDLAR	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Matrix: WATER	Matrix: SOIL	Matrix: VAPOR	Analysis Request: BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas (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
DB-3-58	1/26/06	1015		X						X			X						X				X	X					-27
DB-3-63	↓	1118		↓						↓			↓						↓				↓	↓					-28
DB-3-66		1150																											-29
DB-2-10		1410																											-30
DB-2-20		1428																											-31
DB-2-30		1442																											-32
DB-2-32		1448																											-33
DB-2-36		1455																											-34
DB-2-40		1500																											-35
DB-2-43	↓	1510		↓						↓			↓						↓				↓	↓					-36

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

Relinquished by:	Date	Time	Received by:
[signature]	1/27/06	1645	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	01/27/06	1645	Osama Mbaki / Kiff Analytical

Remarks:

Bill to: Tesoro Petroleum Companies, Inc.

KIFF ANALYTICAL LLC

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

Lab No. 48126

Page 5 of 6

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:

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
DB-1-10	1/27/06	0725			X						X			X						X				X	X								-37
DB-1-20		0740																															-38
DB-1-27		0800																															-39
DB-1-30		0805																															-40
DB-1-34		0830																															-41
DB-1-37		0850																															-42
DB-1-40		0900																															-43
DB-1-43		0910																															-44
DB-1-45		0915																															-45
DB-1-48		0925																															-46

Relinquished by:	Date	Time	Received by:
[signature]	1/27/06	1645	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	01/27/06	1645	Osama Abbas / K. T. Analyst

Remarks:

Bill to: Tesoro Petroleum Companies, Inc.

Kiff ECOC 011204

KIFF ANALYTICAL LLC

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

Lab No. 48126

Page 6 of 6

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:

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

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: SLEEVE	Container: POLY	Container: AMBER	Container: TEDLAR	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	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. ☐	For Lab Use Only
DB-1-50	1/27/06	0930		X						X			X						X				X	X				-47
DB-1-52	↓	1210		↓						↓			↓						↓				↓	↓				-48
DB-1-57	↓	1235		↓						↓			↓						↓				↓	↓				-49
DB-2-45	1/26/06	1515		↓						↓			↓						↓				↓	↓				-50

Relinquished by:	Date	Time	Received by:
	1/27/06	1645	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	012706	1645	Kiff Analytical

Remarks:

Bill to: Tesoro Petroleum Companies, Inc.

Kiff ECOC 011204

KIFF Analytical LLC

Report Number : 48234
Date : 2/9/2006

Mike Purchase
Arctos Environmental
1332 Peralta Avenue
Berkeley, CA

Subject : 1 Soil Sample and 4 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 : 48234

Date : 2/9/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-5@90** Matrix : Soil Lab Number : 48234-01

Sample Date :2/3/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.017**	0.0050	mg/Kg	EPA 8260B	2/4/2006
Toluene	**0.018**	0.0050	mg/Kg	EPA 8260B	2/4/2006
Ethylbenzene	**0.059**	0.0050	mg/Kg	EPA 8260B	2/4/2006
Total Xylenes	**0.22**	0.0050	mg/Kg	EPA 8260B	2/4/2006
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	2/4/2006
Diisopropyl ether (DIPE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	2/4/2006
Ethyl-t-butyl ether (ETBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	2/4/2006
Tert-amyl methyl ether (TAME)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	2/4/2006
Tert-Butanol	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	2/4/2006
Methanol	**< 0.20**	0.20	mg/Kg	EPA 8260B	2/4/2006
Ethanol	**< 0.010**	0.010	mg/Kg	EPA 8260B	2/4/2006
TPH as Gasoline	**1.5**	1.0	mg/Kg	EPA 8260B	2/4/2006
1,2-Dichloroethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	2/4/2006
1,2-Dibromoethane	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	2/4/2006
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	2/4/2006
4-Bromofluorobenzene (Surr)	94.9		% Recovery	EPA 8260B	2/4/2006
Dibromofluoromethane (Surr)	109		% Recovery	EPA 8260B	2/4/2006
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	2/4/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48234

Date : 2/9/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-5@40** Matrix : Water Lab Number : 48234-02

Sample Date :2/3/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**54**	0.50	ug/L	EPA 8260B	2/7/2006
Toluene	**4.6**	0.50	ug/L	EPA 8260B	2/7/2006
Ethylbenzene	**39**	0.50	ug/L	EPA 8260B	2/7/2006
Total Xylenes	**80**	0.50	ug/L	EPA 8260B	2/7/2006
Methyl-t-butyl ether (MTBE)	**150**	0.50	ug/L	EPA 8260B	2/7/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/7/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/7/2006
Tert-amyl methyl ether (TAME)	**1.6**	0.50	ug/L	EPA 8260B	2/7/2006
Tert-Butanol	**130**	5.0	ug/L	EPA 8260B	2/7/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	2/7/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/7/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/7/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/7/2006
TPH as Gasoline	**1800**	50	ug/L	EPA 8260B	2/7/2006
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	2/7/2006
4-Bromofluorobenzene (Surr)	99.5		% Recovery	EPA 8260B	2/7/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48234
Date : 2/9/2006

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

Sample : **DB-5@53** Matrix : Water Lab Number : 48234-03
Sample Date :2/3/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1100**	10	ug/L	EPA 8260B	2/7/2006
Toluene	**150**	10	ug/L	EPA 8260B	2/7/2006
Ethylbenzene	**1300**	10	ug/L	EPA 8260B	2/7/2006
Total Xylenes	**2100**	10	ug/L	EPA 8260B	2/7/2006
Methyl-t-butyl ether (MTBE)	**1500**	10	ug/L	EPA 8260B	2/7/2006
Diisopropyl ether (DIPE)	**< 10**	10	ug/L	EPA 8260B	2/7/2006
Ethyl-t-butyl ether (ETBE)	**< 10**	10	ug/L	EPA 8260B	2/7/2006
Tert-amyl methyl ether (TAME)	**15**	10	ug/L	EPA 8260B	2/7/2006
Tert-Butanol	**710**	50	ug/L	EPA 8260B	2/7/2006
Methanol	**< 1000**	1000	ug/L	EPA 8260B	2/7/2006
Ethanol	**< 100**	100	ug/L	EPA 8260B	2/7/2006
1,2-Dichloroethane	**< 10**	10	ug/L	EPA 8260B	2/7/2006
1,2-Dibromoethane	**< 10**	10	ug/L	EPA 8260B	2/7/2006
TPH as Gasoline	**58000**	1000	ug/L	EPA 8260B	2/7/2006
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	2/7/2006
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	2/7/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48234
Date : 2/9/2006

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

Sample : **DB-6@40** Matrix : Water Lab Number : 48234-04
Sample Date :2/3/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.52**	0.50	ug/L	EPA 8260B	2/8/2006
Toluene	**0.53**	0.50	ug/L	EPA 8260B	2/8/2006
Ethylbenzene	**0.66**	0.50	ug/L	EPA 8260B	2/8/2006
Total Xylenes	**0.66**	0.50	ug/L	EPA 8260B	2/8/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/8/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/8/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/8/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	2/8/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/8/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	2/8/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/8/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/8/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/8/2006
TPH as Gasoline	**2000**	50	ug/L	EPA 8260B	2/8/2006
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	2/8/2006
4-Bromofluorobenzene (Surr)	95.0		% Recovery	EPA 8260B	2/8/2006

Approved By: Joel Kiff

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

KIFF Analytical LLC

Report Number : 48234

Date : 2/9/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Sample : **DB-6@53** Matrix : Water Lab Number : 48234-05

Sample Date :2/3/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**13**	0.50	ug/L	EPA 8260B	2/7/2006
Toluene	**2.7**	0.50	ug/L	EPA 8260B	2/7/2006
Ethylbenzene	**8.0**	0.50	ug/L	EPA 8260B	2/7/2006
Total Xylenes	**4.8**	0.50	ug/L	EPA 8260B	2/7/2006
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/7/2006
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/7/2006
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	2/7/2006
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	2/7/2006
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/7/2006
Methanol	**< 50**	50	ug/L	EPA 8260B	2/7/2006
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	2/7/2006
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/7/2006
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	2/7/2006
TPH as Gasoline	**1100**	50	ug/L	EPA 8260B	2/7/2006
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	2/7/2006
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	2/7/2006

Approved By: Joel Kiff

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

Report Number : 48234

Date : 2/9/2006

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/4/2006
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/4/2006
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/4/2006
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/4/2006
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/4/2006
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/4/2006
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/4/2006
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/4/2006
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/4/2006
Methanol	< 0.20	0.20	mg/Kg	EPA 8260B	2/4/2006
Ethanol	< 0.010	0.010	mg/Kg	EPA 8260B	2/4/2006
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	2/4/2006
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/4/2006
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/4/2006
Toluene - d8 (Surr)	97.1		%	EPA 8260B	2/4/2006
4-Bromofluorobenzene (Surr)	95.0		%	EPA 8260B	2/4/2006
Dibromofluoromethane (Surr)	107		%	EPA 8260B	2/4/2006
1,2-Dichloroethane-d4 (Surr)	106		%	EPA 8260B	2/4/2006
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/6/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/6/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/6/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/6/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/6/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	2/6/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	2/6/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	2/6/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	2/6/2006
Methanol	< 50	50	ug/L	EPA 8260B	2/6/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	2/6/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	2/6/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	2/6/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/6/2006
Toluene - d8 (Surr)	101		%	EPA 8260B	2/6/2006

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
4-Bromofluorobenzene (Surr)	99.8		%	EPA 8260B	2/6/2006
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/7/2006
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/7/2006
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/7/2006
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/7/2006
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/7/2006
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	2/7/2006
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	2/7/2006
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	2/7/2006
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	2/7/2006
Methanol	< 50	50	ug/L	EPA 8260B	2/7/2006
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	2/7/2006
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	2/7/2006
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	2/7/2006
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/7/2006
Toluene - d8 (Surr)	98.5		%	EPA 8260B	2/7/2006
4-Bromofluorobenzene (Surr)	95.2		%	EPA 8260B	2/7/2006

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48234

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 2/9/2006

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	48157-02	<0.0050	0.0394	0.0399	0.0362	0.0362	mg/Kg	EPA 8260B	2/4/06	92.0	90.8	1.32	70-130	25
Toluene	48157-02	<0.0050	0.0394	0.0399	0.0348	0.0345	mg/Kg	EPA 8260B	2/4/06	88.5	86.5	2.36	70-130	25
Tert-Butanol	48157-02	<0.0050	0.197	0.200	0.194	0.191	mg/Kg	EPA 8260B	2/4/06	98.5	95.5	3.04	70-130	25
Methyl-t-Butyl Ether	48157-02	<0.0050	0.0394	0.0399	0.0420	0.0411	mg/Kg	EPA 8260B	2/4/06	107	103	3.60	70-130	25
Benzene	48215-09	<0.50	40.0	40.0	43.3	42.0	ug/L	EPA 8260B	2/6/06	108	105	2.92	70-130	25
Toluene	48215-09	<0.50	40.0	40.0	43.9	42.5	ug/L	EPA 8260B	2/6/06	110	106	3.06	70-130	25
Tert-Butanol	48215-09	<5.0	200	200	208	201	ug/L	EPA 8260B	2/6/06	104	100	3.24	70-130	25
Methyl-t-Butyl Ether	48215-09	<0.50	40.0	40.0	41.0	40.7	ug/L	EPA 8260B	2/6/06	102	102	0.719	70-130	25
Benzene	48244-01	<0.50	40.0	40.0	41.1	39.3	ug/L	EPA 8260B	2/7/06	103	98.4	4.30	70-130	25
Toluene	48244-01	<0.50	40.0	40.0	40.4	39.2	ug/L	EPA 8260B	2/7/06	101	98.0	3.09	70-130	25
Tert-Butanol	48244-01	<5.0	200	200	193	198	ug/L	EPA 8260B	2/7/06	96.6	99.2	2.61	70-130	25
Methyl-t-Butyl Ether	48244-01	<0.50	40.0	40.0	41.5	41.6	ug/L	EPA 8260B	2/7/06	104	104	0.345	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 48234

QC Report : Laboratory Control Sample (LCS)

Date : 2/9/2006

Project Name : **Tesoro - Livermore**

Project Number : **67076**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	0.0374	mg/Kg	EPA 8260B	2/4/06	97.2	70-130
Toluene	0.0374	mg/Kg	EPA 8260B	2/4/06	90.5	70-130
Tert-Butanol	0.187	mg/Kg	EPA 8260B	2/4/06	93.7	70-130
Methyl-t-Butyl Ether	0.0374	mg/Kg	EPA 8260B	2/4/06	104	70-130
Benzene	40.0	ug/L	EPA 8260B	2/6/06	107	70-130
Toluene	40.0	ug/L	EPA 8260B	2/6/06	109	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/6/06	98.7	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/6/06	100	70-130
Benzene	40.0	ug/L	EPA 8260B	2/7/06	100	70-130
Toluene	40.0	ug/L	EPA 8260B	2/7/06	102	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/7/06	95.7	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/7/06	103	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. 48234   Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Mike Purchase

California EDF Report? ☑ Yes ☐ No

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

Recommended but not mandatory to complete this section:
Sampling Company Log Code:

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

Global ID: T0600101410

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

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

Project Name: Tesoro - Livermore

Sampler Signature: [signature]

Project Address: 1619 1st Street, Livermore, California

Analysis Request: BTEX (8021B); BTEX/TPH Gas/MTBE (8021B/M8015); TPH as Diesel (M8015); TPH as Motor Oil (M8015); TPH Gas/BTEX/MTBE (8260B); 5 Oxygenates/TPH Gas (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 ○

Sample Designation	Date	Time	40 ml VOA	SLEEVE	POLY	AMBER	TEDLAR	HCl	HNO_3	ICE	NONE		WATER	SOIL	VAPOR	TPH Gas/BTEX/MTBE (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	For Lab Use Only
DB-5 @ 90	2/3/06	0940		X							X			X		X	X	X	01
DB-5 @ 40	↓	1010	X					X					X			X	X	X	02
DB-5 @ 53	↓	1030	X					X					X			X	X	X	03
~~DB-6 @ 87~~				~~X~~							~~X~~			~~X~~		~~X~~	~~X~~	~~X~~	
DB-6 @ 40	↓	1430	X					X					X			X	X	X	~~05~~ 04
DB-6 @ 53	↓	1450	X					X					X			X	X	X	05

Relinquished by:	Date	Time	Received by:
[signature]	2/3/06	1530	
	020306	1532	Received by Laboratory: [signature] Kiff Analytical

Remarks: RETURN REMAINING SOIL SAMPLE TO ARCTOS

Sample Receipt
Temp °C 2.6 Therm. ID# IR-1
Initial [initials] Date 020306
Time 1810 Coolant present Y / N

Bill to: Tesoro Petroleum Companies, Inc.

APPENDIX C

FIELD AND QA/QC PROCEDURES

APPENDIX C
FIELD AND QA/QC PROCEDURES

Health and Safety

Before beginning work at the site, a site safety meeting was conducted. Field personnel reviewed the site-specific health and safety plan (HSP) and signed the accompanying acknowledgment form. Field personnel were required to comply with the HSP throughout performance of site assessment activities.

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

Soil Gas Sampling Procedures

A direct-push soil gas sampler (consisting of a 12-inch-long screen inside a metal sheath) was advanced hydraulically to the desired depth. The sampling tool was retracted approximately 12 inches, exposing the inlet screen and allowing soil gas to enter the sampler. Soil gas samples were collected following the California Department of Toxic Substances Control guidelines in the 28 January 2003 active soil gas investigation guidance document.

Drilling and Soil Sampling Methods

Direct Push Rig

Before initiating drilling activities, Arctos marked the boring locations and contacted Underground Service Alert to clear the area of subsurface lines and utilities. Arctos also obtained boring and well permits from the Zone 7 Water Agency. The soil borings were advanced with a direct-push drill rig. Soil samples were collected inside the direct-push soil sampling tool which contained a 5-foot-long, 1.25-inch-diameter acetate sleeve. The sampler was driven to the sampling depth using a hydraulic hammer. Soil samples were collected continuously for lithologic logging.

Immediately after the sampler was retrieved from the rod, it was placed on a portable field stand near the boring and the acetate sleeve removed. A selected sample interval was cut from the acetate sleeve and the ends were covered with Teflon, capped with polyvinyl chloride end caps, and sealed in a plastic bag. Sample labels were used to identify the samples. The label information included project identification, boring number, sample depth, date, time, and initials of the person preparing the samples.

The remaining acetate sleeve was cut to expose the continuous soil core. The sample in the acetate sleeve was visually examined and the results of the visual observation were

recorded on the boring log. The soil type was classified using the Unified Soil Classification System (USCS) as described in American Society for Testing and Materials (ASTM) Standards D2487 and D2488.

A portion of the soil was placed in a sealable plastic bag, which was closed and allowed to equilibrate for approximately 10 minutes. The organic vapor levels in the headspace were measured using a PID. The boring and well logs are in Appendix D.

Cone Penetrometer Test (CPT) Rig

CPT borings were advanced using a 20-ton capacity integrated electronic cone system advanced by direct-push using the weight of the rig. The cone takes 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 is 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). The boring and well logs are in Appendix D.

Soil samples were collected inside a direct-push soil sampling tool which contained two 6-inch-long, 1.5-inch-diameter stainless steel sleeves. The sampler was driven to the sampling depth by the weight of the CPT rig. Immediately after the sampler was retrieved from the rod, it was placed on a portable field stand near the boring and the sleeves removed. The ends of one sleeve were covered with Teflon, capped with polyvinyl chloride end caps, and sealed in a plastic bag. Sample labels were used to identify the samples. The label information included project identification, boring number, sample depth, date, time, and initials of the person preparing the samples.

Grab Groundwater Sampling Procedures

A direct-push groundwater sampler (consisting of a 48-inch-long screen inside a metal sheath) was advanced hydraulically within the soil boring to the depth of permeable zones identified from soil sampling. The sampling tool was then retracted approximately 4 feet, exposing the inlet screen and allowing groundwater to enter the chamber. The sampling tool remained in the ground until a sufficient volume of water entered the chamber and a water sample could be collected.

The groundwater sample was collected using new 3/8-inch Teflon tubing equipped with a bottom check valve. The tubing was lowered into the well casing until it reached the water collected in the bottom of the well screen. The tubing was oscillated up and down, and the water sample was pushed upward into the tubing as the check valve repeatedly lifted and seated. When an adequate amount of water filled the tubing, the tubing was removed from the sampling tool.

Water was decanted from the tubing into a new 40-milliliter glass bottle with Teflon-lined caps provided by the analytical laboratory. The grab sample was collected so that no

headspace was present in the bottle. The preservative necessary for the analyses performed was provided in the glass bottles by the analytical laboratory.

Preservation and Delivery of Samples

The collected soil and water samples were placed in sealable plastic bags and packed on ice in a portable ice chest immediately after collection. Samples were delivered within 24 to 48 hours to the analytical laboratory. Additional QA/QC procedures, including the use of sample identification labels and chain-of-custody forms, were followed to track sample collection and delivery.

Chain-of-Custody Records

Chain-of-custody records were completed before the samples were submitted to the laboratory. One copy of these records was placed in the project file. The second copy accompanied the samples during transportation to the laboratory. Analytical laboratory personnel accepted responsibility for the samples by signing and dating the form.

Equipment Decontamination Procedures

Soil sampling equipment was decontaminated between sampling events using the following procedures:

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

Acetate tubes were new or cleaned using the decontamination procedures described above. End caps were new. Drill augers or pipe were steam-cleaned before each boring was drilled.

Management of Drill Cuttings and Wastewater

The drill cuttings and wastewater were placed in 55-gallon drums and stored on site. Each drum was labeled with the date, drum contents, and corresponding depths (for drill cuttings). The soil and wastewater drums were transported to the disposal and/or recycling facilities for proper disposal.

Documentation Procedures

Arctos personnel followed documentation procedures developed for site investigation work. The procedures serve to (1) provide a record of the activities performed in the field and (2) permit identification of samples and tracking of their status in the field, during shipment, and at the laboratory.

Arctos field personnel were on site to observe the progress of sampling and to log each boring. The information recorded on the boring log included drilling equipment used, boring location, nature of the materials encountered, sampling depth, time of day, and other pertinent data. The boring logs were drafted for presentation in this report.

Analytical QA/QC Procedures

Laboratory analytical QA/QC procedures followed for this drilling program included (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 included method blanks, matrix spike and matrix spike duplicates, and laboratory control samples.

The laboratory results were reviewed in general accordance with EPA guidelines for data validation. The data validation process included 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.

APPENDIX D

BORING LOGS

Project: Tesoro - Livermore
Project Location: 1619 First Street
Project Number: 01LV

Key to Log of Boring

Elevation, feet	Depth, feet	SAMPLES: Type	SAMPLES: Number	Graphic Log	MATERIAL DESCRIPTION	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
1	2	3	4	5	6	7	8	9	10

COLUMN DESCRIPTIONS

1. **Elevation:** Elevation in feet relative to mean sea level (MSL).
2. **Depth:** Depth in feet below the ground surface.
3. **Sample Type:** Type of sample collected at depth interval shown; sampler symbols are explained below.
4. **Sample Number:** Identification number of retained sample.
5. **Graphic Log:** Graphic depiction of subsurface material encountered; typical symbols are explained below.
6. **Material Description:** Description of material encountered; in addition to soil classification and USCS, may include density/consistency, moisture, color, and grain size.
7. **Headspace PID:** Photoionization device (PID) field sample headspace reading in parts per million (ppm).
8. **Background PID:** Photoionization device (PID) background reading in parts per million (ppm).
9. **Drilling Progress:** Time (in 24-hour clock) at sampling and other events during downhole advance.
10. **Remarks:** Comments and observations regarding drilling or sampling made by driller or field personnel, including PID reading in operator breathing zone (OBZ).

TYPICAL SOIL GRAPHIC SYMBOLS

- Poorly Graded SAND (SP)
- Well-Graded SAND (SW)
- SAND with SILT (SP-SM)
- SILTY SAND (SM)
- LEAN CLAY (CL)
- FAT CLAY (CH)
- SILTY CLAY (CL)
- CLAYEY SAND (SC)
- SILT (ML)
- CLAYEY SILT (ML)
- Poorly Graded GRAVEL (GP)
- Clayey Gravel (GC)

TYPICAL SAMPLER GRAPHIC SYMBOLS

- Macrocore continuous sampler with acetate sleeves
- No recovery interval in acetate sleeve
- Portion of sample retained for analysis

OTHER GRAPHIC SYMBOLS

- First water encountered at time of drilling
- Static water level measured in well
- Change in material properties within a stratum
- – – – Inferred contact between strata or gradational change in lithology

GENERAL NOTES

1. Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive; actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2. Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

Project: Tesoro - Livermore
Project Location: 1619 First Street
Project Number: 01LV

Log of Boring DB-1

Sheet 1 of 2

Date(s) Drilled	**1/27/06**	Logged By	**J. Blair**	Checked By	**J. Gwinn**
Drilling Method	**Direct Push**	Drill Bit Size/Type	**1-1/2-inch-dia. direct push rod**	Total Depth of Borehole	**60.0 feet**
Drill Rig Type	**Geoprobe 6600**	Drilling Contractor	**Vironex**	Approximate Surface Elevation	**Not available**
Groundwater Level and Date Measured	**51 feet bgs ATD (1/27/06)**	Sampling Method	**Macrocore continuous sampler with 5-foot-long acetate sleeve**		
Borehole Completion	**Cement slurry to ground surface**	Comments	**Hand augered to 5 feet. Refer to site plan for boring location.**		

Elevation, feet / Depth, feet	SAMPLES Type	SAMPLES Number	Graphic Log	MATERIAL DESCRIPTION	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
0				Concrete 5 inches thick				Hand auger first 5 ft.
5				Moist, light brown, well-graded SAND with GRAVEL (SW), fine to coarse gravel	1.9	0.0		
10		DB-1-10		With trace clay	0.3	0.0	0725	PID in operator breathing zone (OBZ) = 0.0 ppm
				Moist, light gray, CLAYEY SAND (SC), trace fine gravel	1.2	0.0		
15					0.9	0.0	0732	
					2.8	0.0		
20		DB-1-20			2.3	0.0	0740	OBZ=0.0 ppm
				Moist, light brown, well-graded SAND with GRAVEL (SW), fine to coarse gravel	0.7	0.0		
25				Moist, light brown, SANDY SILT (ML), fine-grained sand, trace clay	3.0	0.0	0750	
					3.4	0.0		
		DB-1-27		Moist, light brown, SILTY CLAY (CL), trace fine-grained sand	95.4	0.0	0800	
				Moist, grayish brown, CLAYEY SAND (SC), trace fine gravel	988	0.0		
30		DB-1-30			1127	0.0	0805	OBZ=0.0 ppm

Report: ORION_3SA; File: TESLVMOR.GPJ; 2/3/06

Project: Tesoro - Livermore
Project Location: 1619 First Street
Project Number: 01LV

Log of Boring DB-1

Sheet 2 of 2

Elevation, feet / Depth, feet	SAMPLES Type	SAMPLES Number	Graphic Log	MATERIAL DESCRIPTION	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
30				Moist, light brown, SILTY CLAY (CL), trace fine-grained sand	189	0.0		
					61.2	0.0		
				← Grades with more sand	20.7	0.0	0815	
	Split spoon	DB-1-34			195	0.0	0830	
35				Moist, brown, poorly graded GRAVEL with SILT and SAND (GP-GM), fine gravel	70.0	0.0	0840	
					32.1	0.0		
	Split spoon	DB-1-37			196	0.0	0850	
					1223	0.0		
				← Grades with more sand				
40	Split spoon	DB-1-40			1444	0.0	0900	OBZ=0.0 ppm
				Moist, light brown, SILTY CLAY (CL)	532	0.0		
					388	0.0		
	Split spoon	DB-1-43		Very moist, brown, poorly graded GRAVEL with SILT and SAND (GP-GM), fine gravel	766	0.0	0910	
					642	0.0		
45	Split spoon	DB-1-45		Very moist, brown, SILT with SAND and GRAVEL (ML), fine gravel	1981	0.0	0915	
					537	0.0		
				} Some clay, less sand and gravel	421	0.0		
	Split spoon	DB-1-48			1844	0.0	0925	
				Very moist, brown, well-graded SAND with SILT and GRAVEL (SW-SM), fine gravel	492	0.0		
50	Split spoon	DB-1-50			643	0.0	0930	OBZ=0.0 ppm
				Wet, light brown, SANDY SILT (ML), fine-grained sand ▽	826	0.0		Groundwater sample DB-1@50 collected with PVC at 0940.
	Split spoon	DB-1-52		Wet, light brown, SILT with SAND and GRAVEL (ML), fine gravel	498	0.0	1200	
					202	0.0		
55					196	0.0	1215	
	Split spoon	DB-1-57			1440	0.0	1235	
				[Soil not sampled below 57 feet, depth at which Geoprobe met refusal. Hydropunch was pushed to 50 feet to collect groundwater sample.]				Groundwater sample DB-1@60 collected with Hydropunch.
60							1310	
				Boring was drilled and soil sampled to 57.0 feet. Hydropunch was pushed to 60.0 feet to sample groundwater.				
65								

Report: ORION_3SA; File: TESLVMOR.GPJ; 2/3/06

Project: Tesoro - Livermore
Project Location: 1619 First Street
Project Number: 01LV

Log of Boring DB-2

Sheet 1 of 2

Date(s) Drilled	**1/26/06 and 1/27/06**	Logged By	**J. Blair**	Checked By	**J. Gwinn**
Drilling Method	**Direct Push**	Drill Bit Size/Type	**1-1/2-inch-dia. direct push rod**	Total Depth of Borehole	**55.0 feet**
Drill Rig Type	**Geoprobe 6600**	Drilling Contractor	**Vironex**	Approximate Surface Elevation	**Not available**
Groundwater Level and Date Measured	**42 feet bgs ATD (1/26/06)**	Sampling Method	**Macrocore continuous sampler with 5-foot-long acetate sleeve**		
Borehole Completion	**Cement slurry to ground surface**	Comments	**Hand augered to 5 feet. Refer to site plan for boring location.**		

Elevation, feet / Depth, feet	SAMPLES Type	SAMPLES Number	Graphic Log	MATERIAL DESCRIPTION	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
0				Concrete 5 inches thick				Hand auger first 5 ft.
5				Moist, light brown, well-graded SAND with GRAVEL (SW), fine to coarse gravel	0.0	0.0		
				Gravel grades finer, trace clay				
10		DB-2-10			0.0	0.0	1410	PID in operator breathing zone (OBZ) = 0.0 ppm
					0.0	0.0		
					0.0	0.0		
15				Moist, light gray, CLAYEY SAND (SC), trace fine gravel	0.0	0.0	1420	
					0.0	0.0		
20		DB-2-20		Moist, light brown, SANDY SILT (ML), fine-grained sand, trace clay	0.0	0.0	1428	OBZ=0.0 ppm
				Moist, light brown, SILTY CLAY (CL), trace fine-grained sand	0.0	0.0		
25					0.0	0.0	1435	
				Moist, grayish brown, CLAYEY SAND (SC), trace fine gravel	0.0	0.0		
					46.4	0.0		
30		DB-2-30			654	0.0	1442	OBZ=0.0 ppm

Report: ORION_3SA; File: TESLVMOR.GPJ; 2/3/06

Project: Tesoro - Livermore
Project Location: 1619 First Street
Project Number: 01LV

Log of Boring DB-2

Elevation, feet / Depth, feet	SAMPLES Type	SAMPLES Number	Graphic Log	MATERIAL DESCRIPTION	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
30				Moist, grayish brown, CLAYEY SAND (SC), trace fine gravel (continued)	96.1	0.0		
	Core	DB-2-32			2376	0.0	1448	
					1393	0.0		
					714	0.0		
35					390	0.0	1450	
	Core	DB-2-36		Moist, light brown, poorly graded GRAVEL with SILT and SAND (GP-GM), fine gravel	0.0	0.0	1455	
					16.2	0.0		
				Moist, light brown, SANDY SILT (ML), trace fine gravel	7.3	0.0		
				Very moist, light brown, SILTY SAND (SM), trace clay	11.1	0.0	1500	
40	Core	DB-2-40			191	0.0		
				▽	83.4	0.0		
				Wet, light brown, well-graded SAND with SILT and GRAVEL (SW-SM), fine gravel	505	0.0	1510	
	Core	DB-2-43			110	0.0		
45	Core	DB-2-45			263	0.0	1515	
				[Soil not sampled below 45 feet on 1/26/06. Hydropunch was pushed to 55 feet to collect groundwater sample. Returned to drill site on 1/27/06 and attempted to deepen borehole. Geoprobe met refusal at 54 feet.]				Groundwater sample DB-2@45 collected with PVC at 1520 on 1/26/06. Borehole and soil sampling terminated at 45 ft on 1/26/06. Returned on 1/27/06 to attempt to deepen borehole.
50								
								Groundwater sample DB-2@55 collected with Hydropunch at 1540 on 1/26/06.
55				**Boring drilled to 54.0 feet (refusal) and soil sampled to 45.0 feet. Hydropunch was pushed to 55.0 feet to sample groundwater.**				
60								
65								

Report: ORION_3SA; File: TESLVMOR.GPJ; 2/3/06

Project: Tesoro - Livermore
Project Location: 1619 First Street
Project Number: 01LV

Log of Boring DB-3

Sheet 1 of 3

Date(s) Drilled	**1/26/06**	Logged By	**J. Blair**	Checked By	**J. Gwinn**
Drilling Method	**Direct Push**	Drill Bit Size/Type	**1-1/2-inch-dia. direct push rod**	Total Depth of Borehole	**67.0 feet**
Drill Rig Type	**Geoprobe 6600**	Drilling Contractor	**Vironex**	Approximate Surface Elevation	**Not available**
Groundwater Level and Date Measured	**49 feet bgs ATD (1/26/06)**	Sampling Method	**Macrocore continuous sampler with 5-foot-long acetate sleeve**		
Borehole Completion	**Cement slurry to ground surface**	Comments	**Hand augered to 5 feet. Refer to site plan for boring location.**		

Elevation, feet / Depth, feet	SAMPLES Type	SAMPLES Number	Graphic Log	MATERIAL DESCRIPTION	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
0				Concrete 5 inches thick				Hand auger first 5 ft.
5							0725	
				Moist, light brown, well-graded SAND with GRAVEL (SW), fine to coarse gravel	0.0	0.0		
10		DB-3-10			0.3	0.0	0732	PID in operator breathing zone (OBZ) = 0.0 ppm
					0.2	0.0		
				With trace clay	0.9	0.0		
15				Moist, light gray, CLAYEY SAND (SC), trace fine gravel	0.0	0.0	0745	
					1.0	0.0		
20		DB-3-20		Moist, light brown, SANDY SILT (ML), fine-grained sand, trace clay	1.7	0.0	0800	OBZ=0.0 ppm
				Moist, light brown, SILTY CLAY (CL), trace fine-grained sand	0.8	0.0		
					4.0	0.0		
25					3.1	0.0	0820	
				Moist, grayish brown, CLAYEY SAND (SC), trace fine gravel				
					28.0	0.0		
					105	0.0		
30		DB-3-30			776	0.0	0840	OBZ=0.0 ppm

Report: ORION_3SA; File: TESLVMOR.GPJ; 2/3/06

Project: Tesoro - Livermore
Project Location: 1619 First Street
Project Number: 01LV

Log of Boring DB-3

Elevation, feet / Depth, feet	SAMPLES Type	SAMPLES Number	Graphic Log	MATERIAL DESCRIPTION	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
30				Moist, grayish brown, CLAYEY SAND (SC), trace fine gravel (continued)				
				Becomes gray, with more gravel	226	0.0		
					334	0.0		
		DB-3-33			1345	0.0	0855	
					535	0.0		
35					407	0.0	0900	
					380	0.0		
		DB-3-37			1206	0.0	0910	
				Moist, light brown, poorly graded GRAVEL with SILT and SAND (GP-GM), fine gravel, trace orange-brown silt	733	0.0		
40		DB-3-40			426	0.0	0915	OBZ=0.0 ppm
					1299	0.0		
		DB-3-42			1365	0.0	0925	
					781	0.0		
					47.1	0.0		
				Becomes very moist				
45		DB-3-45			57.2	0.0	0930	
					193	0.0		
				Wet, light brown, CLAYEY SILT (ML)				
50		DB-3-50			311	0.0	0945	OBZ=0.0 ppm
				Wet, light brown, well-graded SAND with SILT and GRAVEL (SW-SM), fine gravel	379	0.0		Groundwater sample DB-3@50 collected with PVC at 0950.
					115	0.0		
					440	0.0		
55		DB-3-55			380	0.0	1010	
				Wet, grayish brown, CLAYEY GRAVEL (GC), fine to coarse gravel				
		DB-3-58			62.3	0.0	1015	
60								
		DB-3-63		Wet, gray, poorly graded GRAVEL with SAND (GP), fine to coarse gravel	780	0.0	1418	
65					612	0.0	1120	

Report: ORION_3SA; File: TESLVMOR.GPJ; 2/3/06

Project: Tesoro - Livermore
Project Location: 1619 First Street
Project Number: 01LV

Log of Boring DB-3

Elevation, feet / Depth, feet	SAMPLES Type	SAMPLES Number	Graphic Log	MATERIAL DESCRIPTION	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
65		DB-3-66		Wet, gray, poorly graded GRAVEL with SAND (GP) (continued) [Soil not sampled below 66 feet. Hydropunch was pushed to 67 feet.]	696	0.0	1150	
				Boring was drilled and soil sampled to 66.0 feet. **Hydropunch was pushed to 67.0 feet to sample groundwater.**				Groundwater sample attempted with Hydropunch at 67 ft; no water produced after 50 minutes.
70								
75								
80								
85								
90								
95								
100								

Report: ORION_3SA; File: TESLVMOR.GPJ; 2/3/06

Project: Tesoro - Livermore
Project Location: 1619 First Street
Project Number: 01LV

Log of Boring DB-4

Sheet 1 of 2

Date(s) Drilled	**1/25/06**	Logged By	**J. Blair**	Checked By	**J. Gwinn**
Drilling Method	**Direct Push**	Drill Bit Size/Type	**1-1/2-inch-dia. direct push rod**	Total Depth of Borehole	**63.0 feet**
Drill Rig Type	**Geoprobe 6600**	Drilling Contractor	**Vironex**	Approximate Surface Elevation	**Not available**
Groundwater Level and Date Measured	**46.5 feet bgs ATD (1/25/06)**	Sampling Method	**Macrocore continuous sampler with 5-foot-long acetate sleeve**		
Borehole Completion	**Cement slurry to ground surface**	Comments	**Hand augered to 5 feet. Refer to site plan for boring location.**		

Elevation, feet / Depth, feet	SAMPLES Type	SAMPLES Number	Graphic Log	MATERIAL DESCRIPTION	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
0				Concrete 5 inches thick			0800	Hand auger first 5 ft.
5				Moist, light brown, well-graded SAND with GRAVEL (SW), fine to coarse gravel				
10		DB-4-10			0.0	0.0	0855	PID in operator breathing zone (OBZ) = 0.0 ppm
				Grades with more fine-grained sand, trace silt	0.0	0.0		
15				Moist, light gray, CLAYEY SAND (SC), trace fine gravel, trace orange-brown silt	0.1	0.0	0858	
					0.0	0.0		
				Becomes light grayish brown				
20		DB-4-20			0.0	0.0	0901	OBZ=0.0 ppm
				Moist, light brown, SANDY SILT (ML), fine-grained sand, trace clay	0.0	0.0		
25					0.0	0.0	0910	
				Moist, light brown, SILTY CLAY (CL), trace fine-grained sand	0.8	0.0		
					10.1	0.0		
				Moist, grayish brown, CLAYEY SAND (SC), trace fine gravel, trace orange-brown silt				
30		DB-4-30			121	0.0	0920	OBZ=0.0 ppm

Report: ORION_3SA; File: TESLVMOR.GPJ; 2/3/06

Project: Tesoro - Livermore
Project Location: 1619 First Street
Project Number: 01LV

Log of Boring DB-4

Sheet 2 of 2

Elevation, feet / Depth, feet	SAMPLES Type	SAMPLES Number	Graphic Log	MATERIAL DESCRIPTION	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
30				Moist, grayish brown, CLAYEY SAND (SC), trace fine gravel, trace orange-brown silt (continued)	132	0.0		
		DB-4-32		Grades with more silt and gravel	194	0.0	0925	
					65.1	0.0		
				Moist, light brown, poorly graded GRAVEL with SILT and SAND (GP-GM), fine gravel	8.3	0.0		
35					3.8	0.0	0930	
					3.6	0.0		
		DB-4-37		Moist, light brown, SANDY SILT (ML), trace fine gravel	435	0.0	0940	
				Very moist, light brown, SILTY SAND (SM), trace clay	54.5	0.0		
40		DB-4-40			13.5	0.0	0945	OBZ=0.0 ppm
					520	0.0		
		DB-4-42			8.8	0.0	1000	
				Moist, light brown, well-graded SAND with SILT and GRAVEL (SW-SM), fine gravel	33.4	0.0		
					0.6	0.0		
45					1.8	0.0	1005	
				Becomes wet ▽				
					6.0	0.0		
				Wet, light brown, CLAYEY SILT (ML)				
50		DB-4-50			7.5	0.0	1025	OBZ=0.0 ppm
				Wet, light brown, well-graded SAND with SILT and GRAVEL (SW-SM), fine gravel	12.6	0.0		Groundwater sample DB-4@50 collected with PVC at 1040.
					18.3	0.0		
55		DB-4-55			327	0.0	1100	
					58.8	0.0		
					1.7	0.0		
60		DB-4-60			20.8	0.0	1150	OBZ=0.0 ppm
					4.0	0.0		
					0.3	0.0	1230	
65				**Boring was terminated at 63.0 feet (refusal)**				

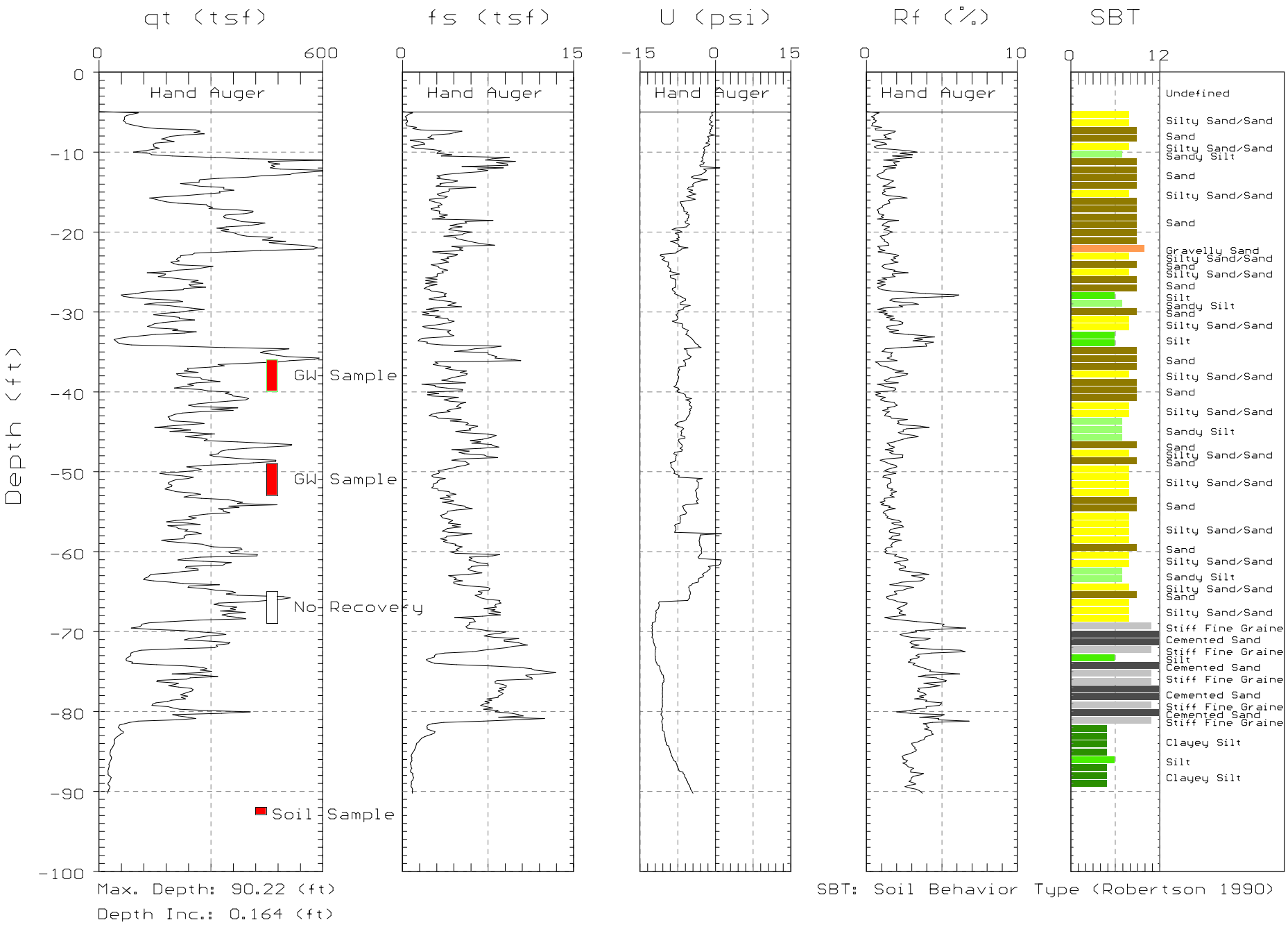
Report: ORION_3SA; File: TESLVMOR.GPJ; 2/3/06

GREGG

ORION

Site: 1619 FIRST ST.
Location: CPT-DB-5

Engineer: M.PURCHASE
Date: 02:03:06 09:27



Max. Depth: 90.22 (ft)
Depth Inc.: 0.164 (ft)

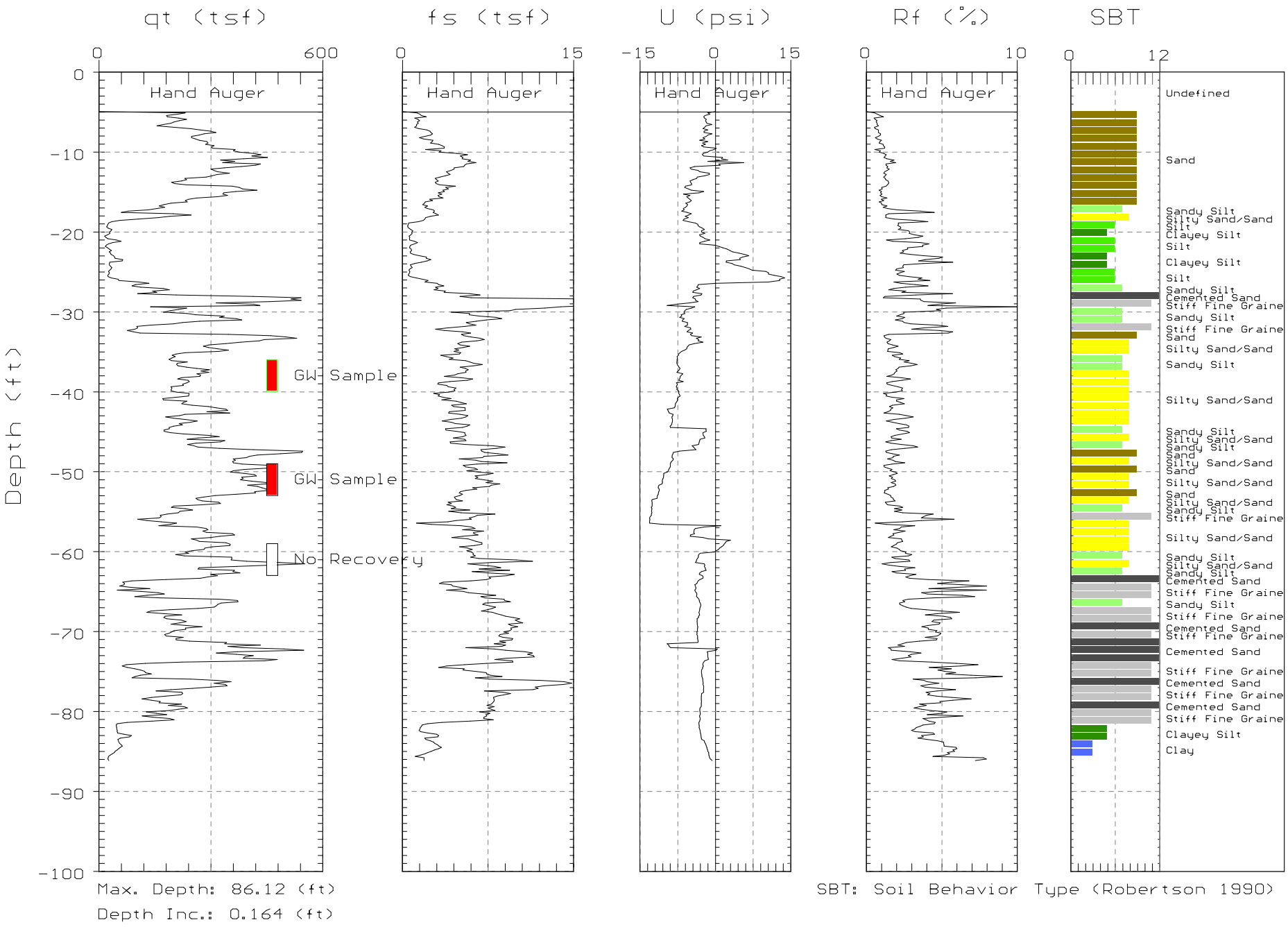
SBT: Soil Behavior Type (Robertson 1990)

GREGG

ORION

Site: 1619 FIRST ST.
Location: CPT-DB-6

Engineer: M.PURCHASE
Date: 02:03:06 14:11



Max. Depth: 86.12 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

APPENDIX E

SITE SURVEY REPORT

CROSS LAND SURVEYING, INC.
Consulting Land Surveyors • GPS Control Surveys

KRISTINA D. COMERER, PLS 6766

2210 Mt. Pleasant Road
San Jose, CA 95148
(408) 274-7994
FAX (408) 270-8670

SOIL BORING REPORT
TESORO SITE
1619 WEST FIRST STREET
LIVERMORE, CALIFORNIA
MARCH 21, 2006

BORING	LATITUDE	LONGITUDE	BORING ELEV.
SG-1	37.6791912	121.7758364	474.41
SG-2	37.6792881	121.7757928	474.22
SG-3	37.6792864	121.7756919	474.46
SG-4	37.6793119	121.7758894	473.56
SG-5	37.6793315	121.7757811	474.12
SG-6	37.6793570	121.7756889	474.09
SG-7	37.6793620	121.7758664	473.56
SG-8	37.6793991	121.7757558	473.78
SG-9	37.6792596	121.7756289	474.80
DB-1	37.6793203	121.7759196	473.42
DB-2	37.6793686	121.7759036	473.27
DB-3	37.6793803	121.7758508	473.47
DB-4	37.6794084	121.7757639	473.61
DB-5	37.6795087	121.7765196	472.01
DB-6	37.6796013	121.7772700	469.35

HORIZONTAL DATUM IS NAD83 DERIVED FROM A GPS FAST-STATIC SURVEY HOLDING CALIFORNIA HIGH PRECISION GEODETIC NETWORK DENSIFICATION (HPGN-D) POINTS CA 04-FK AND CA 04-FL FIXED HORIZONTALLY, AS PUBLISHED FOR EPOCH 1991.35, FROM THE NGS DATA SHEET, IN A LEAST SQUARES ADJUSTMENT OF THE GPS DATA.

VERTICAL DATUM IS NGVD29. FOUND CITY OF LIVERMORE BENCH MARK K2-741 BEING A BRASS PIN IN CONCRETE, DN. 0.4' IN EASTERLY MONUMENT WELL AT THE INTERSECTION OF S. "P" STREET AND RAILROAD AVENUE. PUBLISHED ELEVATION FOR K2-741 IS 467.835 FEET, NGVD29, ON FILE WITH THE CITY OF LIVERMORE.

Kristina D. Comerer

KRISTINA D. COMERER, PLS 6766
LICENSE EXPIRES: SEPTEMBER 30, 2006

MONITORING WELL SURVEY
TESORO SITE
1619 WEST FIRST STREET
LIVERMORE, CALIFORNIA
AUGUST 31, 2005
(REVISED MARCH 21, 2006)
SCALE: 1" = 60'

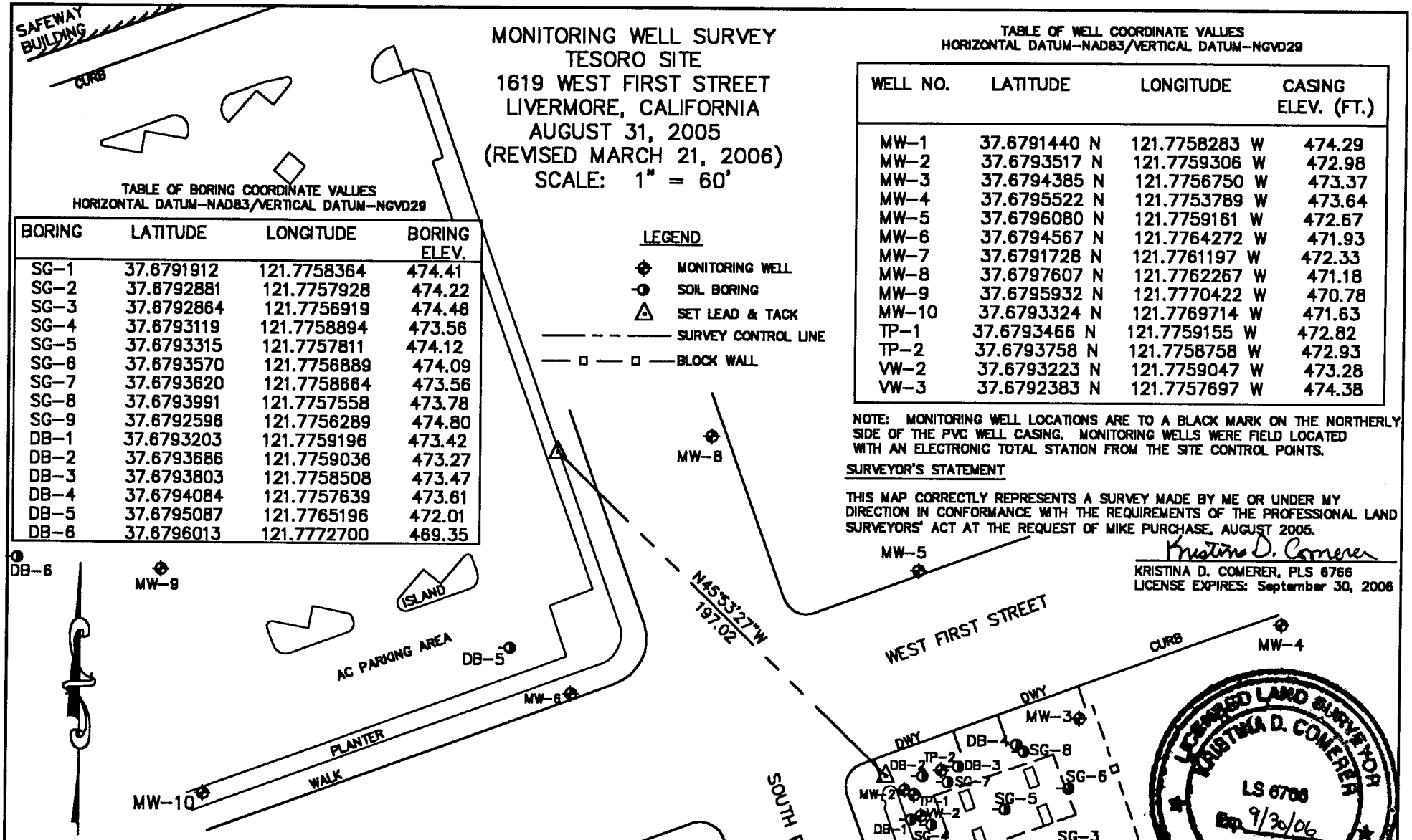


TABLE OF BORING COORDINATE VALUES
HORIZONTAL DATUM–NAD83/VERTICAL DATUM–NGVD29

BORING	LATITUDE	LONGITUDE	BORING ELEV.
SG–1	37.6791912	121.7758364	474.41
SG–2	37.6792881	121.7757928	474.22
SG–3	37.6792864	121.7756919	474.46
SG–4	37.6793119	121.7758894	473.56
SG–5	37.6793315	121.7757811	474.12
SG–6	37.6793570	121.7756889	474.09
SG–7	37.6793620	121.7758664	473.56
SG–8	37.6793991	121.7757558	473.78
SG–9	37.6792596	121.7756289	474.80
DB–1	37.6793203	121.7759196	473.42
DB–2	37.6793686	121.7759036	473.27
DB–3	37.6793803	121.7758508	473.47
DB–4	37.6794084	121.7757639	473.61
DB–5	37.6795087	121.7765196	472.01
DB–6	37.6796013	121.7772700	469.35

LEGEND

- MONITORING WELL
- SOIL BORING
- SET LEAD & TACK
- SURVEY CONTROL LINE
- BLOCK WALL

TABLE OF WELL COORDINATE VALUES
HORIZONTAL DATUM–NAD83/VERTICAL DATUM–NGVD29

WELL NO.	LATITUDE	LONGITUDE	CASING ELEV. (FT.)
MW–1	37.6791440 N	121.7758283 W	474.29
MW–2	37.6793517 N	121.7759306 W	472.98
MW–3	37.6794385 N	121.7756750 W	473.37
MW–4	37.6795522 N	121.7753789 W	473.64
MW–5	37.6796080 N	121.7759161 W	472.67
MW–6	37.6794567 N	121.7764272 W	471.93
MW–7	37.6791728 N	121.7761197 W	472.33
MW–8	37.6797607 N	121.7762267 W	471.18
MW–9	37.6795932 N	121.7770422 W	470.78
MW–10	37.6793324 N	121.7769714 W	471.63
TP–1	37.6793466 N	121.7759155 W	472.82
TP–2	37.6793758 N	121.7758758 W	472.93
VW–2	37.6793223 N	121.7759047 W	473.28
VW–3	37.6792383 N	121.7757697 W	474.38

NOTE: MONITORING WELL LOCATIONS ARE TO A BLACK MARK ON THE NORTHERLY SIDE OF THE PVC WELL CASING. MONITORING WELLS WERE FIELD LOCATED WITH AN ELECTRONIC TOTAL STATION FROM THE SITE CONTROL POINTS.

SURVEYOR'S STATEMENT

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYORS' ACT AT THE REQUEST OF MIKE PURCHASE, AUGUST 2005.

Kristina D. Comerer

KRISTINA D. COMERER, PLS 6766
LICENSE EXPIRES: September 30, 2006

HORIZONTAL DATUM IS NAD83 DERIVED FROM A GPS FAST–STATIC SURVEYING HOLDING CALIFORNIA HIGH PRECISION GEODETIC NETWORK DENSIFICATION (HPGN–D) POINTS CA 04–FK AND CA 04–FL FIXED HORIZONTALLY, AS PUBLISHED FOR EPOCH 1991.35, FROM THE NGS DATA SHEET, IN A LEAST SQUARES ADJUSTMENT OF THE GPS DATA.

VERTICAL DATUM IS NGVD29. FOUND CITY OF LIVERMORE BENCH MARK K2–741 BEING A BRASS PIN IN CONCRETE, DN. 0.4' IN EASTERLY MONUMENT WELL AT THE INTERSECTION OF S. "P" STREET AND RAILROAD AVENUE. PUBLISHED ELEVATION FOR K2–741 IS 467.835 FEET, NGVD29, ON FILE WITH THE CITY OF LIVERMORE.

LICENSED LAND SURVEYOR KRISTINA D. COMERER LS 6766 Exp. 9/30/06 STATE OF CALIFORNIA

CROSS LAND SURVEYING, INC.
2210 MT. PLEASANT ROAD
SAN JOSE, CA 95148
(408) 274–7994

PROJECT NO. 05–32

APPENDIX F

SITE CONCEPTUAL MODEL

Site Conceptual Model
Tesoro Livermore Site, No. 67076
14 June 2006 Update

	Description	Data Tables	Graphics	Reference	Data Gaps	Work Required to Fill Data Gaps	Comments
Regional Setting	**Geology/Stratigraphy** The site is underlain by approximately 100 feet of Quaternary alluvial fan deposits overlaying the Livermore gravels. The Tertiary aged Livermore gravels extend to 600 feet deep and consist of massive beds of rounded gravel cemented by a sandy clay and sandy silt matrix. The alluvial fan deposits consist of semiconsolidated deposits of clay, silt, sand, and gravel. A clay layer is encountered at a depth of 82 feet below grade at the Livermore Arcade Shopping Center (LASC), 140 feet northwest of the site. The north-south trending Livermore fault is mapped one-half mile west of the site.		Bull. 118-2 X section	California Department of Water Resources (DWR) Bulletin 118-2, 1974			
	Hydrogeology The site lies in the Mocho II Subbasin of the Livermore Valley groundwater basin. This area is drained by Arroyo Mocho, which runs from the southeast toward the northwest approximately one-half mile southwest of the site (Figure 1). The Arroyo Mocho also provides groundwater recharge in the area. In the site vicinity, subsurface investigations have found a shallow, upper unconfined water-bearing zone consisting primarily of gravels with sand and clay. Underlying the gravels, an approximately 45-foot-thick, low-permeability clay unit (aquitard) is found at depths of approximately 80 feet below grade at the LASC site, 140 feet northwest of the site. Below the clayey unit is the top of the underlying semiconfined aquifer. Groundwater extraction for municipal water supply occurs in the semiconfined aquifer and in a deeper confined aquifer. No evidence of communication between the shallow water-bearing zone and the underlying aquifers in the site vicinity has been documented. Groundwater elevations in the shallow water-bearing zone and the semiconfined aquifer are similar and indicate that hydraulic connection at some point between these two water-bearing zones is likely. Over the last 13 years, static water levels at the site have ranged from 17 feet below grade in March 1996 to 45 feet below grade in September 2001. The groundwater flow direction generally is to the northwest.		Topographic map CWS#3 well log CWS#8 well log LASC well DMW-01 boring log	DWR Bulletin 118-2, 1974			
	Groundwater Pumping California Water Service (CWS) currently operates water supply wells in the area of the site. Well CWS#8 is approximately 1,000 feet north-northwest from the site in a downgradient direction (B&C map). Former well CWS#3 was located approximately 1,000 feet northwest of the leading edge of the plume. Well CWS#3 pumped at lower rates than CWS#8 and only during summer months until it was decommissioned in 2000.		Well locations (B&C map) CWS#3 well log CWS#8 well log		CWS#3 well destruction details not known. Need complete data set for pumping rates and water quality.	Get CWS#3 well decommissioning details from CWS. Get groundwater quality and pumping rate data from CWS for well CWS#8.	

	Description	Data Tables	Graphics	Reference	Data Gaps	Work Required to Fill Data Gaps	Comments
	Preferential Pathways Well Survey — A 1/2-mile radius well survey conducted by B&C Gas (located 1/4 mile to the east) identified 4 water supply wells (2 municipal and 2 domestic), 1 irrigation well, 3 cathodic protection wells, 6 destroyed wells, 17 abandoned wells, and 112 monitoring wells. Utility Survey – The depth of impacted soil and groundwater at the site is greater than 20 feet below grade. Subsurface utilities in the area are located above a depth of 20 feet; therefore, utilities are not considered a potential pathway. A soil gas survey conducted at the site did not indicate the presence of any source areas in the vadose zone soil above the groundwater. Analysis – Municipal water supply wells CWS#3 and CWS#8 are approximately 1,000 feet downgradient of the leading edge of the plume. Both wells have a low risk of impact from the site but may be a conduit for vertical migration in the future.				Need additional information for abandoned and/or decommissioned wells in area.	Obtain information for well survey. Include map and summary table of construction and destruction details.	
	Nearby Release Sites Livermore Arcade Shopping Center (800 feet northwest, downgradient) Two former dry cleaners had a known release from a tetrachloroethene (PCE) discharge pipe at a floor drain and a breach in the sewer lateral. PCE, trichloroethene (TCE), and degradation products were detected in the shallow aquifer. Groundwater monitoring is continuing as part of a non-attainment zone; oversight by the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). Unocal #4186 (400 feet east, cross gradient) 1771 First Street; T0600101777 Operating gas station with groundwater impacted by total petroleum hydrocarbons as gasoline (TPHg), benzene, and methyl tert-butyl ether (MTBE). Ozone injection is being used to treat the source area. The highest TPHg, benzene, and MTBE concentrations were 12,000, 120, and 4,700 micrograms per liter (µg/l), respectively, in June 2005. A southwesterly gradient was observed during the operation of the ozone injection system. The historical gradient is to the northwest. Desert Petroleum BP (B&C Gas; 1,400 feet east, cross gradient) 2008 First Street; T0600100930 Operating gas station is impacted with TPHg, benzene, and MTBE present in groundwater. The highest TPHg, benzene, and MTBE concentrations were 18,000, 1,500, and 840 µg/l, respectively, in at well MW-5 in September 2004.	Depth to water and concentration table (09/04) Depth to water and concentration table (06/05) Concentration table (EDF: 09/04)	PCE isoconcentration contours, September 2004 Deep monitoring well DMW-01 boring log TPHg, benzene, and MTBE groundwater maps (06/05) Well locations (B&C map)	Orion Environmental Inc., 2004 Shaw Environmental, Inc., 2005			

Site Conceptual Model
Tesoro Livermore Site, No. 67076
14 June 2006 Update

	Description	Data Tables	Graphics	Reference	Data Gaps	Work Required to Fill Data Gaps	Comments
Site Setting	**Site Geology** The site and vicinity are underlain by coarse-grained alluvial sediments consisting primarily of gravels with sands and clay. The subsurface soil encountered during drilling generally consisted of silty clays to sands and gravels from the ground surface to approximately 40 feet below grade and sands and gravels from approximately 40 to 82 feet below grade with occasional layers of clayey silt. Stiff and cemented sands were identified in CPT borings DB-5 and DB-6 from approximately 63 to 82 feet below grade. The regional 45-foot-thick silty clay aquitard has been identified below the coarse-grained sediments at a depth of approximately 82 feet below grade. The deposits vary laterally and may include channel deposits.		Site cross sections Boring logs for January and February 2006 Investigation	Arctos, 2006			
	Groundwater Conditions Depth to groundwater was approximately 26 to 30 feet below ground surface (441 to 448 feet above mean sea level) with an estimated gradient of 0.02 to the northwest in February 2006. The hydraulic gradient has ranged from 0.01 to 0.03 since 1993. Water levels increased by 4 to 5 feet since November 2005. Groundwater elevations at the site have varied over time with the depth to water ranging from 17 to 45 feet below grade. Hydraulic conductivity of the shallow water-bearing zone is estimated at 0.003 feet per day (ft/d) at well MW-2 (AMV, 1994).	Well and groundwater elevations	Groundwater elevation contours	Arctos, 2006 AMV, 1994			
	Source Area In November 1992, three underground storage tanks (USTs) and associated product piping were removed from the site. Soil samples collected below the USTs at a depth of 14 feet below grade contained TPHg concentrations of 600 and 1,400 milligrams per kilogram (mg/kg) at the west end of the unleaded plus and unleaded tanks, respectively. The UST excavation was overexcavated to a depth of 19 feet below grade for installation of the new USTs. A TPHg concentration of 4,700 mg/kg was detected at a depth 19 feet below grade at the southwest corner of the tank pit. This area was overexcavated to a depth of 27 feet to remove impacted soil until TPHg was detected at 490 mg/kg at a depth of 27 feet below grade. The only detection of benzene at the site was a concentration of 1.4 mg/kg at this depth. TPHg was also detected under the product piping at the eastern pump island at concentrations of 2.7 and 4.4 mg/kg. A total of 1,200 cubic yards of soil were excavated and disposed of off site. Soil samples were not analyzed for MTBE. A detailed summary of site investigation activities can be found in the chronology. In January 2006, Arctos collected nine shallow soil gas samples at the site to identify possible source areas in the vadose zone. Benzene and MTBE were not detected in the soil gas samples collected. No existing source areas for MTBE are present in the vadose zone that would lead to further increasing concentrations in the groundwater.	Soil analytical table	Site cross sections	Arctos, 2006			

	Description	Data Tables	Graphics	Reference	Data Gaps	Work Required to Fill Data Gaps	Comments
	Source Area (continued) In February 2006, soil samples were collected from onsite borings DB-1 through DB-4. The only detected concentrations in the vadose zone (above 30 feet below grade) were in boring DB-3 downgradient of the dispenser islands. MTBE was detected at boring DB-3 at concentrations of 5.6 and 18 micrograms per kilogram (μg/kg) at depths of 10 and 20 feet below grade, respectively. The highest TPHg and benzene concentrations of 140 milligrams per kilogram (mg/kg) and 3,100 μg/kg, respectively, were detected at a depth of 48 feet below grade in boring DB-1, downgradient of the USTs. Boring DB-2 had a benzene concentration of 130 μg/kg at a depth of 43 feet below grade and boring DB-3 had a TPHg concentration of 120 mg/kg at a depth of 66 feet below grade. These concentrations are above the published Environmental Screening Levels (ESLs), established by the RWQCB, of 100 mg/kg for TPHg and 44 μg/kg for benzene. The highest MTBE and TBA concentrations were detected in borings DB-2, DB-3, and DB-4, located downgradient of the dispenser islands (Table 5). MTBE concentrations exceeding the ESL (23 mg/kg) were encountered at boring DB-3 from the water table to the total boring depth (30 to 66 feet below grade). TBA concentrations exceeding the ESL (73 mg/kg) were also detected in DB-3 between 30 and 63 feet below grade. MTBE and TBA concentrations generally decreased with depth. One soil sample was collected from offsite boring DB-5 at a depth of 90 feet below grade. TPHg and benzene were detected at concentrations of 1.5 mg/kg and 17 μg/kg, respectively. MTBE and TBA were not detected. These concentrations are below the ESLs for each compound.						
	Dissolved plume Groundwater monitoring has been conducted at the site since June 1993. The following results were reported during the 9 February 2006 monitoring event: □ The highest TPHg and benzene concentrations of 25,000 and 3,300 μg/l, respectively, were reported at well MW-2. The highest MTBE and tert-butyl alcohol (TBA) concentrations of 12,000 and 2,800 μg/l, respectively, were reported at well VW-2. □ Elevated benzene and MTBE concentrations in groundwater (340 and 910 μg/l, respectively) are present approximately 140 feet downgradient of the site at well MW-6. The highest MTBE concentration reported to date was a concentration of 63,000 μg/l at well TP-2, located downgradient of the dispenser islands. The top of the well screen for well MW-2 is currently 7 feet below the water table and at the top of the screen for wells TP-1 and TP-2.	Groundwater analytical results Well construction details	Benzene concentration contours MTBE concentration contours Concentrations versus time for wells MW-2 and MW-6 Site cross sections	Arctos, 2006	Impacted groundwater is present below the screened intervals of the existing groundwater monitoring wells (below 55 feet below grade); however, the highest concentrations are present within the existing screen intervals.		

	Description	Data Tables	Graphics	Reference	Data Gaps	Work Required to Fill Data Gaps	Comments
	Dissolved Plume (continued) In February 2006, 10 grab groundwater samples were collected from borings DB-1 through DB-6. Grab samples from all six borings contained detectable concentrations of TPHg and benzene. Only boring DB-6 (furthest downgradient from site) had nondetected concentrations of MTBE and TBA. Boring DB-2 contained the highest concentrations of TPHg and benzene at 120,000 and 5,200 µg/l, respectively, from 51 to 55 feet below grade. Boring DB-2 also had the highest concentrations of MTBE and TBA at 38,000 and 2,700 µg/l, respectively, from 41 to 45 feet below grade.						
	Remediation A soil and groundwater remediation system, including 27 dual-completion groundwater air-sparing and vapor extraction wells (7 on site and 20 off site at LASC site) was installed in September and October 1995. The system operated from May 1996 through February 1997. Groundwater concentrations in onsite well MW-2 decreased by 73 and 78 percent for TPHg and benzene, respectively, and concentrations in offsite well MW-6 decreased by 77 and 60 percent for TPHg and benzene, respectively. Groundwater grab samples were collected from six offsite vapor extraction wells and LASC groundwater well MW-23 in March 1997. Only well VE-10 had detectable TPHg and benzene concentrations of 440 and 5.1 µg/l, respectively. A risk assessment was conducted to evaluate the risk of remaining concentrations in the groundwater. The assessment concluded results were within acceptable limits for site-specific conditions.		Remediation system layout Groundwater sampling locations	BDM International, Inc. (BDM), 1997			
	Evaluation of Potential Impacts to Water Supply Wells The leading edge of the benzene and MTBE plumes at well MW-9 are approximately 1,000 feet from water supply well CWS#8. Based on the age of the plume and the distance to the well, the site has a very low potential to impact well CWS#8.						