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10:57 am, Feb 27, 2009

Alameda County
Environmental Health

27 February 2009
Project No. 01LV

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

Subject: Fourth Quarter 2008 Status Report
1619 1st Street, Livermore, California
Tesoro No. 67076 (Former Beacon 3604); ACEH Case No. RO0434

Dear Mr. Wickham:

Arctos Environmental (Arctos), on behalf of Tesoro Companies, Inc. (Tesoro), has prepared this letter report summarizing project tasks completed during the fourth quarter 2008 at the subject site (Figure 1).

Executive Summary

Arctos conducted quarterly groundwater monitoring at the site on 13 October 2008. Only 7 of the 18 wells had sufficient water for groundwater monitoring due to a 5-foot decrease in water levels since July 2008. Arctos also conducted baseline sampling of injection wells IP-8 and IP-9 on 16 December 2008, which were installed in the fourth quarter 2008. The highest total petroleum hydrocarbons as gasoline (TPHg) and benzene concentrations of 120,000 and 7,800 micrograms per liter (µg/l), respectively, were at injection well IP-8, located west of the underground storage tanks (USTs). The highest methyl tert-butyl ether (MTBE) concentration of 3,700 µg/l was at well IP-4, located adjacent to the dispenser islands. Arctos also received comments to the remediation system design from the City of Livermore on 13 November 2008 and began incorporating comments.

The following activities are scheduled to be completed during the first quarter of 2009:

- Installation and sampling of one additional oxygen injection well

- Quarterly groundwater monitoring
- Incorporation of City of Livermore comments and resubmit remediation system permit application
- Installation and start-up of source area remediation system.

Site Background

The site description and background are included in Arctos's IRAP dated 21 March 2008 (Arctos, 2008).

Field Activities

Arctos's subcontractor, Blaine Tech Services, Inc. (Blaine Tech), of San Jose, California, performed groundwater monitoring on 13 October 2008. Samples were collected from wells MW-1 through MW-3, and DW-1 through DW-4 (Figure 2). Groundwater monitoring was performed in accordance with the guidelines of the California Underground Storage Tank Regulations, Title 23, Division 3, Chapter 16, California Code of Regulations. Groundwater sampling quality assurance/quality control (QA/QC) procedures are in Attachment A. Field data sheets are in Attachment B.

Arctos retrieved biotrap samplers in selected monitoring wells on 13 October 2008 and shipped them to Microbial Insights for analysis. Biotrap samples were analyzed for baseline biological activity in accordance with Arctos's IRAP. Microbiological samples will be collected and analyzed from selected wells following start-up of the remediation system and semiannually thereafter. Results will be discussed in system progress updates.

Analytical Program

The groundwater samples were analyzed in accordance with the analytical plan in Attachment A.

Groundwater Results

The groundwater elevations were recorded at approximately 414 to 423 feet above mean sea level (51 to 55 feet below ground surface). Water levels were 5.2 to 5.9 feet lower compared to the July 2008 event (Table 1). Only 7 of the 18 monitoring wells had sufficient water for groundwater monitoring due to the significant decrease in water levels during the fourth quarter. The water level data indicate that the general direction of water flow is toward the northwest with an estimated gradient of 0.017 (1 foot/59 feet; Figure 2). Baseline depth to water measurements for injection wells IP-8 and IP-9 are in Attachment B. Historical water elevations are in Attachment C.

The highest TPHg and benzene concentrations of 120,000 and 7,800 µg/l, respectively, were at injection well IP-8, located west of the USTs. The highest MTBE concentration of 3,700 µg/l was at well IP-4, located adjacent to the dispenser islands. TPHg and MTBE results in injection wells IP-8 and IP-4 indicate separate releases from the USTs and the dispenser islands. Groundwater analytical results are summarized in Table 2, and injection well analytical results are summarized in Table 3. Elevated TPHg, benzene, and MTBE concentrations in groundwater (7,300, 910 and 280 µg/l, respectively) were also present approximately 170 feet downgradient of the site at well DW-2. Figures 3, 4, and 5 show the isoconcentration contours for TPHg, benzene, and MTBE, respectively. Historical analytical results are in Attachment D, and the laboratory report and the chain-of-custody form are in Attachment E.

Well Installation

Well installation occurred in the fourth quarter 2008 as described in Arctos's work plan for additional well installation dated 18 September 2008. The work plan was approved by Alameda County Environmental Health (ACEH) in a letter dated 25 September 2008. The completed scope of work for the well installation includes the following tasks:

- Obtained permits from Zone 7 Water Agency for the installation of two oxygen injection wells and one shallow monitoring/soil vapor extraction well
- Installed two oxygen injection wells, designated as IP-8 and IP-9, and one shallow monitoring/soil vapor extraction well, designated as MW-11
- Developed the oxygen injection wells 72 hours after installation.

Well Installation

Gregg Drilling & Testing, Inc. (Gregg Drilling), of Martinez, California, drilled one soil boring for oxygen injection well IP-8 on 2 October 2008 using a hollow-stem auger limited access rig. Soil samples were collected at 5 feet below grade and 5-foot intervals thereafter for visual logging and vapor screening. A flame was released from the borehole during drilling. Installation activities were immediately stopped, and Arctos concluded that it would not be safe to continue drilling at this location with a hollow-stem auger rig. Boart Longyear of Yuba City, California, was contracted to complete the installation of wells IP-8, IP-9, and MW-11 on 10 and 11 November 2008 using a limited access sonic rig. Wells IP-9 and MW-11 were blind drilled to total depth. The boring and well construction logs are in Attachment F. Drilling and well installation QA/QC procedures are in Attachment G.

Well Development
Boart Longyear developed wells IP-8 and IP-9 on 13 November 2008 by surging, bailing, and pumping to (1) remove fines from the filter pack and well screen and (2) reduce sediment in the water. Approximately 5 to 10 casing volumes of water were removed from the wells. Well MW-11 was not developed because it had insufficient water. The well development logs are in Attachment H.

Baseline Sampling
Arctos's subcontractor, Blaine Tech, of San Jose, California, performed baseline sampling of oxygen injection wells IP-8 and IP-9 on 16 December 2008. Groundwater sampling QA/QC procedures and the analytical plan are in Attachment A. Field data sheets are in Attachment B.

Wells IP-8 and IP-9 contained TPHg concentrations of 120,000 and 110,000 µg/l, respectively, and benzene concentrations of 7,800 µg/l in both wells. Well MW-11 was not sampled because the well contained insufficient water. Groundwater analytical results are summarized in Table 3 and are shown on Figures 3, 4, and 5. The laboratory report and the chain-of-custody form are in Attachment E.

Conclusions

Results of the groundwater sampling and well installation indicate the following conclusions:

- Onsite groundwater remediation is required to decrease the mass flux from the source area
- An additional oxygen injection well is required southwest of IP-9 to increase oxygen area of influence and assist in delineating the horizontal extent of impacted groundwater
- The major sources of TPHg and MTBE are former releases from the USTs and dispenser islands, respectively.

Recommendations

Based on the activities proposed in the IRAP and the results of the groundwater monitoring and well installation, Arctos will perform the following tasks during the first quarter of 2009:

- Install and sample one additional oxygen injection well southeast of well IP-9 and east of well MW-1 to delineate the impacted groundwater plume

- ☐ Conduct quarterly groundwater monitoring
- ☐ Complete incorporation of City of Livermore comments and resubmit remediation system permit application
- ☐ Install and start the source area remediation system.

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

Very truly yours,

ARCTOS ENVIRONMENTAL

Matthew J. Nelson
Senior Staff Engineer

Michael P. Purchase, P.E.
Senior Project Manager

REGISTERED PROFESSIONAL ENGINEER
MICHAEL P. PURCHASE
No. C71230
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STATE OF CALIFORNIA

Copy: Jeffrey M. Baker, P.E. – Tesoro Companies, Inc.
Colleen Winey – Zone 7 Water Agency

Attachments: Table 1 – Well and Groundwater Elevations
Table 2 – Groundwater Analytical Results
Table 3 – Groundwater Analytical Results – Injection Wells
Figure 1 – Site Location Map
Figure 2 – Groundwater Elevation Contours
Figure 3 – TPHg Concentration Contours
Figure 4 – Benzene Concentration Contours
Figure 5 – MTBE Concentration Contours
Attachment A – Groundwater Sampling QA/QC Procedures
Attachment B – Field Data Sheets
Attachment C – Historical Well and Groundwater Elevations
Attachment D – Historical Groundwater Analytical Results
Attachment E – Laboratory Analytical Reports and Chain-of-Custody Forms
Attachment F – Boring and Well Construction Logs
Attachment G – Drilling and Well Installation QA/QC Procedures
Attachment H – Well Development Logs
Attachment I – Waste Manifests

References

Arctos Environmental, 2008. *Interim Remedial Action Plan for Groundwater, 1619 1st Street, Livermore, California, Tesoro Station No. 67076, Former Beacon Station No. 3604, ACEH Case No. RO0434*, 21 March.

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-1	2/14/08	34.74	474.29	439.55
	5/8/08	36.15		438.14
	7/23/08	45.76		428.53
	10/13/08	51.00		423.29
MW-2	2/14/08	36.31	472.98	436.67
	5/8/08	36.70		436.28
	7/23/08	45.78		427.20
	10/13/08	51.30		421.68
MW-3	2/14/08	34.73	473.37	438.64
	5/8/08	35.60		437.77
	7/23/08	45.00		428.37
	10/13/08	50.70		422.67
MW-4	2/14/08	34.53	473.64	439.11
	5/8/08	35.55		438.09
	7/23/08	43.87		429.77
	10/13/08	Dry [(c)]		--
MW-5	2/14/08	35.66	472.67	437.01
	5/8/08	36.60		436.07
	7/23/08	Dry		--
	10/13/08	Dry		--
MW-6	2/14/08	38.67	471.93	433.26
	5/8/08	38.50		433.43
	7/23/08	Dry		--
	10/13/08	Dry		--
MW-7	2/14/08	36.51	472.33	435.82
	5/8/08	36.00		436.33
	7/23/08	44.42		427.91
	10/13/08	Dry		--
MW-8	2/14/08	35.55	471.18	435.63
	5/8/08	36.64		434.54
	7/23/08	Dry		--
	10/13/08	Dry		--

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-9	2/14/08	39.32	470.78	431.46
	5/8/08	38.90		431.88
	7/23/08	Dry		--
	10/13/08	Dry		--
MW-10	2/14/08	39.71	471.63	431.92
	5/8/08	37.55		434.08
	7/23/08	Dry		--
	10/13/08	Dry		--
MW-11	12/16/08	Dry	473.26	--
VW-2	2/14/08	35.55	473.28	437.73
	5/8/08	35.31		437.97
	7/23/08	Dry		--
	10/13/08	Dry		--
VW-3	2/14/08	Dry	474.38	--
	5/8/08	34.80		439.58
	7/23/08	Dry		--
	10/13/08	Dry		--
TP-1	2/14/08	36.17	472.82	436.65
	5/8/08	36.17		436.65
	7/23/08	Dry		--
	10/13/08	Dry		--
TP-2	2/14/08	35.62	472.93	437.31
	5/8/08	36.62		436.31
	7/23/08	Dry		--
	10/13/08	Dry		--
DW-1	5/22/08	37.30	472.85	435.55
	7/23/08	45.55		427.30
	10/13/08	51.40		421.45
DW-2	5/22/08	39.80	471.61	431.81
	7/23/08	48.25		423.36
	10/13/08	53.40		418.21
DW-3	5/22/08	40.20	470.33	430.13

TABLE 1

WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
DW-3	7/23/08	49.09	470.33	421.24
(cont.)	10/13/08	54.62		415.71
DW-4	5/22/08	40.20	468.48	428.28
	7/23/08	49.50		418.98
	10/13/08	54.90		413.58

(a) 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.
Benchmark K2-741, elevation is 467.835 feet above MSL.

(b) Potentiometric Surface Elevation = (Casing Elevation - Depth to Water)

(c) Depth of groundwater assumed to be below screened interval; well had 6 inches or less of water.

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	TPHg[a] (ug/l)	Benzene[a] (ug/l)	Toluene[a] (ug/l)	Ethylbenzene[a] (ug/l)	Total Xylenes[a] (ug/l)	MTBE[a] (ug/l)	DIPE[a] (ug/l)	ETBE[a] (ug/l)	TAME[a] (ug/l)	TBA[a] (ug/l)	Methanol[a] (ug/l)	Ethanol[a] (ug/l)	1,2-DCA[a] (ug/l)	EDB[a] (ug/l)
MW-1	2/14/08	1,700	3.3	17	38	83	ND<0.5[b]	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	620	1.8	ND<0.5	12	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
	7/23/08	270	0.52	ND<0.5	3.9	1.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
	10/13/08	730	ND<0.5	ND<0.5	0.68	0.80	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<10	ND<0.5	ND<0.5
MW-2	2/14/08	31,000	5,400	450	1,900	2,000	1,200	ND<15	ND<15	16	410	ND<1,500	ND<150	ND<15	ND<15
	5/8/08	29,000	3,200	620	1,400	1,700	580	ND<5	ND<5	10	210	ND<1,000	ND<50	ND<5	ND<5
	7/23/08	25,000	3,800	220	1,600	1,000	780	ND<5	ND<5	14	470	ND<900	ND<50	ND<5	ND<5
	10/13/08	31,000	7,600	160	1,800	440	1,600	ND<9	ND<9	20	710	ND<1,500	ND<90	ND<9	ND<9
MW-3	2/14/08	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.83	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	57	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
	7/23/08	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
	10/13/08	280	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	61	ND<5	ND<0.5	ND<0.5
MW-4	2/14/08	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
	5/8/08	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
	7/23/08	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
	10/13/08	NS[c]	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	2/14/08	980	ND<0.5	ND<0.5	2.1	ND<0.5	1.0	ND<0.5	ND<0.5	ND<0.5	34	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	580	ND<0.5	ND<0.5	1.8	ND<0.5	0.60	ND<0.5	ND<0.5	ND<0.5	6.1	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	2/14/08	14,000	2,000	63	750	190	810	ND<2.5	ND<2.5	7.7	600	ND<250	ND<25	ND<2.5	ND<2.5
	5/8/08	15,000	1,700	59	700	130	540	ND<2.5	ND<2.5	5.9	410	ND<2,000	ND<25	ND<2.5	ND<2.5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	2/14/08	1,600	1.2	ND<0.5	4.5	1.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	1,400	2.2	0.74	2.8	0.93	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	2,300	3.9	1.4	8.9	5.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-8	2/14/08	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
	5/8/08	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
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	2/14/08	3,300	68	2.1	110	7.8	16	ND<0.5	ND<0.5	ND<0.5	13	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	1,200	8.2	0.52	4.0	0.74	5.9	ND<0.5	ND<0.5	ND<0.5	5.4	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	TPHg[a] (ug/l)	Benzene[a] (ug/l)	Toluene[a] (ug/l)	Ethylbenzene[a] (ug/l)	Total Xylenes[a] (ug/l)	MTBE[a] (ug/l)	DIPE[a] (ug/l)	ETBE[a] (ug/l)	TAME[a] (ug/l)	TBA[a] (ug/l)	Methanol[a] (ug/l)	Ethanol[a] (ug/l)	1,2-DCA[a] (ug/l)	EDB[a] (ug/l)
MW-10	2/14/08	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
	5/8/08	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
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-11	12/16/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
VW-2	2/14/08	5,700	180	14	150	120	530	ND<2.5	ND<2.5	4.1	5,000	ND<250	ND<25	ND<2.5	ND<2.5
	5/8/08	3,000	40	3.8	32	34	270	ND<1.5	ND<1.5	2.7	4,500	ND<250	ND<15	ND<1.5	ND<1.5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
VW-3	2/14/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/08	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
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TP-1	2/14/08	18,000	1,100	49	1,200	910	7,000	ND<15	ND<15	58	4,200	ND<1,500	ND<150	ND<15	ND<15
	5/8/08	12,000	890	54	770	380	2,500	ND<5	ND<5	22	3,400	ND<2,500	ND<50	ND<5	ND<5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TP-2	2/14/08	12,000	920	28	850	740	17,000	ND<25	ND<25	120	5,900	ND<4,000	ND<250	ND<25	ND<25
	5/8/08	7,400	710	10	510	110	6,400	ND<8	ND<8	64	5,200	ND<1,2000	ND<80	ND<8	ND<8
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DW-1	5/22/08	5,100	470	150	210	570	100	ND<0.9	ND<0.9	0.98	76	ND<90	ND<9	ND<0.9	ND<0.9
	7/23/08	560	43	5.2	18	40	16	ND<0.5	ND<0.5	ND<0.5	21	ND<100	ND<5	ND<0.5	ND<0.5
	10/13/08	2,800	370	15	120	78	140	ND<0.5	ND<0.5	1.2	220	ND<300	ND<80	ND<0.5	ND<0.5
DW-2	5/22/08	11,000	1,300	170	460	230	620	ND<2.5	ND<2.5	9.6	870	ND<400	ND<25	ND<2.5	ND<2.5
	7/23/08	7,600	980	44	180	55	420	ND<2	ND<2	5.7	720	ND<200	ND<20	ND<2	ND<2
	10/13/08	7,300	910	23	120	18	280	ND<1.5	ND<1.5	3.1	650	ND<2,000	ND<50	ND<1.5	ND<1.5
DW-3	5/22/08	4,700	8.7	2.1	120	200	0.86	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	2,800	8.1	1.4	94	100	2.8	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	4,100	59	10	160	70	1.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<80	ND<0.5	ND<0.5
DW-4	5/22/08	1,200	4.2	8.6	16	200	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	91	0.79	ND<0.5	6.5	7.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	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	43	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) Not sampled; well dry during sampling event.

TABLE 3

GROUNDWATER ANALYTICAL RESULTS - INJECTION WELLS
TESORO - LIVERMORE, 67076

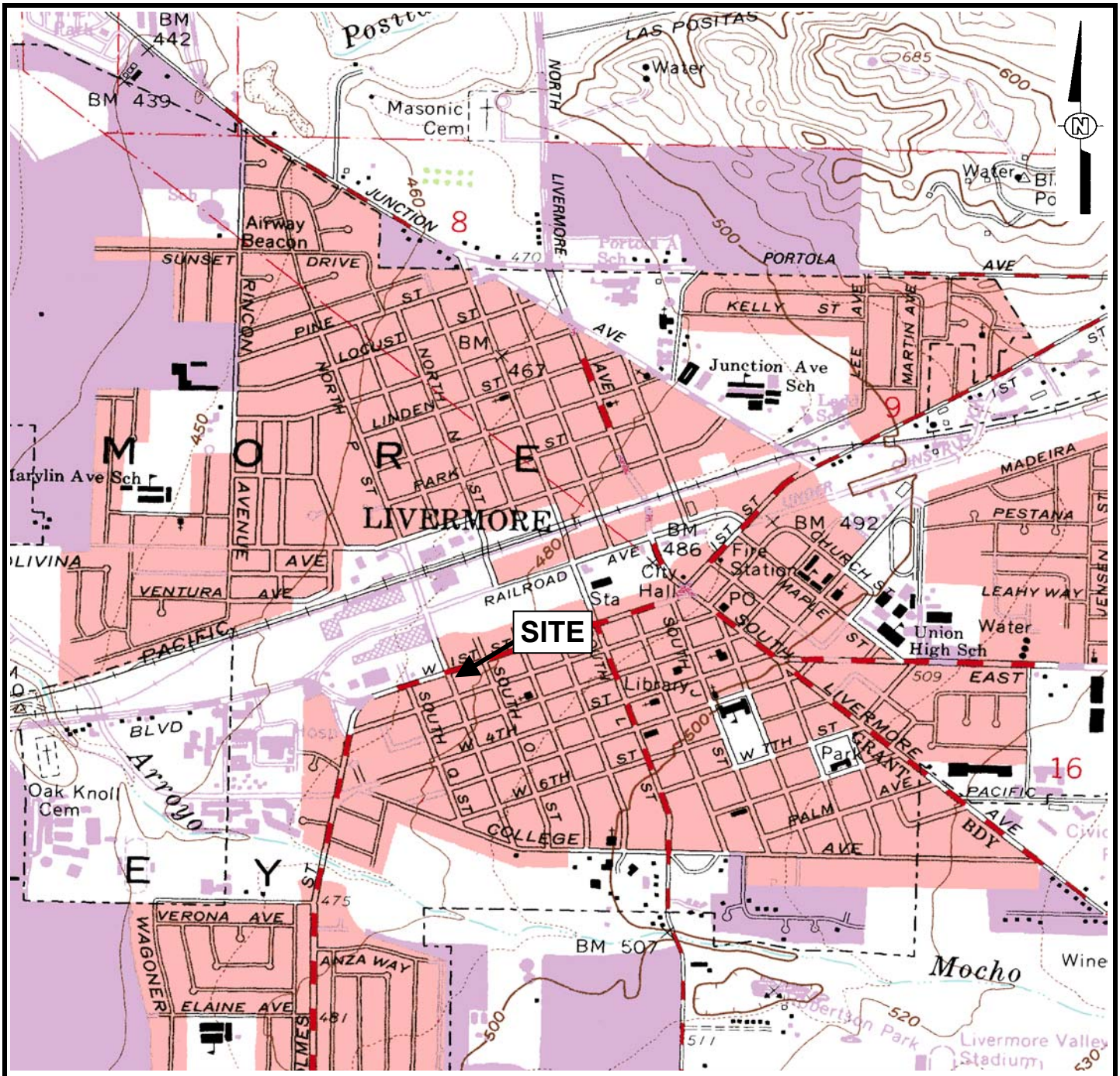
Monitoring Well	Sample Date	TPHg[a] (ug/l)	Benzene[a] (ug/l)	Toluene[a] (ug/l)	Ethylbenzene[a] (ug/l)	Total Xylenes[a] (ug/l)	MTBE[a] (ug/l)	DIPE[a] (ug/l)	ETBE[a] (ug/l)	TAME[a] (ug/l)	TBA[a] (ug/l)	Methanol[a] (ug/l)	Ethanol[a] (ug/l)	1,2-DCA[a] (ug/l)	EDB[a] (ug/l)
IP-1	7/23/08[b]	62,000	2,100	6,800	2,700	11,000	16	ND<15[c]	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
	10/13/08	55,000	3,100	3,300	2,300	7,700	ND<15	ND<15	ND<15	ND<15	98	ND<1,500	ND<150	ND<15	ND<15
IP-2	7/23/08[b]	5,500	160	43	130	350	10	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	10/13/08	13,000	1,900	58	600	630	180	ND<0.9	ND<0.9	9.4	46	ND<90	ND<20	ND<0.9	ND<0.9
IP-3	7/23/08[b]	1,100	23	14	7.5	90	32	ND<0.5	ND<0.5	ND<0.5	32	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	1,700	83	4.7	11	54	72	ND<0.5	ND<0.5	0.84	71	ND<50	ND<8	ND<0.5	ND<0.5
IP-4	7/23/08[b]	7,600	130	45	240	750	940	ND<1.5	ND<1.5	6.9	890	ND<150	ND<15	ND<1.5	ND<1.5
	10/13/08	4,200	110	11	78	310	3,700	ND<1.5	ND<1.5	7.1	15,000	ND<2,000	ND<15	ND<1.5	ND<1.5
IP-5	7/23/08[b]	2,000[d]	3.0	17	5.1	31	4.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	720	14	13	8.7	32	19	ND<0.5	ND<0.5	ND<0.5	26	ND<50	ND<5	ND<0.5	ND<0.5
IP-6	7/23/08[b]	4,400	260	78	98	340	180	ND<0.5	ND<0.5	1.6	190	ND<80	ND<9	ND<0.5	ND<0.5
	10/13/08	1,400	150	1.6	1.5	3.5	7.4	ND<0.5	ND<0.5	ND<0.5	10	ND<50	ND<50	ND<0.5	ND<0.5
IP-7	7/23/08[b]	4,200	190	12	99	190	49	ND<0.9	ND<0.9	1.1	58	ND<90	ND<9	ND<0.9	ND<0.9
	10/13/08	6,000	350	6.6	150	60	97	ND<0.9	ND<0.9	2.5	76	ND<90	ND<50	ND<0.9	ND<0.9
IP-8	12/16/08[b]	120,000	7,800	20,000	3,500	16,000	ND<40	ND<40	ND<40	ND<40	ND<200	ND<4,000	ND<400	ND<40	ND<40
IP-9	12/16/08[b]	110,000	7,800	23,000	2,800	16,000	ND<40	ND<40	ND<40	ND<40	ND<200	ND<4,000	ND<400	ND<40	ND<40

(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 (ug/l).

(b) Baseline remediation system values.

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

(d) Primarily compounds not found in typical Gasoline



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**	

DW-4 (413.58)
MW-9 (Dry)
DW-3 (415.71)
Safeway Parking Lot
DW-2 (418.21)
MW-8 (Dry)
South P Street
Hollywood Video
MW-5 (Dry)
MW-4 (Dry)
MW-6 (Dry)
Planter
MW-10 (Dry)
IP-5 (422.00)
IP-4 (422.13)
DW-1 (421.45)
TP-2
IP-3 (421.86)
IP-7 (420.99)△
Driveway
MW-3 (422.67)
IP-6△ (422.31)
MW-2 (421.68)
Dispenser Islands
Canopy
Air/Water
TP-1
VW-2
IP-2 (421.81)
VW-3
IP-1 (421.86)
USTs
IP-8 (422.65)
Station Building
MW-11 (Dry)
MW-7 (Dry)
IP-9 (420.96)
Residence
MW-1 (423.29)
Fosters Freeze Restaurant
1st Street
414
415
416
417
418
419
420
421
422
423
N

Legend

MW-7 ⊕ Groundwater Monitoring Well With Groundwater Elevation (Feet, MSL) Measured 13 October 2008

DW-1 ⊞ Deep Groundwater Monitoring Well with Groundwater Elevation (Feet, MSL) Measured 13 October 2008

IP-1 ▲ Injection Well with Groundwater Elevation (Feet, MSL) Measured 13 October and 16 December 2008

IP-6 △ Angled Injection Well Screen Location With Groundwater Elevation (Feet, MSL) Measured 13 October 2008

VW-2 ⊞ Vapor Extraction Well

TP-2 ⊗ Temporary Monitoring Well

423 Goundwater Elevation Contour

0 30' 60'
SCALE

REVISION	NO.	BY	DATE	DESCRIPTION
2	0	MY	7/31/08	Second Quarter 2008 Monitoring Report
	1	MY	10/31/08	Third Quarter 2008 Monitoring Report
	2	MY	1/30/09	Fourth Quarter 2008 Monitoring Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

GROUNDWATER ELEVATION CONTOURS

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

FILE NO. 01LV11B-20402.DWG

FIGURE 2

01LV11B-20402.dwg 2/12/2009 4:10PM

Legend

- MW-7 ⊕ Groundwater Monitoring Well with 23 July 2008 and 13 October 2008 Total Petroleum Hydrocarbons as Gasoline (TPHg) Results in µg/L
- DW-1 ⊞ Deep Groundwater Monitoring Well with 23 July 2008 and 13 October 2008 TPHg Results in µg/L
- IP-1 ▲ Injection Well with 23 July 2008 and 13 October 2008 TPHg Results in µg/L
- IP-6 △ Angled Injection Well Screen Location with 23 July and 13 October 2008 TPHg Results in µg/L
- VW-2 # Vapor Extraction Well with 23 July 2008 and 13 October 2008 TPHg Results in µg/L
- TP-2 ⊗ Temporary Monitoring Well with 23 July 2008 and 13 October 2008 TPHg Results in µg/L
- 1,000 TPHg Concentration Contour (µg/L), Queried Where Uncertain
- ND Not Detected
- NS Not Sampled
- (270/730) Previous Quarter/Current Quarter TPHg Results in µg/L

0 30' 60'
SCALE

REVISION	NO.	BY	DATE	DESCRIPTION
2	0	MY	7/31/08	Second Quarter 2008 Monitoring Report
	1	MY	10/31/08	Third Quarter 2008 Monitoring Report
	2	MY	1/30/09	Fourth Quarter 2008 Monitoring Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

TPHg CONCENTRATION CONTOURS

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

FILE NO. OILVIIB-20502.DWG

FIGURE 3

2/12/2009 4:29PM 01LV11B-20502.dwg

Legend

- MW-7 ⊕ Groundwater Monitoring Well with 23 July 2008 and 13 October 2008 Benzene Results in µg/L
- DW-1 ⊞ Deep Groundwater Monitoring Well with 23 July 2008 and 13 October 2008 Benzene Results in µg/L
- IP-1 ▲ Injection Well with 23 July 2008 and 13 October 2008 Benzene Results in µg/L
- IP-6 △ Angled Injection Well Screen Location with 23 July 2008 and 13 October 2008 Benzene Results in µg/L
- VW-2 ⊞ Vapor Extraction Well with 23 July 2008 and 13 October 2008 with 23 July 2008 and 13 October 2008 Benzene Results in µg/L
- TP-2 ⊗ Temporary Monitoring Well with 23 July 2008 and 13 October 2008 Benzene Results in µg/L
- 1,000 Benzene Concentration Contour (µg/L), Queried Where Uncertain
- ND Not Detected
- NS Not Sampled
- (0.52/ND<0.5) Previous Quarter/Current Quarter Benzene Results in µg/L

0 30' 60'
SCALE

REVISION	NO.	BY	DATE	DESCRIPTION
2	0	MY	7/31/08	Second Quarter 2008 Monitoring Report
	1	MY	10/31/08	Third Quarter 2008 Monitoring Report
	2	MY	1/30/09	Fourth Quarter 2008 Monitoring Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

BENZENE CONCENTRATION CONTOURS

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

FILE NO. 01LV11B-20602.DWG

FIGURE 4

01LV11B-20602.dwg 2/13/2009 5:17PM

Legend

- MW-7 ⊕ Groundwater Monitoring Well with 23 July 2008 and 13 October 2008 Methyl Tert-Butyl Ether (MTBE) Results in µg/L
- DW-1 ⊞ Deep Groundwater Monitoring Well with 23 Ju.y 2008 and 13 October 2008 MTBE Results in µg/L
- IP-1 ▲ Injection Well with 23 July 2008 and 13 October 2008 MTBE Results in µg/L
- IP-6 △ Angled Injection Well Screen Location with 23 July 2008 and 13 October MTBE Results in µg/L
- VW-2 ⊞ Vapor Extraction Well with 23 July 2008 and 13 October 2008 MTBE Results in µg/L
- TP-2 ⊗ Temporary Monitoring Well with 23 July 2008 and 13 October 2008 MTBE Results in µg/L
- 100 MTBE Concentration Contour (µg/L), Queried Where Uncertain
- ND Not Detected
- NS Not Sampled
- (ND<0.5/ND<0.5) Previous Quarter/Current Quarter MTBE Results in µg/L

0 30' 60'
SCALE

REVISION	NO.	BY	DATE	DESCRIPTION
2	0	MY	7/31/08	Second Quarter 2008 Monitoring Report
	1	MY	10/31/08	Third Quarter 2008 Monitoring Report
	2	MY	1/30/09	Fourth Quarter 2008 Monitoring Report

ARCTOS ENVIRONMENTAL

TESORO - LIVERMORE

MTBE CONCENTRATION CONTOURS

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

FILE NO. OILVIIB-20702.DWG

FIGURE 5

2/13/2009 12:51PM 01LV11B-20702.dwg

ATTACHMENT A

GROUNDWATER SAMPLING QA/QC PROCEDURES

ARCTOS

ATTACHMENT A
GROUNDWATER SAMPLING QA/QC PROCEDURES

A.1 Groundwater Sampling

Before groundwater sampling, the depth to groundwater of each well is measured and recorded on field data sheets. Depth to groundwater and groundwater elevations are summarized in the attached tables.

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

Sampling is performed using new disposable polyethylene bailers suspended from new nylon line. The bailers are equipped with a bottom-release device. Water samples are collected from the wells in new 40-milliliter glass bottles with Teflon-lined caps provided by the analytical laboratory.

A.2 Analytical Program

The groundwater samples are 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 using EPA Method 8260B.

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

ATTACHMENT B

FIELD DATA SHEETS

WELL GAUGING DATA

Project # 081013-WW1 Date 10/13/08 Client Arcadis Env.

Site 1619 1st ST Livermore CA

Well ID	Time	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	Notes
DW-1	0915	4					51.40	64.72		
DW-2	0855	4					~~59.85~~ 55.40	~~53.40~~ 59.85		
DW-3	0840	4					~~59.60~~ 54.62	59.66		
DW-4	0835	4					54.90	70.00		
IP-1	0848	2					51.30	64.52		
IP-2	0924	2					51.40	64.54		
IP-3	0859	2					51.11	64.56		
IP-4	0908	2					50.89	64.50		
MW-1	0848	4					51.00	54.50		
MW-2	0920	4					51.30	53.60		
MW-3	0859	4					50.70	52.78		
MW-4	0905	2	* INSUFFICIENT H_2O *				46.73	46.77		
MW-5	0915	2	* WELL DRY * * INSUFFICIENT H_2O *				46.20	46.20		
MW-6	0905	2	* WELL DRY * * INSUFFICIENT H_2O *				47.60	47.60		
MW-7	1005	2	* WELL DRY *				—	46.72		
MW-8	1055	2	* INSUFFICIENT H_2O *				44.12	44.46		
MW-9	0845	2	* INSUFFICIENT H_2O *				44.68	44.69		

WELL GAUGING DATA

Project # 081015-WW1 Date 10/13/08 Client Arcadis ENV

Site 1619 1st St Livermore CA.

Well ID	Time	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	Notes
MW-10	0930	2	* INSUFFICIENT H_2O *				44.57	45.05		
TP-1	0930	2	* INSUFFICIENT H_2O *				43.00	43.10		
TP-2	0935	2	* WELL DRY * * INSUFFICIENT H_2O *				41.31	41.31		
VW-2	0925	2	* INSUFFICIENT H_2O *				36.51	36.75		
VW-3	0855	2	* WELL DRY *				—	36.30		
IP-5	0911	2					51.06	64.20		
IP-6	0902	2					55.63	71.60		
IP-7	0905	2					57.23	71.84		

WELL MONITORING DATA SHEET

Project #: 081013-WWT	Client: Arctos
Sampler: BD	Date: 10/13/08
Well I.D.: DW-1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 64.72	Depth to Water (DTW): 51.40
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]: 54.06 (13.32)	

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

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

8.6 (Gals.) X 3 = 25.8 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
1234	19.9	7.44	1054	285	8.6	clear / odor
1235	19.9	7.40	1060	701	17.2	Brown odor
1237	19.7	7.41	1039	71000	25.8	
1238	20.0	7.40	1037	71000	34.4	
						DTW - 61.13

Did well dewater? Yes (No) Gallons actually evacuated: 34.4

Sampling Date: 10/13/08 Sampling Time: ~~1355~~ 1352 Depth to Water: 54.01

Sample I.D.: DW-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 #: 081013-WW1	Client: Arcos
Sampler: BD	Date: 10/13/08
Well I.D.: DW-2	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 59.85	Depth to Water (DTW): 53.40
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 6.45 x 0.20) + DTW]: 54.69	

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: _____

4.1 (Gals.) X 3 = 12.3 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
1115	20.1	7.30	1043	>1000	4.1	Brown/odor
1115	20.6	7.05	1173	71000	8.2	
1116	20.6	7.07	1183	>1000	12.3	
						DTW 55.70

Did well dewater? Yes (No) Gallons actually evacuated: 12.3

Sampling Date: 10/13/08 Sampling Time: 1120 Depth to Water: 54.69

Sample I.D.: DW-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 #: 081013 - WW1	Client: Arcfos
Sampler: ISD	Date: 10/13/09
Well I.D.: DW-3	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 59.66	Depth to Water (DTW): 54.62
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]: 55.62	

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

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

3.2 (Gals.) X	3	=	9.6 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
1051	20.9	7.33	1022	71000	3.2	Brown ↓
1056	21.2	7.11	1014	71000	6.4	
1101	21.9	7.12	1008	71000	9.6	
						DTW - 57.02

Did well dewater? Yes (No) Gallons actually evacuated: 9.6

Sampling Date: 10/13/09 Sampling Time: 1110 Depth to Water: 55.51

Sample I.D.: DW-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 #: 081003-WW1	Client: Arcto
Sampler: BD	Date: 10/13/08
Well I.D.: DW-4	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 70.00	Depth to Water (DTW): 54.90
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 15.10 x 0.20) + DTW]: 57.92	

Purge Method: Bailer; Disposable Bailer; Positive Air Displacement; X Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other ___

Sampling Method: Bailer; V Disposable Bailer; Extraction Port; Dedicated Tubing; Other: ___

9.8 (Gals.) X 3 = 29.4 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
1008	19.6	6.74	926	308	9.8	Cloudy
1009	19.8	6.87	911	249	19.6	↓
1011	20.0	6.89	913	247	29.4	↓
						DTW - 63.90

Did well dewater? Yes (No) Gallons actually evacuated: 29.4

Sampling Date: 10/13/08 Sampling Time: 1027 Depth to Water: 57.92

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

W. .L MONITORING DATA SHE. .

Project #: 08108-MW1	Client: ARCTOS
Sampler: MW	Date: 10/13-08
Well I.D.: MP-1	Well Diameter: ② 3 4 6 8 ___
Total Well Depth (TD): 64.52	Depth to Water (DTW): 51.30
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]: 53.94	

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / Electric Submersible / Waterra / Peristaltic / Extraction Pump / Other_____ — 2"

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

2.1 (Gals.) X	3	= 6.3 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
1010	18.8	5.78	1009	>1000	2.1	odor
well	dewatered @		2.1	GALLONS		
1411	69.5	7.55	964	248	—	odor

Did well dewater? (Yes) No — Gallons actually evacuated: 2.1

Sampling Date: 10/13/08 — Sampling Time: 1412 — Depth to Water: 51.46

Sample I.D.: MP-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:)	1.67	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	(Post-purge:)	-66	mV

W. .L MONITORING DATA SHE. .

Project #: 081013-WW1	Client: ARCTOS
Sampler: WW	Date: 10/13/08
Well I.D.: IP-2	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 64.54	Depth to Water (DTW): 51.40
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]: 54.03	

Purge Method: Bailer; Disposable Bailer; Positive Air Displacement; 2" Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

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

2.1 (Gals.) X 3 = 6.3 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
1224	21.1	7.69	1070	>1000	2.1	odor
1228	22.6	7.76	1073	>1000	4.2	"
1232	22.1	7.34	1086	>1000	6.3	"

Did well dewater? Yes (No) Gallons actually evacuated: 6.3

Sampling Date: 10/13/08 Sampling Time: 1237 Depth to Water: 53.81

Sample I.D.: IP-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):	1.26	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	-129	mV

W. .LL MONITORING DATA SHE. .

Project #: 071013-WW1	Client: ARCTUS
Sampler: WW	Date: 10/13/07
Well I.D.: MP-3	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 64.56	Depth to Water (DTW): 51.11
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]: 53.80	

Purge Method: Bailer; Disposable Bailer; Positive Air Displacement; (2") Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

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

2.2 (Gals.) X 3 = 6.6 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
1306	21.9	8.03	1032	>1000	2.2	
1309	20.6	8.11	1032	>1000	4.4	odor
1312	20.4	8.09	1048	>1000	6.6	

Did well dewater? Yes (No) Gallons actually evacuated: 6.6

Sampling Date: 10/13/07 Sampling Time: 1317 Depth to Water: 53.72

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

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

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:	1.40	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	-127	mV

W L MONITORING DATA SHE

Project #: 081013-WW1	Client: AROTOS
Sampler: WW	Date: 10/13/08
Well I.D.: IP-4	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 64.50	Depth to Water (DTW): 50.89
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]: 53.61	

Purge Method: Bailer; Disposable Bailer; Positive Air Displacement; 2" Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

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

2.2 (Gals.) X 3 = 6.6 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 (uS))	Turbidity (NTUs)	Gals. Removed	Observations
1342	19.7	8.16	1040	>1000	2.2	odor
1346	20.2	7.78	1035	>1000	4.4	"
1349	20.3	7.69	1043	>1000	6.6	"

Did well dewater? Yes (No) Gallons actually evacuated: 6.6

Sampling Date: 10/13/08 Sampling Time: 1400 Depth to Water: 52.45

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

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

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:	0.67	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	-52	mV

W _L MONITORING DATA SHE_

Project #: 081013-mw1	Client: ARCTOS
Sampler: mw	Date: 10/13/08
Well I.D.: 1P-5	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 64.20	Depth to Water (DTW): 51.06
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]: 53.69	

Purge Method: Bailer; Disposable Bailer; Positive Air Displacement; 2" Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other ____

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

2.1 (Gals.) X 3 = 6.3 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
1027	17.1	7.05	1009	>1000	2.1	
1029	18.5	7.34	1010	>1000	4.2	
1032	18.2	7.65	1021	>1000	6.3	

Did well dewater? Yes (No) Gallons actually evacuated: 6.3

Sampling Date: 10/13/08 Sampling Time: 1037 Depth to Water: 53.68

Sample I.D.: 1P-5 Laboratory: ~~Kiff~~ CalScience Other ____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: 8260C

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:)	2.90	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	~~Post-purge:~~	113	mV

WELL MONITORING DATA SHEET

Project #: 081013-WW1	Client: ARCTUS
Sampler: WW	Date: 10/13/08
Well I.D.: IP-6	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 71.60	Depth to Water (DTW): 55.03
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]: 58.72	

Purge Method: Bailer; Disposable Bailer; Positive Air Displacement; (2) Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: Bailer; (1) Disposable Bailer; Extraction Port; Dedicated Tubing; Other: _____

1 Case Volume		Specified Volumes		Calculated Volume
2.6	(Gals.) X	3	=	7.8 Gals.

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 ~~uS~~)	Turbidity (NTUs)	Gals. Removed	Observations
1101	18.8	7.81	1130	>1000	2.6	odor
1104	19.6	7.61	1149	>1000	5.2	"
1106	19.6	7.60	1130	>1000	7.8	"

Did well dewater? Yes ~~No~~ Gallons actually evacuated: 7.8

Sampling Date: 10/13/08 Sampling Time: 1333 Depth to Water: 56.48

Sample I.D.: IP-6 Laboratory: ~~Kiff~~ CalScience Other_____

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

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~~:	1.26 mg/L
O.R.P. (if req'd):	Pre-purge:		mV	~~Post-purge~~:	-46 mV

WELL MONITORING DATA SHEET

Project #: 081013-WW1	Client: ARCTOS
Sampler: WW	Date: 10/13/08
Well I.D.: IP-7	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 71.84	Depth to Water (DTW): 57.23
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]: 60.15	

Purge Method: Bailer; Disposable Bailer; Positive Air Displacement; "2" Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

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

2.3 (Gals.) X	3	= 6.9 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
1118	19.4	7.72	1132	>1000	2-3	odor
1122	19.9	7.52	1135	>1000	4.6	"
well	dewatered	@	4.6 GALLONS			
1404	19.8	7.60	1109	261	—	

Did well dewater? ~~Yes~~ No Gallons actually evacuated: 4.6

Sampling Date: 10/13/08 Sampling Time: 1405 Depth to Water: 58.10

Sample I.D.: IP-7 Laboratory: ~~KNF~~ 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~~:	1.40 mg/L
O.R.P. (if req'd):	Pre-purge:		mV	~~Post-purge~~:	261 -35 mV

WELL MONITORING DATA SHEET

Project #: 081013-WW1	Client: Arcto5
Sampler: EC	Date: 10-13-08
Well I.D.: MW-1	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 54.50	Depth to Water (DTW): 51.00
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]: 51.70	

Purge Method: Bailer / X Disposable Bailer / Positive Air Displacement / Electric Submersible / Waterra / Peristaltic / Extraction Pump / Other ___

Sampling Method: Bailer / X Disposable Bailer / Extraction Port / Dedicated Tubing / Other: ___

2.3 (Gals.) X 3 = 6.9 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
1245	69.5	8.09	1091	>1000	2.3	light brown, silty
1248	70.2	7.80	1096	>1000	4.6	" "
1250	Well	dewatered	@ 5.0 gal.			
1451	68.2	7.27	1112	>1000	—	

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

Sampling Date: 10-13-08 Sampling Time: 1452 Depth to Water: 52.38 2 hrs.

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

W L MONITORING DATA SHE

Project #: 081013-WW1	Client: Arcos
Sampler: BD	Date: 10/13/08
Well I.D.: MW-2	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 53.60	Depth to Water (DTW): 51.30
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]: 2.30 51.76	

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

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

1.4 (Gals.) X 3 = 4.2 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
1313	19.3	6.98	1208	71000	1.4	Dark Grey / odor
1315	19.5	6.96	1208	71000	2.8	
1317	19.6 (BD)	6.94	1203	71000	4.2	
						DTW - 51.03

Did well dewater? Yes (No) Gallons actually evacuated: 4.2

Sampling Date: 10/13/08 Sampling Time: 1320 Depth to Water: 51.76

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

W. .L MONITORING DATA SHE. .

Project #: 081013-ww1	Client: Arctos
Sampler: EC	Date: 10-13-08
Well I.D.: MW-3	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 52.78	Depth to Water (DTW): 50.70
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]: 51.12	

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

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

1.4 (Gals.) X 3 = 4.2 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
1300	69.4	8.24	999.8	>1000	1.4	murky brown
1302	68.2	7.39	1011	>1000	2.8	murky brown
1303	Well	dewatered	@ 3 gal.			
1504	68.0	7.46	1004	>1000	—	murky brown

Did well dewater? (Yes) No Gallons actually evacuated: 3

Sampling Date: 10-13-08 Sampling Time: 1505 Depth to Water: 50.70

Sample I.D.: MW-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

W L MONITORING DATA SHE

Project #: 081013-WW1	Client: Arctos
Sampler: EC	Date: 10-13-08
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 46.77	Depth to Water (DTW): 46.73
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: _____

_____(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	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
	Insufficient Water					

Did well dewater? Yes No		Gallons actually evacuated:	
Sampling Date:	Sampling Time:	Depth to Water:	
Sample I.D.:		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

W. .L MONITORING DATA SHE. .

Project #: 081013-WW1	Client: Arctos
Sampler: EC	Date: 10-13-08
Well I.D.: MW-5	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 46.20	Depth to Water (DTW): ←
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: _____

_____(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	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
	Insufficient		water			

Did well dewater?	Yes	No	Gallons actually evacuated:		
Sampling Date:		Sampling Time:	Depth to Water:		
Sample I.D.:			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 #: 081013-WW1	Client: Arcos
Sampler: BD	Date: 10/13/08
Well I.D.: MW-6	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 47.60	Depth to Water (DTW): 47.60
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 ____

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	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0905	* No purge / sample insufficient					H_2O *

Did well dewater? Yes / No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

W ..L MONITORING DATA SHE.

Project #: 081013-WW1	Client: Arcos
Sampler: EC	Date: 10-13-08
Well I.D.: MW-7	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 46.72	Depth to Water (DTW):
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: _____

_____(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	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
	Insufficient Water					

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

W. .L MONITORING DATA SHE. .

Project #: 081013-WW1	Client: Arctos
Sampler: EC	Date: 10-13-08
Well I.D.: MW-8	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 44.46	Depth to Water (DTW): 44.12
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: _____

_____(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	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
	Insufficient water					

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

W. .L MONITORING DATA SHE. .

Project #: 081013-WW1	Client: Arcos
Sampler: EC	Date: 10-13-08
Well I.D.: MW-9	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD):	Depth to Water (DTW):
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: _____

_____(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	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
	Insufficient water					

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

W. .L MONITORING DATA SHE. .

Project #: 081013-WW1	Client: Arctos
Sampler: EC	Date: 10-13-08
Well I.D.: MW-10	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 45.05	Depth to Water (DTW): 44.57
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: _____

_____(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	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
	Insufficient Water					

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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 #: 081013-WW1	Client: Aretos
Sampler: BD	Date: 10/13/08
Well I.D.: TP-1	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD):	Depth to Water (DTW):
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: ____

____ (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
0930	* No purge / sample insufficient + H_2O *					

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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 #: 081013-WW1	Client: Arcos
Sampler: BD	Date: 10/13/08
Well I.D.: TP-2	Well Diameter: ② 3 4 6 8 ____
Total Well Depth (TD): 41.31	Depth to Water (DTW): 41.31
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: ____

____ (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
0935	* No Purge / sample insufficient				H_2O *	

Did well dewater? Yes No		Gallons actually evacuated:	
Sampling Date:	Sampling Time:	Depth to Water:	
Sample I.D.:		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 #: 081013-WW1	Client: Arcos
Sampler: BD	Date: 10/13/08
Well I.D.: VW-2	Well Diameter: 2 (3) 4 6 8 ___
Total Well Depth (TD): 36.75	Depth to Water (DTW): 36.71
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: ____

___ (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
0925	* no purge / sample, insufficient				H_2O *	

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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

W. .L MONITORING DATA SHE. .

Project #: 081013-WW1	Client: Arctos
Sampler: EC	Date: 10-13-08
Well I.D.: VW-3	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 36.30	Depth to Water (DTW): ____
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: ____

____(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	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
	Insufficient Water					

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: 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 GAUGING DATA

Project # 081216-JP1 Date 12/16/08 Client ARCTOS ENVIRONMENTAL

Site 1619 1ST ST. LIVERMORE

Well ID	Time	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	Notes
MW-11	0932	4	ODOR				42.49	42.78		
IP-8	0925	2	ODOR				50.48	64.39		
IP-9	0938	2	ODOR				42 JP 52.51	64.81		

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME	Accos @ 1619 1st St. Livermore, CA	PROJECT NUMBER	081216-JP1

EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
~~MYRON L~~ ~~ULTRAMETER~~ HACH TURBIDIMETER	07060C023524	12/16/08 0700	20/100	19.8 / 98.3	YES	—	JP
MYRON L ULTRAMETER	6217909	12/16/08 0700	7 pH 10 pH 4 pH 3900 us	6.92 9.99 4.23 4088	YES	55.4 °F	JP

W .L MONITORING DATA SHE

Project #: 081216-JP1	Client: ARCTOS ENV
Sampler: JP	Date: 12/16/08
Well I.D.: IP-8	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 64.39	Depth to Water (DTW): 50.48
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]: 53.26	

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

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

2.2 (Gals.) X	3 =	6.6 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
1010	63.1	6.93	1148	407	2.2	
1017	63.8	7.15	1151	>1000	4.4	
1022	64.1	7.11	1142	>1000	6.6	

Did well dewater? Yes (No) Gallons actually evacuated: 6.6

Sampling Date: 12/16/08 Sampling Time: 1035 Depth to Water: 53.02

Sample I.D.: IP8 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

W L MONITORING DATA SHE

Project #: 081216-JP1	Client: NRCTOS ENV.
Sampler: JP	Date: 12/16/08
Well I.D.: IP-9	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 64.81	Depth to Water (DTW): 52.51
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]: 54.97	

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

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

2.0 (Gals.) X 3 = 6.0 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
1110	61.9	7.65	1416	128	2.0	
1116	64.1	7.59	1557	336	4.0	
1123	63.9	7.60	1532	>1000	6.0	

Did well dewater? Yes No Gallons actually evacuated: 6.0

Sampling Date: 12/16/08 Sampling Time: 1157 Depth to Water: 54.97

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

W .L MONITORING DATA SHE

Project #: 081216-JP1	Client: ARCTOS ENV.
Sampler: JP	Date: 12/16/08
Well I.D.: MW-11	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 42.78	Depth to Water (DTW): 42.49
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: _____

_____(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	radius^2 * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0945	* NOT ENOUGH		WATER TO PURGE OR SAMPLE		*	

Did well dewater? Yes No Gallons actually evacuated: ——

Sampling Date: 12/16/08 Sampling Time: —— Depth to Water: ——

Sample I.D.: MW-11 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

ATTACHMENT C

HISTORICAL WELL AND GROUNDWATER ELEVATIONS

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-1	6/1/93	37.50	474.29	436.79
	6/22/93	38.46		435.83
	10/6/93	42.22		432.07
	1/13/94	34.52		439.77
	3/30/94	31.93		442.36
	4/25/94	33.49		440.80
	8/12/94	41.03		433.26
	12/14/94	38.63		435.66
	2/10/95	30.80		443.49
	6/15/95	25.46		448.83
	9/26/95	31.05		443.24
	12/15/95	28.11		446.18
	3/21/96	17.67		456.62
	6/13/96	22.86		451.43
	9/16/96	30.04		444.25
	12/2/96	26.74		447.55
	3/7/97	20.84		453.45
	6/12/97	28.71		445.58
	9/29/97	33.91		440.38
	12/1/97	34.88		439.41
	3/19/98	19.83		454.46
	5/29/98	21.57		452.72
	9/15/98	31.68		442.61
	11/30/98	36.80		437.49
	1/17/99	30.02		444.27
	6/10/99	29.30		444.99
	9/7/99	31.41		442.88
	12/13/99	32.95		441.34
	3/13/00	25.74		448.55
	6/12/00	28.24		446.05
	11/10/00	30.56		443.73

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-1 (cont.)	12/31/00	31.71	474.29	442.58
	3/27/01	30.43		443.86
	6/30/01	36.61		437.68
	9/26/01	45.10		429.19
	12/18/01	39.39		434.90
	3/18/02	38.24		436.05
	8/21/02	36.71		437.58
	12/3/02	36.85		437.44
	3/4/03	33.72		440.57
	6/10/03	31.31		442.98
	9/9/03	35.05		439.24
	12/23/03	30.15		444.14
	3/23/04	26.61		447.68
	5/10/04	30.31		443.98
	8/4/04	34.77		439.52
	11/4/04	33.93		440.36
	1/12/05	27.82		446.47
	5/2/05	24.87		449.42
	7/19/05	29.26		445.03
	11/21/05	31.15		443.14
	2/9/06	26.24		448.05
	5/16/06	24.87		449.42
	8/9/06	31.64		442.65
	11/8/06	31.16		443.13
	2/14/07	30.00		444.29
	5/17/07	33.75		440.54
	8/2/07	40.00		434.29
	11/12/07	48.55		425.74
	2/14/08	34.74		438.55
	5/8/08	36.15		438.14

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-1	7/23/08	45.76	474.29	428.53
(cont.)	10/13/08	51.00		423.29
MW-2	6/1/93	38.02	472.98	434.96
	6/22/93	39.07		433.91
	10/6/93	43.72		429.26
	1/13/94	35.85		437.13
	3/30/94	32.82		440.16
	4/25/94	34.76		438.22
	8/12/94	44.33		428.65
	12/14/94	40.00		432.98
	2/10/95	32.16		440.82
	6/15/95	25.93		447.05
	9/26/95	32.42		440.56
	12/15/95	29.41		443.57
	3/21/96	17.47		455.51
	6/13/96	23.69		449.29
	9/16/96	31.24		441.74
	12/2/96	26.90		446.08
	3/7/97	21.33		451.65
	6/12/97	29.94		443.04
	9/29/97	34.22		438.76
	12/1/97	35.94		437.04
	3/19/98	20.34		452.64
	5/29/98	22.63		450.35
	9/15/98	32.30		440.68
	11/30/98	36.90		436.08
	1/17/99	30.17		442.81
	6/10/99	29.98		443.00
	9/7/99	31.85		441.13
	12/13/99	33.72		439.26
	3/13/00	26.54		446.44
	6/12/00	28.44		444.54

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-2 (cont.)	11/10/00	31.31	472.98	441.67
	12/31/00	32.68		440.30
	3/27/01	30.81		442.17
	6/30/01	37.58		435.40
	9/26/01	44.97		428.01
	12/18/01	40.67		432.31
	3/18/02	38.94		434.04
	6/5/02	36.45		436.53
	8/21/02	37.15		435.83
	12/3/02	36.76		436.22
	3/4/03	33.60		439.38
	6/10/03	32.89		440.09
	9/9/03	35.45		437.53
	12/23/03	31.79		441.19
	3/23/04	28.25		444.73
	5/10/04	30.91		442.07
	8/4/04	35.36		437.62
	11/4/04	34.92		438.06
	1/12/05	29.46		443.52
	5/2/05	25.61		447.37
	7/19/05	30.11		442.87
	11/21/05	32.04		440.94
	2/9/06	27.11		445.87
	5/17/06	25.18		447.80
	8/9/06	32.69		440.29
	11/8/06	33.21		439.77
	2/14/07	31.27		441.71
	5/17/07	34.40		438.58
	8/2/07	41.23		431.75
	11/12/07	48.22		424.76
	2/14/08	36.31		436.67

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-2 (cont.)	5/8/08	36.70	472.98	436.28
	7/23/08	45.78		427.20
	10/13/08	51.30		421.68
MW-3	6/1/93	36.18	473.37	437.19
	6/22/93	37.11		436.26
	10/6/93	41.15		432.22
	1/13/94	33.95		439.42
	3/30/94	30.97		442.40
	4/25/94	32.46		440.91
	8/12/94	41.72		431.65
	12/14/94	37.62		435.75
	2/10/95	29.96		443.41
	6/15/95	23.66		449.71
	9/26/95	29.62		443.75
	12/15/95	27.10		446.27
	3/21/96	15.85		457.52
	6/13/96	21.31		452.06
	9/16/96	28.62		444.75
	12/2/96	25.55		447.82
	3/7/97	19.77		453.60
	6/12/97	27.67		445.70
	9/29/97	29.60		443.77
	12/1/97	33.37		440.00
	3/19/98	18.76		454.61
	5/29/98	20.64		452.73
	9/15/98	30.70		442.67
	11/30/98	34.96		438.41
	1/17/99	28.81		444.56
	6/10/99	28.10		445.27
	9/7/99	30.38		442.99
	12/13/99	31.46		441.91

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-3 (cont.)	3/13/00	24.28	473.37	449.09
	6/12/00	26.80		446.57
	11/10/00	29.47		443.90
	12/31/00	31.38		441.99
	3/27/01	29.94		443.43
	6/30/01	37.54		435.83
	9/26/01	45.17		428.20
	12/18/01	39.41		433.96
	3/18/02	37.73		435.64
	6/5/02	35.35		438.02
	8/21/02	36.21		437.16
	12/3/02	35.62		437.75
	3/4/03	32.75		440.62
	6/10/03	31.26		442.11
	9/9/03	34.72		438.65
	12/23/03	30.47		442.90
	3/23/04	26.67		446.70
	5/10/04	30.25		443.12
	8/4/04	34.70		438.67
	11/4/04	33.94		439.43
	1/12/05	28.21		445.16
	5/2/05	24.56		448.81
	7/19/05	29.39		443.98
	11/21/05	31.30		442.07
	2/9/06	26.21		447.16
	5/16/06	24.36		449.01
	8/9/06	31.90		441.47
	11/8/06	31.30		442.07
	2/14/07	30.20		443.17
	5/17/07	33.64		439.73
	8/2/07	41.74		431.63

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-3 (cont.)	11/12/07	47.41	473.37	425.96
	2/14/08	34.73		438.64
	5/8/08	35.60		437.77
	7/23/08	45.00		428.37
	10/13/08	50.70		422.67
MW-4	3/30/94	31.56	473.64	442.08
	4/25/94	32.73		440.91
	8/12/94	41.61		432.03
	12/14/94	38.11		435.53
	2/10/95	30.50		443.14
	6/15/95	23.63		450.01
	9/26/95	29.70		443.94
	12/15/95	27.56		446.08
	3/21/96	15.63		458.01
	6/13/96	21.07		452.57
	9/16/96	28.99		444.65
	12/2/96	26.04		447.60
	3/7/97	19.69		453.95
	6/12/97	28.04		445.60
	9/29/97	29.91		443.73
	12/1/97	33.88		439.76
	3/19/98	18.67		454.97
	5/29/98	20.16		453.48
	9/15/98	30.46		443.18
	11/30/98	34.50		439.14
	1/17/99	28.30		445.34
	6/10/99	27.60		446.04
	9/7/99	30.79		442.85
	12/13/99	31.60		442.04
	3/13/00	24.35		449.29
	6/12/00	26.91		446.73

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-4 (cont.)	11/10/00	29.71	473.64	443.93
	12/31/00	31.79		441.85
	3/27/01	29.98		443.66
	6/30/01	36.88		436.76
	9/26/01	43.87		429.77
	12/18/01	39.30		434.34
	3/18/02	37.75		435.89
	6/5/02	35.68		437.96
	8/21/02	36.58		437.06
	12/3/02	35.90		437.74
	3/4/03	32.73		440.91
	6/10/03	31.20		442.44
	9/9/03	34.64		439.00
	12/23/03	31.30		442.34
	3/23/04	26.71		446.93
	5/10/04	30.33		443.31
	8/4/04	34.87		438.77
	11/4/04	34.28		439.36
	1/12/05	28.67		444.97
	5/2/05	24.46		449.18
	7/19/05	29.36		444.28
	11/21/05	31.80		441.84
	2/9/06	26.34		447.30
	5/16/06	24.30		449.34
	8/9/06	32.05		441.59
	11/8/06	32.85		440.79
	2/14/07	30.46		443.18
	5/17/07	33.92		439.72
	8/2/07	40.68		432.96
	11/12/07	Dry[(c)]		--
	2/14/08	34.53		439.11

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-4 (cont.)	5/8/08	35.55	473.64	438.09
	7/23/08	43.87		429.77
	10/13/08	Dry		--
MW-5	3/30/94	32.07	472.67	440.60
	4/25/94	33.65		439.02
	8/12/94	42.73		429.94
	12/14/94	38.89		433.78
	2/10/95	31.44		441.23
	6/15/95	24.99		447.68
	9/26/95	30.20		442.47
	12/15/95	28.56		444.11
	3/21/96	16.82		455.85
	6/13/96	22.61		450.06
	9/16/96	29.78		442.89
	12/2/96	26.51		446.16
	3/7/97	21.91		450.76
	9/29/97	31.74		440.93
	12/1/97	34.05		438.62
	3/19/98	20.93		451.74
	5/29/98	21.30		451.37
	9/15/98	31.32		441.35
	11/30/98	35.44		437.23
	1/17/99	29.59		443.08
	6/10/99	28.05		444.62
	9/7/99	31.11		441.56
	12/13/99	32.66		440.01
	3/13/00	25.87		446.80
	6/12/00	28.15		444.52
	11/10/00	30.05		442.62
	12/31/00	31.81		440.86
	3/27/01	30.57		442.10

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-5 (cont.)	6/30/01	37.24	472.67	435.43
	9/26/01	44.53		428.14
	12/18/01	40.65		432.02
	3/18/02	38.75		433.92
	6/5/02	36.21		436.46
	8/21/02	36.76		435.91
	12/3/02	36.12		436.55
	3/4/03	32.90		439.77
	6/10/03	33.04		439.63
	9/9/03	34.20		438.47
	12/23/03	31.38		441.29
	3/23/04	27.51		445.16
	5/10/04	31.12		441.55
	8/4/04	35.09		437.58
	11/4/04	34.34		438.33
	1/12/05	29.19		443.48
	5/2/05	25.31		447.36
	7/19/05	30.49		442.18
	11/21/05	32.35		440.32
	2/9/06	27.19		445.48
	5/16/06	25.30		447.37
	8/9/06	32.68		439.99
	11/8/06	32.22		440.45
	2/14/07	34.00		438.67
	5/17/07	34.29		438.38
	8/2/07	41.72		430.95
	11/12/07	Dry		--
	2/14/08	35.66		437.01
	5/8/08	36.60		436.07
	7/23/08	Dry		--
	10/13/08	Dry		--

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-6	3/30/94	33.38	471.93	438.55
	4/25/94	35.49		436.44
	8/12/94	45.14		426.79
	12/14/94	40.99		430.94
	2/10/95	33.34		438.59
	6/15/95	26.88		445.05
	9/26/95	33.55		438.38
	12/15/95	30.32		441.61
	3/21/96	18.89		453.04
	6/13/96	24.62		447.31
	9/16/96	32.64		439.29
	12/2/96	27.42		444.51
	3/7/97	22.13		449.80
	6/12/97	31.02		440.91
	9/29/97	35.77		436.16
	12/1/97	37.14		434.79
	3/19/98	21.10		450.83
	5/29/98	23.26		448.67
	9/15/98	33.50		438.43
	11/30/98	38.73		433.20
	1/17/99	32.05		439.88
	6/10/99	31.44		440.49
	9/7/99	33.94		437.99
	12/13/99	35.84		436.09
	3/13/00	28.45		443.48
	6/12/00	30.52		441.41
	11/10/00	32.99		438.94
	12/31/00	34.95		436.98
	3/27/01	32.72		439.21
	6/30/01	39.86		432.07
	9/26/01	Dry		--

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-6 (cont.)	12/18/01	43.36	471.93	428.57
	3/18/02	41.29		430.64
	6/5/02	38.85		433.08
	8/21/02	39.02		432.91
	12/3/02	38.76		433.17
	3/4/03	35.13		436.80
	6/10/03	34.15		437.78
	9/9/03	37.66		434.27
	12/23/03	33.43		438.50
	3/23/04	29.96		441.97
	5/10/04	32.98		438.95
	8/4/04	37.02		434.91
	11/4/04	37.03		434.90
	1/12/05	32.01		439.92
	5/2/05	27.30		444.63
	7/19/05	32.27		439.66
	11/21/05	33.23		438.70
	2/9/06	29.07		442.86
	5/17/06	27.23		444.70
	8/9/06	35.22		436.71
	11/8/06	33.41		438.52
	2/14/07	33.43		438.50
	5/17/07	36.50		435.43
	8/2/07	42.24		429.69
	11/12/07	Dry		--
	2/14/08	38.67		433.26
	5/8/08	38.50		433.43
	7/23/08	Dry		--
	10/13/08	Dry		--
MW-7	3/30/94	31.98	472.33	440.35
	4/25/94	33.56		438.77

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-7 (cont.)	8/12/94	43.35	472.33	428.98
	12/14/94	39.34		432.99
	2/10/95	32.11		440.22
	6/15/95	25.51		446.82
	9/26/95	31.43		440.90
	12/15/95	28.97		443.36
	3/21/96	17.36		454.97
	6/13/96	23.47		448.86
	9/16/96	31.35		440.98
	12/2/96	27.11		445.22
	3/7/97	21.33		451.00
	6/12/97	29.90		442.43
	9/29/97	34.37		437.96
	12/1/97	36.46		435.87
	3/19/98	20.33		452.00
	5/29/98	22.30		450.03
	9/15/98	32.54		439.79
	11/30/98	37.96		434.37
	1/17/99	31.04		441.29
	6/10/99	29.89		442.44
	9/7/99	32.38		439.95
	12/13/99	33.98		438.35
	3/13/00	27.09		445.24
	6/12/00	28.76		443.57
	11/10/00	31.54		440.79
	12/31/00	32.76		439.57
	3/27/01	30.97		441.36
	6/30/01	37.50		434.83
	9/26/01	45.11		427.22
	12/18/01	41.13		431.20
	3/18/02	39.22		433.11

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-7 (cont.)	6/5/02	36.55	472.33	435.78
	8/21/02	36.81		435.52
	12/3/02	36.52		435.81
	3/4/03	32.60		439.73
	6/10/03	31.33		441.00
	9/9/03	34.71		437.62
	12/23/03	30.80		441.53
	3/23/04	26.41		445.92
	5/10/04	29.86		442.47
	8/4/04	34.06		438.27
	11/4/04	34.12		438.21
	1/12/05	28.83		443.50
	5/2/05	24.66		447.67
	7/19/05	29.07		443.26
	11/21/05	30.42		441.91
	2/9/06	26.15		446.18
	5/16/06	24.44		447.89
	8/9/06	31.77		440.56
	11/8/06	31.14		441.19
	2/14/07	30.39		441.94
	5/17/07	33.31		439.02
	8/2/07	37.09		435.24
	11/12/07	Dry		--
	2/14/08	36.51		435.82
	5/8/08	36.00		436.33
	7/23/08	44.42		427.91
	10/13/08	Dry		--
MW-8	12/23/03	32.01	471.18	439.17
	3/23/04	28.50		442.68
	5/10/04	31.44		439.74
	8/4/04	35.11		436.07

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-8 (cont.)	11/4/04	34.77	471.18	436.41
	1/12/05	29.66		441.52
	5/2/05	25.91		445.27
	7/19/05	30.56		440.62
	11/21/05	32.48		438.70
	2/9/06	27.40		443.78
	5/16/06	25.60		445.58
	8/9/06	32.77		438.41
	11/8/06	32.10		439.08
	2/14/07	30.94		440.24
	5/17/07	34.14		437.04
	8/2/07	41.24		429.94
	11/12/07	Dry		--
	2/14/08	35.55		435.63
	5/8/08	36.64		434.54
	7/23/08	Dry		--
	10/13/08	Dry		--
MW-9	12/23/03	34.03	470.78	436.75
	3/23/04	30.01		440.77
	5/10/04	33.61		437.17
	8/4/04	37.47		433.31
	11/4/04	37.44		433.34
	5/2/05	27.73		443.05
	7/19/05	32.90		437.88
	11/21/05	34.15		436.63
	2/9/06	29.44		441.34
	5/16/06	27.50		443.28
	8/9/06	35.85		434.93
	11/8/06	34.18		436.60
	2/14/07	34.00		436.78
	5/17/07	36.88		433.90

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
MW-9 (cont.)	8/2/07	44.11	470.78	426.67
	11/12/07	Dry		--
	2/14/08	39.32		431.46
	5/8/08	38.90		431.88
	7/23/08	Dry		--
	10/13/08	Dry		--
MW-10	12/23/03	33.80	471.63	437.83
	3/23/04	28.68		442.95
	5/10/04	32.15		439.48
	8/4/04	36.40		435.23
	11/4/04	36.21		435.42
	1/12/05	31.64		439.99
	5/2/05	27.01		444.62
	7/19/05	31.59		440.04
	11/21/05	32.96		438.67
	2/9/06	28.56		443.07
	5/16/06	26.83		444.80
	8/9/06	34.37		437.26
	11/8/06	33.41		438.22
	2/14/07	32.81		438.82
	5/17/07	35.85		435.78
	8/2/07	43.46		428.17
	11/12/07	Dry		--
	2/14/08	39.71		431.92
	5/8/08	37.55		434.08
	7/23/08	Dry		--
	10/13/08	Dry		--
MW-11	12/16/08	Dry	473.26	--
VW-2	8/4/04	34.13	473.28	439.15
	11/4/04	34.75		438.53
	1/12/05	29.35		443.93
	5/2/05	25.34		447.94

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
VW-2 (cont.)	7/19/05	29.76	473.28	443.52
	11/21/05	31.81		441.47
	2/9/06	27.21		446.07
	5/17/06	25.26		448.02
	8/9/06	31.74		441.54
	11/8/06	33.52		439.76
	2/14/07	30.77		442.51
	5/17/07	33.17		440.11
	8/2/07	36.33		436.95
	11/12/07	Dry		--
	2/14/08	35.55		437.73
	5/8/08	35.31		437.97
	7/23/08	Dry		--
	10/13/08	Dry		--
VW-3	8/4/04	32.89	474.38	441.49
	11/4/04	34.78		439.60
	1/12/05	29.51		444.87
	5/2/05	24.79		449.59
	7/19/05	28.91		445.47
	11/21/05	31.07		443.31
	2/9/06	26.60		447.78
	5/16/06	24.19		450.19
	8/9/06	30.53		443.85
	11/8/06	31.62		442.76
	2/14/07	30.48		443.90
	5/17/07	31.70		442.68
	8/2/07	35.55		438.83
	11/12/07	Dry		--
	2/14/08	Dry		--
	5/8/08	34.80		439.58

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
VW-3	7/23/08	Dry	474.38	--
(cont.)	10/13/08	Dry		--
TP-1	7/19/05	29.91	472.82	442.91
	11/21/05	32.28		440.54
	2/9/06	28.02		444.80
	5/17/06	25.18		447.64
	8/9/06	32.81		440.01
	11/8/06	32.02		440.80
	2/14/07	33.59		439.23
	5/17/07	33.52		439.30
	8/2/07	40.30		432.52
	11/12/07	Dry		--
	2/14/08	36.17		436.65
	5/8/08	36.17		436.65
	7/23/08	Dry		--
	10/13/08	Dry		--
TP-2	7/19/05	29.67	472.93	443.26
	11/21/05	31.43		441.50
	2/9/06	27.27		445.66
	5/17/06	25.00		447.93
	8/9/06	31.74		441.19
	11/8/06	32.80		440.13
	2/14/07	30.32		442.61
	5/17/07	33.28		439.65
	8/2/07	39.35		433.58
	11/12/07	Dry		--
	2/14/08	35.62		437.31
	5/8/08	36.62		436.31
	7/23/08	Dry		--
	10/13/08	Dry		--
DW-1	5/22/08	37.30	472.85	435.55

TABLE C-1

HISTORICAL WELL AND GROUNDWATER ELEVATIONS
TESORO - LIVERMORE, 67076

Well No.	Date of Measurement	Depth to Water (feet below casing)	PVC Casing Elevation[(a)] (feet MSL)	Water Table Elevation[(b)] (feet MSL)
DW-1	7/23/08	45.55	472.85	427.30
(cont.)	10/13/08	51.40		421.45
DW-2	5/22/08	39.80	471.61	431.81
	7/23/08	48.25		423.36
	10/13/08	53.40		418.21
DW-3	5/22/08	40.20	470.33	430.13
	7/23/08	49.09		421.24
	11/13/08	54.62		415.71
DW-4	5/22/08	40.20	468.48	428.28
	7/23/08	49.50		418.98
	10/13/08	54.90		413.58
MW-A	1/17/99	30.13	NM[(d)]	NM
MW-B	1/17/99	30.29	NM	NM
MW-C	1/17/99	30.60	NM	NM
MW-D	1/17/99	31.32	NM	NM
MW-E	1/17/99	31.36	NM	NM
MW-W	1/17/99	30.91	NM	NM

(a) 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.
Benchmark K2-741, elevation is 467.835 feet above MSL.

(b) Potentiometric Surface Elevation = (Casing Elevation - Depth to Water)

(c) Depth of groundwater assumed to be below screened interval; well had 6 inches or less of water.

(d) NM = Well not surveyed.

ATTACHMENT D

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-1	6/1/93	27,000	2,200	400	ND<0.5[c]	4,900	--[d]	--	--	--	--	--	--	--	--
	6/22/93	87,000	8,000	10,000	260	10,000	--	--	--	--	--	--	--	--	--
	10/6/93	40,000	4,700	6,500	740	5,300	--	--	--	--	--	--	--	--	--
	1/13/94	9,400	1,300	9,500	110	850	--	--	--	--	--	--	--	--	--
	3/30/94	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/25/94	11,000	1,500	1,800	290	1,700	--	--	--	--	--	--	--	--	--
	8/12/94	11,000	550	330	260	1,400	--	--	--	--	--	--	--	--	--
	12/14/94	11,000	1,000	1,200	320	1,500	--	--	--	--	--	--	--	--	--
	2/10/95	9,300	1,200	1,500	280	1,500	--	--	--	--	--	--	--	--	--
	6/15/95	140	5.6	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	9/26/95	410	140	ND<0.5	ND<0.5	43	--	--	--	--	--	--	--	--	--
	12/15/95	740	250	ND<1.3	ND<1.3	87	--	--	--	--	--	--	--	--	--
	3/21/96	ND<50	0.52	ND<0.5	ND<0.5	0.51	--	--	--	--	--	--	--	--	--
	6/13/96	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	9/16/96	720	70	ND<0.5	1.0	5.1	ND<5	--	--	--	--	--	--	--	--
	12/2/96	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	3/7/97	600	6.7	ND<0.5	1.2	1.8	ND<5	--	--	--	--	--	--	--	--
	6/12/97	18,000	180	800	410	1,800	ND<5	--	--	--	--	--	--	--	--
	9/29/97	350	120	1.5	ND<0.5	12	ND<5	--	--	--	--	--	--	--	--
	12/1/97	ND<50	7.0	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	3/19/98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	5/29/98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	9/15/98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	11/30/98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	1/17/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	6/10/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	9/7/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	12/13/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	3/13/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	6/12/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	11/10/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	12/31/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	3/27/01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	6/30/01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	9/26/01	90	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	12/18/01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-1 (cont.)	11/4/04	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
	1/12/05	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
	5/2/05	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
	7/19/05	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
	11/21/05	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
	2/9/06	140	ND<0.5	ND<0.5	0.67	1.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	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
	8/9/06	100	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
	11/8/06	400	ND<0.5	ND<0.5	1.7	1.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/14/07	410	ND<0.5	ND<0.5	2.2	2.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	2,300	ND<0.5	0.66	17	21	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	--	--
	8/2/07	580	5.7	0.64	6.8	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
	11/12/07	750	0.85	2.7	4.2	9.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	2/14/08	1,700	3.3	17	38	83	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	620	1.8	ND<0.5	12	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
	7/23/08	270	0.52	ND<0.5	3.9	1.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
	10/13/08	730	ND<0.5	ND<0.5	0.68	0.80	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<10	ND<0.5	ND<0.5
MW-2	6/1/93	170,000	20,000	21,000	3,300	18,000	--	--	--	--	--	--	--	--	--
	6/22/93	160,000	19,000	22,000	3,500	18,000	--	--	--	--	--	--	--	--	--
	10/6/93	110,000	17,000	17,000	3,000	15,000	--	--	--	--	--	--	--	--	--
	1/13/94	93,000	20,000	19,000	2,300	14,000	--	--	--	--	--	--	--	--	--
	3/30/94	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/25/94	41,000	9,600	7,300	840	7,800	--	--	--	--	--	--	--	--	--
	8/12/94	59,000	11,000	11,000	2,300	11,000	--	--	--	--	--	--	--	--	--
	12/14/94	63,000	13,000	13,000	2,200	12,000	--	--	--	--	--	--	--	--	--
	2/10/95	63,000	12,000	12,000	2,200	11,000	--	--	--	--	--	--	--	--	--
	6/15/95	61,000	11,000	12,000	1,900	11,000	--	--	--	--	--	--	--	--	--
	9/26/95	61,000	9,400	11,000	2,300	12,000	--	--	--	--	--	--	--	--	--
	12/15/95	48,000	8,000	8,300	2,200	12,000	--	--	--	--	--	--	--	--	--
	3/21/96	48,000	8,000	7,700	2,400	12,000	--	--	--	--	--	--	--	--	--
	6/13/96	33,000	7,300	8,800	1,900	12,000	ND<250	--	--	--	--	--	--	--	--
	9/16/96	8,600	510	640	180	1,300	ND<250	--	--	--	--	--	--	--	--
	12/2/96	29,000	4,400	4,000	1,300	6,100	ND<130	--	--	--	--	--	--	--	--
	3/7/97	13,000	1,800	1,100	270	2,000	ND<250	--	--	--	--	--	--	--	--
	6/12/97	68,000	7,800	6,600	2,300	11,000	ND<500	--	--	--	--	--	--	--	--
	9/29/97	15,000	1,500	97	740	1,800	ND<250	--	--	--	--	--	--	--	--

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-2 (cont.)	12/1/97	13,000	900	37	860	2,400	ND<250	--	--	--	--	--	--	--	--
	3/19/98	42,000	5,000	3,600	2,000	8,300	ND<250	--	--	--	--	--	--	--	--
	5/29/98	68,000	5,600	4,700	2,400	11,000	ND<250	--	--	--	--	--	--	--	--
	9/15/98	36,000	3,900	1,200	1,400	7,800	ND<250	--	--	--	--	--	--	--	--
	11/30/98	16,000	2,200	59	1,200	1,500	ND<250	--	--	--	--	--	--	--	--
	1/17/99	30,000	4,000	2,200	2,100	9,500	ND<250	--	--	--	--	--	--	--	--
	6/10/99	70,000	6,300	1,800	3,600	14,000	ND<500	--	--	--	--	--	--	--	--
	9/7/99	42,000	3,800	840	1,900	8,000	150	--	--	--	--	--	--	--	--
	12/13/99	14,000	1,400	87	690	110	34	--	--	--	--	--	--	--	--
	3/13/00	38,000	2,400	2,300	1,600	6,400	2,400	--	--	--	--	--	--	--	--
	6/12/00	56,000	4,000	950	2,300	7,200	ND<50	--	--	--	--	--	--	--	--
	11/10/00	35,000	5,100	850	1,500	3,200	230	--	--	--	--	--	--	--	--
	12/31/00	21,000	3,200	420	1,300	1,200	440	--	--	--	--	--	--	--	--
	3/27/01	3,500	420	64	16	280	120	--	--	--	--	--	--	--	--
	6/30/01	1,200	88	4.5	65	37	29	--	--	--	--	--	--	--	--
	9/26/01	53,000	8,500	1,500	2,400	4,600	270	--	--	--	--	--	--	--	--
	12/18/01	26,000	5,400	900	1,500	2,200	430	--	--	--	--	--	--	--	--
	1/22/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/18/02	4,200	240	7.3	200	53	89	--	--	--	--	--	--	--	--
	6/5/02	25,000	3,500	390	1,400	2,400	550	--	--	--	--	--	--	--	--
	8/21/02	10,000	1,200	32	620	300	160	--	--	--	--	--	--	--	--
	12/3/02	3,700	110	2.5	130	11	29	--	--	--	--	--	--	--	--
	3/4/03	8,700	1,100	77	350	540	230	ND<0.5	ND<0.5	ND<10	21	ND<150	ND<5	ND<0.5	ND<0.5
	6/10/03	6,300	660	35	190	120	410	ND<2.5	ND<2.5	ND<5	ND<25	ND<250	ND<25	ND<2.5	ND<2.5
	9/9/03	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
	12/23/03	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
	3/23/04	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
	5/10/04	7,300	1,000	51	240	290	1,800	ND<5	ND<5	14	ND<50	ND<500	ND<50	ND<5	ND<5
	8/4/04	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
	11/4/04	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
	1/12/05	16,000	1,900	640	570	1,500	1,900	ND<4	ND<4	19	28[e]	ND<400	ND<40	ND<4	ND<4
	5/2/05	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
	7/20/05	21,000	3,000	500	1,000	1,500	4,400	ND<7	ND<7	32	74[e]	ND<700	ND<70	ND<7	ND<7
	11/22/05	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
	2/9/06	25,000	3,300	720	1,300	2,200	2,500	ND<7	ND<7	27	490	ND<700	ND<70	ND<7	ND<7
	5/17/06	22,000	3,200	240	1,200	2,100	4,600	ND<7	ND<7	46	1,000	ND<700	ND<70	ND<7	ND<7

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-2 (cont.)	8/9/06	34,000	4,200	830	1,300	2,400	2,900	ND<9	ND<9	25	1,600	ND<900	ND<90	ND<9	ND<9
	11/8/06	27,000	3,600	300	1,200	1,800	1,500	ND<9	ND<9	15	1,100	ND<900	ND<90	ND<9	ND<9
	2/14/07	36,000	4,600	740	1,600	2,100	1,800	ND<5	ND<5	20	910	ND<700	ND<50	ND<5	ND<5
	5/17/07	37,000	7,400	680	1,900	2,400	3,000	ND<9	ND<9	24	2,600	ND<4,000	ND<90	--	--
	8/2/07	37,000	4,200	500	1,800	2,200	1,300	ND<9	ND<9	18	1,200	ND<2,000	ND<90	ND<9	ND<9
	11/12/07	25,000	5,900	120	1,700	820	1,400	ND<15	ND<15	16	720	ND<1,500	ND<150	ND<15	ND<15
	2/14/08	31,000	5,400	450	1,900	2,000	1,200	ND<15	ND<15	16	410	ND<1,500	ND<150	ND<15	ND<15
	5/8/08	29,000	3,200	620	1,400	1,700	580	ND<5	ND<5	10	210	ND<1,000	ND<50	ND<5	ND<5
	7/23/08	25,000	3,800	220	1,600	1,000	780	ND<5	ND<5	14	470	ND<900	ND<50	ND<5	ND<5
	10/13/08	31,000	7,600	160	1,800	440	1,600	ND<9	ND<9	20	710	ND<1,500	ND<90	ND<9	ND<9
MW-3	6/1/93	270	4.6	ND<0.5	ND<0.5	1.9	--	--	--	--	--	--	--	--	--
	6/22/93	160	8.2	ND<0.5	ND<0.5	0.72	--	--	--	--	--	--	--	--	--
	10/6/93	740	57	110	24	120	--	--	--	--	--	--	--	--	--
	1/13/94	83	2.6	0.67	0.78	4.2	--	--	--	--	--	--	--	--	--
	3/30/94	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/25/94	60	0.75	3.2	0.50	3.6	--	--	--	--	--	--	--	--	--
	8/12/94	310	7.3	14	2.6	13	--	--	--	--	--	--	--	--	--
	12/14/94	75	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	2/10/95	96	1.4	ND<0.5	ND<0.5	1.8	--	--	--	--	--	--	--	--	--
	6/15/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	9/26/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	12/15/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	11/4/04	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
	1/12/05	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
	5/2/05	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
	7/19/05	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
	11/21/05	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
	2/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	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
	8/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/8/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.71	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/14/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.54	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--
	8/2/07	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
	11/12/07	190	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
	2/14/08	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.83	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-3 (cont.)	5/8/08	57	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
	7/23/08	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
	10/13/08	280	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	61	ND<5	ND<0.5	ND<0.5
MW-4	3/30/94	120	4.2	15	2.5	26	--	--	--	--	--	--	--	--	--
	4/25/94	65	ND<0.5	1.8	ND<0.5	2.1	--	--	--	--	--	--	--	--	--
	8/12/94	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	12/14/94	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	2/10/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	6/15/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	9/26/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	12/15/95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	11/4/04	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
	1/12/05	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
	5/2/05	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
	7/19/05	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
	11/21/05	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
	2/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	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
	8/9/06	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
	11/8/06	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
	2/14/07	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
	5/17/07	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	--	--
	8/2/07	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
	11/12/07	NS[f]	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	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
	5/8/08	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
	7/23/08	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
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	3/30/94	7,500	1,300	20	ND<13	160	--	--	--	--	--	--	--	--	--
	4/25/94	6,500	1,100	41	130	740	--	--	--	--	--	--	--	--	--
	8/12/94	4,000	420	2.9	41	98	--	--	--	--	--	--	--	--	--
	12/14/94	4,800	660	ND<2.5	33	13	--	--	--	--	--	--	--	--	--
	2/10/95	5,200	490	ND<13	23	19	--	--	--	--	--	--	--	--	--
	6/15/95	460	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--	--
	9/26/95	1,400	61	ND<0.5	3.1	ND<0.5	--	--	--	--	--	--	--	--	--
	12/15/95	2,100	77	1.5	10	1.5	--	--	--	--	--	--	--	--	--

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-5 (cont.)	3/21/96	930	35	2.0	2.0	18	--	--	--	--	--	--	--	--	--
	6/13/96	610	38	0.72	1.9	2.0	ND<5	--	--	--	--	--	--	--	--
	9/16/96	380	29	ND<0.5	0.95	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	12/2/96	200	1.1	0.64	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	3/7/97	520	74	ND<0.5	0.58	1.5	ND<5	--	--	--	--	--	--	--	--
	6/12/97	140	5.3	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	9/29/97	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	12/1/97	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	3/19/98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	5/29/98	540	4.1	ND<0.5	ND<0.5	0.52	ND<5	--	--	--	--	--	--	--	--
	9/15/98	67	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	11/30/98	430	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	1/17/99	500	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	6/10/99	66	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	9/7/99	820	46	1.7	10	21	ND<5	--	--	--	--	--	--	--	--
	12/13/99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	3/13/00	270	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	6/12/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	--	--	--	--	--	--	--	--
	11/10/00	2,200	42	1.1	25	30	8.6	--	--	--	--	--	--	--	--
	12/31/00	1,300	21	ND<0.5	4.3	2.6	10	--	--	--	--	--	--	--	--
	3/27/01	1,200	11	ND<0.5	2.6	ND<0.5	21	--	--	--	--	--	--	--	--
	6/30/01	1,400	4.8	ND<0.5	1.5	0.56	14	--	--	--	--	--	--	--	--
	9/26/01	660	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.0	--	--	--	--	--	--	--	--
	12/18/01	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	1/22/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/18/02	890	0.65	ND<0.5	ND<0.5	ND<0.5	3.1	--	--	--	--	--	--	--	--
	6/5/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/21/02	2,100	20	ND<0.5	63	4.0	7.0	--	--	--	--	--	--	--	--
	12/3/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/4/03	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
	6/10/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	9/9/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	12/23/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/23/04	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
	5/10/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/4/04	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

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-5 (cont.)	11/4/04	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
	1/12/05	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
	5/2/05	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
	7/20/05	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
	11/21/05	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
	2/9/06	ND<50	ND<0.5	ND<0.5	0.63	1.0	1.0	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.79	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	220	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.8	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/8/06	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/14/07	200	ND<0.5	ND<0.5	ND<0.5	1.1	2.1	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--
	8/2/07	85	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	980	ND<0.5	ND<0.5	2.1	ND<0.5	1.0	ND<0.5	ND<0.5	ND<0.5	34	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	580	ND<0.5	ND<0.5	1.8	ND<0.5	0.60	ND<0.5	ND<0.5	ND<0.5	6.1	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	3/30/94	63,000	21,000	8,600	1,700	12,000	--	--	--	--	--	--	--	--	--
	4/25/94	77,000	22,000	12,000	2,300	16,000	--	--	--	--	--	--	--	--	--
	8/12/94	65,000	12,000	8,100	2,200	16,000	--	--	--	--	--	--	--	--	--
	12/14/94	65,000	18,000	9,500	2,200	14,000	--	--	--	--	--	--	--	--	--
	2/10/95	63,000	21,000	8,400	2,000	14,000	--	--	--	--	--	--	--	--	--
	6/15/95	75,000	20,000	11,000	2,100	15,000	--	--	--	--	--	--	--	--	--
	9/26/95	62,000	15,000	9,600	1,700	12,000	--	--	--	--	--	--	--	--	--
	12/15/95	61,000	15,000	9,000	2,300	15,000	--	--	--	--	--	--	--	--	--
	3/21/96	65,000	18,000	9,800	2,400	16,000	--	--	--	--	--	--	--	--	--
	6/13/96	29,000	8,600	3,300	2,200	12,000	ND<250	--	--	--	--	--	--	--	--
	9/16/96	42,000	6,400	1,800	2,100	11,000	ND<250	--	--	--	--	--	--	--	--
	12/2/96	28,000	3,000	1,100	970	8,300	ND<500	--	--	--	--	--	--	--	--
	3/7/97	12,000	2,000	190	520	2,300	ND<250	--	--	--	--	--	--	--	--
	6/12/97	37,000	3,900	470	1,600	6,200	ND<100	--	--	--	--	--	--	--	--
	9/29/97	34,000	3,500	370	1,600	5,200	ND<100	--	--	--	--	--	--	--	--
	12/1/97	20,000	2,100	ND<10	1,200	2,200	ND<100	--	--	--	--	--	--	--	--
	3/19/98	24,000	2,900	460	1,100	3,400	ND<100	--	--	--	--	--	--	--	--
	5/29/98	38,000	3,500	700	1,800	5,200	ND<100	--	--	--	--	--	--	--	--
	9/15/98	22,000	1,900	110	1,400	3,000	ND<100	--	--	--	--	--	--	--	--

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-6 (cont.)	11/30/98	9,900	770	16	820	710	ND<100	--	--	--	--	--	--	--	--
	1/17/99	14,000	2,200	160	1,700	3,600	ND<100	--	--	--	--	--	--	--	--
	6/10/99	22,000	1,600	160	1,400	2,900	5.5	--	--	--	--	--	--	--	--
	9/7/99	17,000	1,400	33	1,300	1,800	ND<50	--	--	--	--	--	--	--	--
	12/13/99	16,000	790	9.2	840	780	ND<25	--	--	--	--	--	--	--	--
	3/13/00	16,000	790	85	780	1,600	ND<25	--	--	--	--	--	--	--	--
	6/12/00	24,000	1,100	150	1,300	2,300	5,600	--	--	--	--	--	--	--	--
	11/10/00	13,000	440	7.0	760	350	1,000	--	--	--	--	--	--	--	--
	12/31/00	12,000	680	8.0	820	190	1,400	--	--	--	--	--	--	--	--
	3/27/01	14,000	330	17	940	670	380	--	--	--	--	--	--	--	--
	6/30/01	750	45	0.93	47	14	54	--	--	--	--	--	--	--	--
	9/26/01	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/18/01	43,000	3,800	350	1,900	3,000	900	--	--	--	--	--	--	--	--
	1/22/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/18/02	33,000	2,600	120	1,800	2,800	740	--	--	--	--	--	--	--	--
	6/5/02	10,000	1,100	16	700	180	600	--	--	--	--	--	--	--	--
	8/21/02	10,000	1,200	23	710	290	370	--	--	--	--	--	--	--	--
	12/3/02	16,000	1,700	63	970	630	1,500	--	--	--	--	--	--	--	--
	3/4/03	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
	6/10/03	9,500	860	15	380	47	2,600	ND<5	ND<5	18	ND<50	ND<500	ND<50	ND<5	ND<5
	9/9/03	11,000	1,000	16	630	120	2,500	ND<5	ND<5	20	52	ND<500	ND<50	ND<5	ND<5
	12/23/03	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
	3/23/04	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
	5/10/04	6,500	550	ND<10	71	43	3,700	ND<10	ND<10	31	ND<100	ND<1,000	ND<100	ND<10	ND<10
	8/4/04	8,200	990	19	300	120	3,300	ND<5	ND<5	23	ND<50	ND<500	ND<50	ND<5	ND<5
	11/4/04	9,600	1,100	30	320	160	2,200	ND<4	ND<4	18	22	ND<400	ND<40	ND<4	ND<4
	1/12/05	12,000	1,100	34	600	500	3,600	ND<4	ND<4	31	30	ND<400	ND<40	ND<4	ND<4
	5/2/05	14,000	630	22	610	920	4,000	ND<10	ND<10	32	120	ND<3,000	ND<100	ND<10	ND<10
	7/20/05	9,800	1,200	21	340	150	1800	ND<2.5	ND<2.5	14	140	ND<500	ND<25	ND<2.5	ND<2.5
	11/21/05	6,600	150	26	580	640	100	ND<1	ND<1	ND<1	13	ND<100	ND<10	ND<1	ND<1
	2/9/06	7,100	340	11	370	360	910	ND<2	ND<2	9.3	120	ND<200	ND<20	ND<2	ND<2
	5/17/06	7,100	270	5.1	320	290	930	ND<2	ND<2	8.4	260	ND<200	ND<20	ND<2	ND<2
	8/9/06	5,800	440	7.5	120	45	670	ND<2	ND<2	7.3	380	ND<2,000	ND<50	ND<2	ND<2
	11/8/06	9,200	990	37	390	140	310	ND<2	ND<2	3.2	110	ND<200	ND<20	ND<2	ND<2
	2/14/07	5,900	480	10	73	23	1,600	ND<2	ND<2	14	1,100	ND<500	ND<20	ND<2	ND<2
	5/17/07	3,700	240	3.4	30	10	770	ND<0.5	ND<0.5	9.2	800	ND<2,000	ND<5	--	--

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-6 (cont.)	8/2/07	15,000	1,800	120	980	510	310	ND<2.5	ND<2.5	3.	180	ND<250	ND<25	ND<2.5	ND<2.5
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	14,000	2,000	63	750	190	810	ND<2.5	ND<2.5	7.7	600	ND<250	ND<25	ND<2.5	ND<2.5
	5/8/08	15,000	1,700	59	700	130	540	ND<2.5	ND<2.5	5.9	410	ND<2,000	ND<25	ND<2.5	ND<2.5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	3/30/94	43,000	7,200	2,400	1,600	11,000	--	--	--	--	--	--	--	--	--
	4/25/94	30,000	3,900	1,000	940	6,900	--	--	--	--	--	--	--	--	--
	8/12/94	30,000	3,800	1,400	1,300	7,500	--	--	--	--	--	--	--	--	--
	12/14/94	31,000	3,600	1,200	900	6,400	--	--	--	--	--	--	--	--	--
	2/10/95	27,000	4,000	900	890	5,100	--	--	--	--	--	--	--	--	--
	6/15/95	17,000	920	680	740	4,100	--	--	--	--	--	--	--	--	--
	9/26/95	7,000	200	150	170	810	--	--	--	--	--	--	--	--	--
	12/15/95	11,000	350	170	540	1,900	--	--	--	--	--	--	--	--	--
	3/21/96	12,000	320	100	730	2,500	--	--	--	--	--	--	--	--	--
	6/13/96	5,900	98	19	370	620	ND<50	--	--	--	--	--	--	--	--
	9/16/96	7,800	140	43	440	590	ND<25	--	--	--	--	--	--	--	--
	12/2/96	6,300	87	29	290	430	ND<50	--	--	--	--	--	--	--	--
	3/7/97	4,500	35	19	360	470	ND<25	--	--	--	--	--	--	--	--
	6/12/97	3,900	29	5.2	170	48	ND<5	--	--	--	--	--	--	--	--
	9/29/97	6,100	56	9.0	340	190	ND<25	--	--	--	--	--	--	--	--
	12/1/97	6,500	24	ND<2.5	400	250	ND<25	--	--	--	--	--	--	--	--
	3/19/98	2,000	20	ND<2.5	73	79	ND<25	--	--	--	--	--	--	--	--
	5/29/98	5,700	22	7.3	290	350	ND<25	--	--	--	--	--	--	--	--
	9/15/98	1,700	15	ND<2.5	44	5.1	ND<25	--	--	--	--	--	--	--	--
	11/30/98	4,800	42	12	270	640	ND<25	--	--	--	--	--	--	--	--
	1/17/99	3,400	33	ND<5	200	190	ND<50	--	--	--	--	--	--	--	--
	6/10/99	1,700	7.8	1.5	23	4.1	ND<5	--	--	--	--	--	--	--	--
	9/7/99	1,900	9.7	2.1	70	2.9	ND<5	--	--	--	--	--	--	--	--
	12/13/99	1,900	8.0	1.1	10	1.1	ND<5	--	--	--	--	--	--	--	--
	3/13/00	1,500	7.5	ND<0.5	6.7	2.9	ND<5	--	--	--	--	--	--	--	--
	6/12/00	1,200	5.4	ND<0.5	5.2	1.0	ND<5	--	--	--	--	--	--	--	--
	11/10/00	1,000	3.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	12/31/00	620	1.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	--	--
	3/27/01	1,200	4.8	ND<0.5	6.7	0.94	ND<0.5	--	--	--	--	--	--	--	--
	6/30/01	2,800	10	1.7	75	170	ND<0.5	--	--	--	--	--	--	--	--

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-7	9/26/01	1,900	16	0.89	2.3	25	ND<0.5	--	--	--	--	--	--	--	--
(cont.)	12/18/01	3,000	13	0.88	3.4	3.4	ND<0.5	--	--	--	--	--	--	--	--
	1/22/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/18/02	3,100	7.3	1.5	38	110	ND<0.5	--	--	--	--	--	--	--	--
	6/5/02	1,800	7.6	1.0	39	20	ND<0.5	--	--	--	--	--	--	--	--
	8/21/02	3,300	7.6	0.70	85	36	ND<0.5	--	--	--	--	--	--	--	--
	12/3/02	1,700	5.4	ND<0.5	15	5.5	ND<0.5	--	--	--	--	--	--	--	--
	3/4/03	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
	6/10/03	550	0.80	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
	9/9/03	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
	12/23/03	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
	3/23/04	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
	5/10/04	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
	8/4/04	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
	11/4/04	1,600	2.	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
	1/12/05	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
	5/2/05	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
	7/20/05	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
	11/21/05	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
	2/9/06	270	ND<0.5	ND<0.5	1.2	0.98	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	930	0.84	ND<0.5	10	7.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	650	ND<0.5	ND<0.5	1.2	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
	11/8/06	800	ND<0.5	ND<0.5	1.0	0.62	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/14/07	800	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
	5/17/07	700	ND<0.5	ND<0.5	ND<0.5	0.71	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--
	8/2/07	3,200	1.3	ND<0.5	50	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	1,600	1.2	ND<0.5	4.5	1.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/08	1,400	2.2	0.74	2.8	0.93	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	2,300	3.9	1.4	8.9	5.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-8	9/5/03	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	--	--	--	--
	12/23/03	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
	3/23/04	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
	5/10/04	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
	8/4/04	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

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-8 (cont.)	11/4/04	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
	1/12/05	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
	5/2/05	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
	7/19/05	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
	11/21/05	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
	2/9/06	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	ND<5	ND<0.5	ND<0.5
	5/16/06	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
	8/9/06	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
	11/8/06	ND<50	1.2	1.9	ND<0.5	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
	2/14/07	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
	5/17/07	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	--	--
	8/2/07	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
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	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
	5/8/08	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
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	9/5/03	3,400	23	1.5	110	10	10	ND<0.5[b]	ND<0.5	ND<0.5	ND<5	--	--	--	--
	12/23/03	1,100	2.4	ND<0.5	0.80	0.80	2.1	ND<0.5	ND<0.5	ND<0.5	5.9	ND<50	ND<5	ND<0.5	ND<0.5
	3/23/04	760	8.5	ND<0.5	4.9	0.95	18.00	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/10/04	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
	8/4/04	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
	11/4/04	610	0.52	ND<0.5	1.3	ND<0.5	2	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	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
	5/2/05	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
	7/20/05	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
	11/21/05	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
	2/9/06	1,200	2.8	0.51	6.4	0.84	4.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	1,600	3.8	0.57	12	1.8	4.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/9/06	760	ND<0.5	ND<0.5	1.	ND<0.5	2.6	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/8/06	1,700	1.7	0.53	6.7	1.4	1.7	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/14/07	1,000	ND<0.5	ND<0.5	0.51	ND<0.5	0.51	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/17/07	870	ND<0.5	ND<0.5	0.54	ND<0.5	0.93	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	--	--
	8/2/07	NS[f]	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	3,300	68	2.1	110	7.8	16	ND<0.5	ND<0.5	ND<0.5	13	ND<50	ND<5	ND<0.5	ND<0.5

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-9 (cont.)	5/8/08	1,200	8.2	0.52	4.0	0.74	5.9	ND<0.5	ND<0.5	ND<0.5	5.4	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	9/5/03	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	--	--	--	--
	12/23/03	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
	3/23/04	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
	5/10/04	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
	8/4/04	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
	11/4/04	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
	1/12/05	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
	5/2/05	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
	7/19/05	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
	11/21/05	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
	2/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	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
	8/9/06	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
	11/8/06	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
	2/14/07	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
	5/17/07	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	--	--
	8/2/07	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
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	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
	5/8/08	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
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-11	12/16/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
VW-2	8/4/04	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
	11/4/04	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
	1/12/05	3,800	210	ND<5	90	54	2,900	ND<5	ND<5	33	26[e]	ND<500	ND<50	ND<5	ND<5
	5/2/05	2,600	84	ND<2	13	7.0	960	ND<2	ND<2	12	57	ND<500	ND<20	ND<2	ND<2
	7/20/05	6,200	240	13	290	480	6,600	ND<2	ND<2	56	59[e]	ND<2,000	ND<20	ND<2	ND<2
	11/21/05	3,100	100	ND<9	22	10	5,300	ND<9	ND<9	54	76[e]	ND<900	ND<90	ND<9	ND<9
	2/9/06	3,500	140	ND<25	130	36	12,000	ND<25	ND<25	65	2,800	ND<2,500	ND<250	ND<25	ND<25
	5/17/06	1,800	90	2.6	39	11	1,200	ND<2.5	ND<2.5	12	700	ND<250	ND<25	ND<2.5	ND<2.5

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
W-2 (cont.)	8/9/06	4,300	86	3.5	200	16.	2,500	ND<2.5	ND<2.5	28	2,800	ND<5,000	ND<25	ND<2.5	ND<2.5
	11/8/06	3,200	46.	3.1	10.	4.8	1,500	ND<3	ND<3	11	7,100	ND<800	ND<30	ND<3	ND<3
	2/14/07	3,300	75	4.6	50	82	580	ND<2	ND<2	7.	4,100	ND<500	ND<20	ND<2	ND<2
	5/17/07	3,500	51	7.3	17	24	100	ND<2.5	ND<2.5	ND<2.5	7,100	ND<250	ND<25	--	--
	8/2/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	5,700	180	14	150	120	530	ND<2.5	ND<2.5	4.1	5,000	ND<250	ND<25	ND<2.5	ND<2.5
	5/8/08	3,000	40	3.8	32	34	270	ND<1.5	ND<1.5	2.7	4,500	ND<250	ND<15	ND<1.5	ND<1.5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
VW-3	8/4/04	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
	11/4/04	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
	1/12/05	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
	5/2/05	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
	7/20/05	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
	11/21/05	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
	2/9/06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/16/06	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
	8/9/06	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
	11/8/06	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
	2/14/07	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
	5/17/07	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	--	--
	8/2/07	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
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/08	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
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TP-1	7/20/05	42,000	2,800	1,100	1,700	4,800	12,000	ND<20	ND<20	92	130	ND<2,000	ND<200	ND<20	ND<20
	11/22/05	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
	2/9/06	19,000	1,400	230	990	1,700	8,900	ND<15	ND<15	72	2,200	ND<1,500	ND<150	ND<15	ND<15
	5/17/06	20,000	1,400	200	920	1,800	9,200	ND<20	ND<20	37	2,500	ND<10,000	ND<200	ND<20	ND<20
	8/9/06	28,000	1,600	150	1,200	2,200	13,000	ND<15	ND<15	84	4,900	ND<2,500	ND<150	ND<15	ND<15
	11/8/06	20,000	1,100	78	990	1,600	6800	ND<15	ND<15	47	4,400	ND<8,000	ND<150	ND<15	ND<15
	2/14/07	15,000	820	37	810	1,000	8,300	ND<15	ND<15	58	8,500	ND<4,000	ND<150	ND<15	ND<15
	5/17/07	16,000	850	35	810	1,200	6,700	ND<10	ND<10	42	12,000	ND<2,000	ND<100	--	--

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
TP-1 (cont.)	8/2/07	15,000	2,000	100	970	630	3,400	ND<7	ND<7	25	4,000	ND<700	ND<70	ND<7	ND<7
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	18,000	1,100	49	1,200	910	7,000	ND<15	ND<15	58	4,200	ND<1,500	ND<150	ND<15	ND<15
	5/8/08	12,000	890	54	770	380	2,500	ND<5	ND<5	22	3,400	ND<2,500	ND<50	ND<5	ND<5
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TP-2	7/20/05	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
	11/22/05	16,000	1,200	140	840	820	52,000	ND<90	ND<90	340	1,200	ND<9,000	ND<900	ND<90	ND<90
	2/9/06	2,700	94	2.9	28	14	1,200	ND<2.5	ND<2.5	13	1,600	ND<250	ND<25	ND<2.5	ND<2.5
	5/17/06	31,000	2,200	1,100	1,500	3,300	87,000	ND<90	ND<90	680	4,800	ND<15,000	ND<1,500	ND<90	ND<90
	8/9/06	14,000	1,400	86	1,200	830	56,000	ND<2.5	ND<2.5	350	2,800	ND<4,000	ND<25	ND<2.5	ND<2.5
	11/8/06	16,000	1,300	ND<90	930	370	38,000	ND<90	ND<90	280	3,600	ND<40,000	ND<900	ND<90	ND<90
	2/14/07	22,000	1,900	230	1,700	1,600	53,000	ND<90	ND<90	400	2,800	ND<20,000	ND<900	ND<90	ND<90
	5/17/07	ND<25,000	2,400	51	1,500	510	69,000	ND<2	ND<0.5	550	4,300	ND<25,000	ND<5	--	--
	8/2/07	10,000	1,200	ND<25	640	140	14,000	ND<25	ND<25	110	16,000	ND<10,000	ND<250	ND<25	ND<25
	11/12/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/08	12,000	920	28	850	740	17,000	ND<25	ND<25	120	5,900	ND<4,000	ND<250	ND<25	ND<25
	5/8/08	7,400	710	10	510	110	6,400	ND<8	ND<8	64	5,200	ND<12,000	ND<80	ND<8	ND<8
	7/23/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DW-1	5/22/08	5,100	470	150	210	570	100	ND<0.9	ND<0.9	0.98	76	ND<90	ND<9	ND<0.9	ND<0.9
	7/23/08	560	43	5.2	18	40	16	ND<0.5	ND<0.5	ND<0.5	21	ND<100	ND<5	ND<0.5	ND<0.5
	10/13/08	2,800	370	15	120	78	140	ND<0.5	ND<0.5	1.2	220	ND<300	ND<80	ND<0.5	ND<0.5
DW-2	5/22/08	11,000	1,300	170	460	230	620	ND<2.5	ND<2.5	9.6	870	ND<400	ND<25	ND<2.5	ND<2.5
	7/23/08	7,600	980	44	180	55	420	ND<2	ND<2	5.7	720	ND<200	ND<20	ND<2	ND<2
	10/13/08	7,300	910	23	120	18	280	ND<1.5	ND<1.5	3.1	650	ND<2,000	ND<50	ND<1.5	ND<1.5
DW-3	5/22/08	4,700	8.7	2.1	120	200	0.86	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	2,800	8.1	1.4	94	100	2.8	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	4,100	59	10	160	70	1.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<80	ND<0.5	ND<0.5
DW-4	5/22/08	1,200	4.2	8.6	16	200	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	7/23/08	91	0.79	ND<0.5	6.5	7.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/13/08	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	43	ND<0.5	ND<0.5
MW-A	1/17/99	5,800	1,700	85	65	320	ND<5	--	--	--	--	--	--	--	--
MW-B	1/17/99	4,400	240	30	21	39	ND<5	--	--	--	--	--	--	--	--
MW-C	1/17/99	1,800	0.80	ND<0.5	ND<0.5	0.55	ND<5	--	--	--	--	--	--	--	--
MW-D	1/17/99	5,600	1,600	130	66	220	ND<5	--	--	--	--	--	--	--	--

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date[a]	TPHg[b] (ug/l)	Benzene[b] (ug/l)	Toluene[b] (ug/l)	Ethylbenzene[b] (ug/l)	Xylenes[b] (ug/l)	MTBE[b] (ug/l)	DIPE[b] (ug/l)	ETBE[b] (ug/l)	TAME[b] (ug/l)	TBA[b] (ug/l)	Methanol[b] (ug/l)	Ethanol[b] (ug/l)	1,2-DCA[b] (ug/l)	EDB[b] (ug/l)
MW-E	1/17/99	5,700	1,600	180	180	310	ND<50	--	--	--	--	--	--	--	--
	6/10/99	5,000	1,300	130	320	450	ND<25	--	--	--	--	--	--	--	--
MW-W	1/17/99	23,000	7,600	760	1,400	5,000	ND<50	--	--	--	--	--	--	--	--
	6/10/99	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) ND - Not detected at the reporting limit listed.
(d) "-" Not analyzed.
(e) 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.
(f) Not sampled; well dry during sampling event.

ATTACHMENT E

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORMS

KIFF Analytical LLC

Report Number : 65316
Date : 10/17/2008

Mike Purchase
Arctos Environmental
1332 Peralta Avenue
Berkeley, CA 94702

Subject : 14 Water Samples
Project Name : Tesoro - Livermore
Project Number : 01LV

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 : 65316
Date : 10/17/2008

Subject : 14 Water Samples
Project Name : Tesoro - Livermore
Project Number : 01LV

Case Narrative

The Method Reporting Limit for Methanol has been increased due to the presence of an interfering compound for samples DW-1, DW-2, MW-2, IP-2 and IP-4.

The Method Reporting Limit for Ethanol has been increased due to the presence of an interfering compound for samples DW-1, DW-3, DW-2, IP-2, IP-3, IP-6, IP-7 and MW-1.

KIFF Analytical LLC

Report Number : 65316

Date : 10/17/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Sample : **DW-1** Matrix : Water Lab Number : 65316-01

Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**370**	0.50	ug/L	EPA 8260B	10/15/2008
Toluene	**15**	0.50	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**120**	0.50	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**78**	0.50	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**140**	0.50	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**1.2**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**220**	5.0	ug/L	EPA 8260B	10/15/2008
Methanol	**< 300**	300	ug/L	EPA 8260B	10/15/2008
Ethanol	**< 80**	80	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**2800**	50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	99.4		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	10/15/2008

KIFF Analytical LLC

Report Number : 65316

Date : 10/17/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Sample : **DW-4** Matrix : Water Lab Number : 65316-02

Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	10/15/2008
Methanol	**< 50**	50	ug/L	EPA 8260B	10/15/2008
Ethanol	**43**	5.0	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	98.0		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/15/2008

KIFF Analytical LLC

Report Number : 65316

Date : 10/17/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Sample : **DW-3** Matrix : Water Lab Number : 65316-03

Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**59**	0.50	ug/L	EPA 8260B	10/15/2008
Toluene	**10**	0.50	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**160**	0.50	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**70**	0.50	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**1.9**	0.50	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	10/15/2008
Methanol	**< 50**	50	ug/L	EPA 8260B	10/15/2008
Ethanol	**< 80**	80	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**4100**	50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	92.3		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	98.5		% Recovery	EPA 8260B	10/15/2008

KIFF Analytical LLC

Report Number : 65316
Date : 10/17/2008

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **DW-2** Matrix : Water Lab Number : 65316-04
Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**910**	1.5	ug/L	EPA 8260B	10/15/2008
Toluene	**23**	1.5	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**120**	1.5	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**18**	2.5	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**280**	1.5	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 1.5**	1.5	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 1.5**	1.5	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**3.1**	1.5	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**650**	7.0	ug/L	EPA 8260B	10/15/2008
Methanol	**< 2000**	2000	ug/L	EPA 8260B	10/15/2008
Ethanol	**< 50**	50	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**7300**	150	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 1.5**	1.5	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 1.5**	1.5	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	89.6		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	91.3		% Recovery	EPA 8260B	10/15/2008

KIFF Analytical LLC

Report Number : 65316

Date : 10/17/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Sample : **MW-2** Matrix : Water Lab Number : 65316-05

Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**7600**	15	ug/L	EPA 8260B	10/15/2008
Toluene	**160**	9.0	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**1800**	9.0	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**440**	9.0	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**1600**	9.0	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 9.0**	9.0	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 9.0**	9.0	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**20**	9.0	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**710**	70	ug/L	EPA 8260B	10/15/2008
Methanol	**< 1500**	1500	ug/L	EPA 8260B	10/15/2008
Ethanol	**< 90**	90	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**31000**	900	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 9.0**	9.0	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 9.0**	9.0	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	10/15/2008

KIFF Analytical LLC

Report Number : 65316

Date : 10/17/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Sample : **IP-1** Matrix : Water Lab Number : 65316-06

Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**3100**	15	ug/L	EPA 8260B	10/15/2008
Toluene	**3300**	15	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**2300**	15	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**7700**	15	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**< 15**	15	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 15**	15	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 15**	15	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**< 15**	15	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**98**	70	ug/L	EPA 8260B	10/15/2008
Methanol	**< 1500**	1500	ug/L	EPA 8260B	10/15/2008
Ethanol	**< 150**	150	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**55000**	1500	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 15**	15	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 15**	15	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	98.5		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	10/15/2008

KIFF Analytical LLC

Report Number : 65316
Date : 10/17/2008

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-2** Matrix : Water Lab Number : 65316-07
Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1900**	2.5	ug/L	EPA 8260B	10/15/2008
Toluene	**58**	0.90	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**600**	0.90	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**630**	0.90	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**180**	0.90	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 0.90**	0.90	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 0.90**	0.90	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**9.4**	0.90	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**46**	5.0	ug/L	EPA 8260B	10/15/2008
Methanol	**< 90**	90	ug/L	EPA 8260B	10/15/2008
Ethanol	**< 20**	20	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**13000**	250	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 0.90**	0.90	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 0.90**	0.90	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	88.5		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	97.3		% Recovery	EPA 8260B	10/15/2008

KIFF Analytical LLC

Report Number : 65316
Date : 10/17/2008

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-3** Matrix : Water Lab Number : 65316-08
Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**83**	0.50	ug/L	EPA 8260B	10/15/2008
Toluene	**4.7**	0.50	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**11**	0.50	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**54**	0.50	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**72**	0.50	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**0.84**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**71**	5.0	ug/L	EPA 8260B	10/15/2008
Methanol	**< 50**	50	ug/L	EPA 8260B	10/15/2008
Ethanol	**< 8.0**	8.0	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**1700**	50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	98.6		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/15/2008

KIFF Analytical LLC

Report Number : 65316
Date : 10/17/2008

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-4** Matrix : Water Lab Number : 65316-09
Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**110**	1.5	ug/L	EPA 8260B	10/15/2008
Toluene	**11**	1.5	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**78**	1.5	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**310**	1.5	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**3700**	15	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 1.5**	1.5	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 1.5**	1.5	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**7.1**	1.5	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**15000**	70	ug/L	EPA 8260B	10/15/2008
Methanol	**< 2000**	2000	ug/L	EPA 8260B	10/15/2008
Ethanol	**< 15**	15	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**4200**	150	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 1.5**	1.5	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 1.5**	1.5	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	97.5		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	10/15/2008

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Report Number : 65316
Date : 10/17/2008

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-5** Matrix : Water Lab Number : 65316-10
Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**14**	0.50	ug/L	EPA 8260B	10/14/2008
Toluene	**13**	0.50	ug/L	EPA 8260B	10/14/2008
Ethylbenzene	**8.7**	0.50	ug/L	EPA 8260B	10/14/2008
Total Xylenes	**32**	0.50	ug/L	EPA 8260B	10/14/2008
Methyl-t-butyl ether (MTBE)	**19**	0.50	ug/L	EPA 8260B	10/14/2008
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/14/2008
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/14/2008
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	10/14/2008
Tert-Butanol	**26**	5.0	ug/L	EPA 8260B	10/14/2008
Methanol	**< 50**	50	ug/L	EPA 8260B	10/14/2008
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	10/14/2008
TPH as Gasoline	**720**	50	ug/L	EPA 8260B	10/14/2008
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/14/2008
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/14/2008
1,2-Dichloroethane-d4 (Surr)	98.9		% Recovery	EPA 8260B	10/14/2008
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	10/14/2008

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Date : 10/17/2008

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-6** Matrix : Water Lab Number : 65316-11
Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**150**	0.50	ug/L	EPA 8260B	10/15/2008
Toluene	**1.6**	0.50	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**1.5**	0.50	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**3.5**	0.50	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**7.4**	0.50	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**10**	5.0	ug/L	EPA 8260B	10/15/2008
Methanol	**< 50**	50	ug/L	EPA 8260B	10/15/2008
Ethanol	**< 50**	50	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**1400**	50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	99.1		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	98.1		% Recovery	EPA 8260B	10/15/2008

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Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-7** Matrix : Water Lab Number : 65316-12
Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**350**	0.90	ug/L	EPA 8260B	10/15/2008
Toluene	**6.6**	0.90	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**150**	0.90	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**60**	0.90	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**97**	0.90	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 0.90**	0.90	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 0.90**	0.90	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**2.5**	0.90	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**76**	5.0	ug/L	EPA 8260B	10/15/2008
Methanol	**< 90**	90	ug/L	EPA 8260B	10/15/2008
Ethanol	**< 50**	50	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**6000**	90	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 0.90**	0.90	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 0.90**	0.90	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	93.8		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	98.9		% Recovery	EPA 8260B	10/15/2008

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Report Number : 65316
Date : 10/17/2008

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-1** Matrix : Water Lab Number : 65316-13
Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**0.68**	0.50	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**0.80**	0.50	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	10/15/2008
Methanol	**< 50**	50	ug/L	EPA 8260B	10/15/2008
Ethanol	**< 10**	10	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**730**	50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	96.2		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/15/2008

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Report Number : 65316
Date : 10/17/2008

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **MW-3** Matrix : Water Lab Number : 65316-14
Sample Date :10/13/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	10/15/2008
Methanol	**61**	50	ug/L	EPA 8260B	10/15/2008
Ethanol	**< 5.0**	5.0	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	**280**	50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	**< 0.50**	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	98.7		% Recovery	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	10/15/2008

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Date : 10/17/2008

QC Report : Method Blank Data

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	10/14/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Methanol	< 50	50	ug/L	EPA 8260B	10/14/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	10/14/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/14/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	10/14/2008
Toluene - d8 (Surr)	100		%	EPA 8260B	10/14/2008
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/15/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	10/14/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Methanol	< 50	50	ug/L	EPA 8260B	10/14/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	10/14/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/14/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
1,2-Dichloroethane-d4 (Surr)	99.5		%	EPA 8260B	10/14/2008
Toluene - d8 (Surr)	100		%	EPA 8260B	10/14/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/16/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	10/16/2008
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	10/14/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Methanol	< 50	50	ug/L	EPA 8260B	10/14/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	10/14/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/14/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	10/14/2008

Report Number : 65316

QC Report : Method Blank Data

Date : 10/17/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	10/14/2008
Toluene - d8 (Surr)	99.6		%	EPA 8260B	10/14/2008
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/15/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/15/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/15/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/15/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	10/15/2008
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	10/15/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	10/15/2008
Methanol	< 50	50	ug/L	EPA 8260B	10/15/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/15/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	10/15/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	10/15/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/15/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	10/15/2008
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	10/15/2008
Toluene - d8 (Surr)	100		%	EPA 8260B	10/15/2008

Report Number : 65316

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/17/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

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
1,2-Dichloroethane	65331-04	<0.50	39.2	39.2	38.6	38.2	ug/L	EPA 8260B	10/15/08	98.7	97.6	1.07	70-130	25
Benzene	65331-04	<0.50	40.0	40.0	39.8	39.6	ug/L	EPA 8260B	10/15/08	99.4	98.9	0.427	70-130	25
Methyl-t-butyl ether	65331-04	3.7	39.5	39.5	40.0	39.3	ug/L	EPA 8260B	10/15/08	92.0	90.2	1.98	70-130	25
Tert-Butanol	65331-04	<5.0	200	200	204	202	ug/L	EPA 8260B	10/15/08	102	101	1.34	70-130	25
Toluene	65331-04	1.1	39.5	39.5	40.1	40.0	ug/L	EPA 8260B	10/15/08	98.7	98.4	0.340	70-130	25
Benzene	65319-02	<0.50	40.0	40.1	40.2	40.4	ug/L	EPA 8260B	10/15/08	100	101	0.338	70-130	25
Tert-Butanol	65319-02	<5.0	200	200	191	188	ug/L	EPA 8260B	10/15/08	95.5	94.0	1.56	70-130	25
Toluene	65319-02	<0.50	39.5	39.5	38.4	38.3	ug/L	EPA 8260B	10/15/08	97.4	96.8	0.631	70-130	25
1,2-Dichloroethane	65311-08	<0.50	39.2	39.2	39.7	39.6	ug/L	EPA 8260B	10/14/08	101	101	0.256	70-130	25
Benzene	65311-08	<0.50	40.1	40.1	40.7	40.6	ug/L	EPA 8260B	10/14/08	101	101	0.411	70-130	25
Methyl-t-butyl ether	65311-08	0.73	39.6	39.6	40.6	39.6	ug/L	EPA 8260B	10/14/08	101	98.2	2.50	70-130	25
Tert-Butanol	65311-08	<5.0	200	200	203	198	ug/L	EPA 8260B	10/14/08	102	99.0	2.58	70-130	25
Toluene	65311-08	<0.50	39.5	39.5	42.0	41.8	ug/L	EPA 8260B	10/14/08	106	106	0.539	70-130	25
Methyl-t-butyl ether	65367-01	1.7	39.6	39.6	39.3	38.6	ug/L	EPA 8260B	10/15/08	95.0	93.3	1.81	70-130	25
Tert-Butanol	65367-01	82	200	200	291	294	ug/L	EPA 8260B	10/15/08	104	106	1.10	70-130	25
1,2-Dichloroethane	65323-03	<0.50	39.2	39.2	42.2	41.7	ug/L	EPA 8260B	10/14/08	108	106	1.09	70-130	25
Benzene	65323-03	<0.50	40.1	40.1	37.8	36.2	ug/L	EPA 8260B	10/14/08	94.2	90.4	4.23	70-130	25
Methyl-t-butyl ether	65323-03	3.8	39.6	39.6	36.8	39.5	ug/L	EPA 8260B	10/14/08	83.6	90.3	7.66	70-130	25

Report Number : 65316

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/17/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

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	65323-03	<5.0	200	200	199	200	ug/L	EPA 8260B	10/14/08	99.5	99.8	0.341	70-130	25
Toluene	65323-03	<0.50	39.5	39.5	38.0	37.0	ug/L	EPA 8260B	10/14/08	96.2	93.7	2.61	70-130	25
1,2-Dichloroethane	65324-01	<0.50	39.2	39.2	42.4	41.7	ug/L	EPA 8260B	10/15/08	108	106	1.62	70-130	25
Benzene	65324-01	<0.50	40.1	40.1	38.4	37.5	ug/L	EPA 8260B	10/15/08	95.6	93.4	2.30	70-130	25
Methyl-t-butyl ether	65324-01	<0.50	39.6	39.6	36.8	36.7	ug/L	EPA 8260B	10/15/08	92.9	92.8	0.159	70-130	25
Tert-Butanol	65324-01	<5.0	200	200	203	203	ug/L	EPA 8260B	10/15/08	101	101	0.121	70-130	25
Toluene	65324-01	<0.50	39.5	39.5	39.9	39.2	ug/L	EPA 8260B	10/15/08	101	99.0	1.96	70-130	25

Report Number : 65316

QC Report : Laboratory Control Sample (LCS)

Date : 10/17/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dichloroethane	39.2	ug/L	EPA 8260B	10/15/08	101	70-130
Benzene	40.1	ug/L	EPA 8260B	10/15/08	97.2	70-130
Methyl-t-butyl ether	39.6	ug/L	EPA 8260B	10/15/08	95.7	70-130
Tert-Butanol	200	ug/L	EPA 8260B	10/15/08	96.3	70-130
Toluene	39.5	ug/L	EPA 8260B	10/15/08	96.8	70-130
Benzene	40.1	ug/L	EPA 8260B	10/15/08	96.0	70-130
Tert-Butanol	200	ug/L	EPA 8260B	10/15/08	93.1	70-130
Toluene	39.5	ug/L	EPA 8260B	10/15/08	90.8	70-130
1,2-Dichloroethane	39.9	ug/L	EPA 8260B	10/14/08	96.3	70-130
Benzene	39.9	ug/L	EPA 8260B	10/14/08	98.0	70-130
Methyl-t-butyl ether	39.5	ug/L	EPA 8260B	10/14/08	97.9	70-130
Tert-Butanol	200	ug/L	EPA 8260B	10/14/08	97.8	70-130
Toluene	39.9	ug/L	EPA 8260B	10/14/08	101	70-130
Methyl-t-butyl ether	39.5	ug/L	EPA 8260B	10/15/08	94.1	70-130
Tert-Butanol	200	ug/L	EPA 8260B	10/15/08	97.1	70-130
1,2-Dichloroethane	39.1	ug/L	EPA 8260B	10/14/08	108	70-130
Benzene	40.0	ug/L	EPA 8260B	10/14/08	93.0	70-130

Report Number : 65316

QC Report : Laboratory Control Sample (LCS)

Date : 10/17/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Methyl-t-butyl ether	39.5	ug/L	EPA 8260B	10/14/08	84.8	70-130
Tert-Butanol	200	ug/L	EPA 8260B	10/14/08	97.7	70-130
Toluene	39.4	ug/L	EPA 8260B	10/14/08	97.5	70-130
1,2-Dichloroethane	39.2	ug/L	EPA 8260B	10/15/08	104	70-130
Benzene	40.1	ug/L	EPA 8260B	10/15/08	94.0	70-130
Methyl-t-butyl ether	39.6	ug/L	EPA 8260B	10/15/08	84.2	70-130
Tert-Butanol	200	ug/L	EPA 8260B	10/15/08	99.2	70-130
Toluene	39.5	ug/L	EPA 8260B	10/15/08	99.6	70-130

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

October 21, 2008

CLS Work Order #: CRJ0557
COC #: 65316

Angelique Showman
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 10/14/08 09:35. 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

KIFF Analytical	Project: Tesoro Livermore	
2795 Second St. Suite 300	Project Number: 081013-WWI	**CLS Work Order #: CRJ0557**
Davis, CA 95616	Project Manager: Angelique Showman	COC #: 65316

CRJ0557

KIFF Analytical LLC
2795 Second Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4808

CLS
3249 Fitzgerald Road
Rancho Cordova, CA 95742
916 638-7301

COC No: 65316 Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Angelique Showman
Company/Address: Kiff Analytical
Phone No.: 530-297-4800
FAX No.: 530-297-4808
Project Number: 081013-WWI
P.O. No.: 65316
Project Name: Tesoro - Livermore
Project Address:

EDF Report? NO

Recommended but not mandatory to complete this section:
Sampling Company Log Code:
Global ID:
Deliverables to (Email Address): inbox@kiffanalytical.com

Sample Designation	Sampling Date	Sampling Time	Container / Preservative: 500 ml Poly None	Matrix: Water	Analysis Request: Alkalinity SM 2320 (1)	Anions by EPA 300.0 (1)	Iron, Ferrous	TAT: Standard	For Lab Use Only
IP-1	10/13/08	14:12	2	X	X	X	X	X	
IP-2	10/13/08	12:37	2	X	X	X	X	X	
IP-3	10/13/08	13:17	2	X	X	X	X	X	
IP-4	10/13/08	14:00	2	X	X	X	X	X	
IP-5	10/13/08	10:37	2	X	X	X	X	X	
IP-6	10/13/08	13:33	2	X	X	X	X	X	
IP-7	10/13/08	14:05	2	X	X	X	X	X	

	Date	Time	
Relinquished by:	10/14/08	0935	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by: 10/14/08 0935	Date	Time	Received by Laboratory:

Remarks: Please refer to attached Test Detail.

Bill to: Accounts Payable

CALIFORNIA LABORATORY SERVICES

KIFF Analytical	Project: Tesoro Livermore	
2795 Second St. Suite 300	Project Number: 081013-WWI	**CLS Work Order #: CRJ0557**
Davis, CA 95616	Project Manager: Angelique Showman	COC #: 65316

CRJ0557

Test Detail for Kiff Work Order: 65316

Alkalinity SM 2320 (1)
Alkalinity, Total (as CaCO3)

Anions by EPA 300.0 (1)
Nitrate as N
Sulfate

Page 1 of 1

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

Project: Tesoro Livermore
Project Number: 081013-WWI
Project Manager: Angelique Showman

CLS Work Order #: CRJ0557
COC #: 65316

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
IP-1 (CRJ0557-01) Water Sampled: 10/13/08 14:12 Received: 10/14/08 09:35									
Total Alkalinity	**340**	5.0	mg/L	1	CR08596	10/14/08	10/14/08	SM2310B	
Bicarbonate as CaCO3	**340**	5.0	"	"	"	"	"	"	
Carbonate as CaCO3	ND	5.0	"	"	"	"	"	"	
Hydroxide as CaCO3	ND	5.0	"	"	"	"	"	"	
Ferrous Iron	ND	0.10	"	"	CR08595	10/14/08	10/14/08	SM3500-Fe D	
Nitrate as N	ND	0.50	"	"	CR08615	10/15/08	10/15/08	EPA 300.0	
Sulfate as SO4	**45**	2.5	"	5	"	"	10/17/08	"	
IP-2 (CRJ0557-02) Water Sampled: 10/13/08 12:37 Received: 10/14/08 09:35									
Total Alkalinity	**470**	5.0	mg/L	1	CR08596	10/14/08	10/14/08	SM2310B	
Bicarbonate as CaCO3	**470**	5.0	"	"	"	"	"	"	
Carbonate as CaCO3	ND	5.0	"	"	"	"	"	"	
Hydroxide as CaCO3	ND	5.0	"	"	"	"	"	"	
Ferrous Iron	ND	0.10	"	"	CR08595	10/14/08	10/14/08	SM3500-Fe D	
Nitrate as N	ND	0.50	"	"	CR08615	10/15/08	10/15/08	EPA 300.0	
Sulfate as SO4	**19**	0.50	"	"	"	"	"	"	
IP-3 (CRJ0557-03) Water Sampled: 10/13/08 13:17 Received: 10/14/08 09:35									
Total Alkalinity	**380**	5.0	mg/L	1	CR08596	10/14/08	10/14/08	SM2310B	
Bicarbonate as CaCO3	**330**	5.0	"	"	"	"	"	"	
Carbonate as CaCO3	**55**	5.0	"	"	"	"	"	"	
Hydroxide as CaCO3	ND	5.0	"	"	"	"	"	"	
Ferrous Iron	ND	0.10	"	"	CR08595	10/14/08	10/14/08	SM3500-Fe D	
Nitrate as N	ND	0.50	"	"	CR08615	10/15/08	10/15/08	EPA 300.0	
Sulfate as SO4	**60**	2.5	"	5	"	"	10/17/08	"	

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

Project: Tesoro Livermore
Project Number: 081013-WWI
Project Manager: Angelique Showman

CLS Work Order #: CRJ0557
COC #: 65316

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
IP-4 (CRJ0557-04) Water	**Sampled: 10/13/08 14:00**	**Received: 10/14/08 09:35**							
Total Alkalinity	**160**	5.0	mg/L	1	CR08596	10/14/08	10/14/08	SM2310B	
Bicarbonate as CaCO3	**160**	5.0	"	"	"	"	"	"	
Carbonate as CaCO3	ND	5.0	"	"	"	"	"	"	
Hydroxide as CaCO3	ND	5.0	"	"	"	"	"	"	
Ferrous Iron	ND	0.10	"	"	CR08595	10/14/08	10/14/08	SM3500-Fe D	
Nitrate as N	ND	0.50	"	"	CR08615	10/15/08	10/15/08	EPA 300.0	
Sulfate as SO4	**20**	0.50	"	"	"	"	"	"	
IP-5 (CRJ0557-05) Water	**Sampled: 10/13/08 10:37**	**Received: 10/14/08 09:35**							
Total Alkalinity	**340**	5.0	mg/L	1	CR08596	10/14/08	10/14/08	SM2310B	
Bicarbonate as CaCO3	**340**	5.0	"	"	"	"	"	"	
Carbonate as CaCO3	ND	5.0	"	"	"	"	"	"	
Hydroxide as CaCO3	ND	5.0	"	"	"	"	"	"	
Ferrous Iron	ND	0.10	"	"	CR08595	10/14/08	10/14/08	SM3500-Fe D	
Nitrate as N	ND	0.50	"	"	CR08615	10/15/08	10/15/08	EPA 300.0	
Sulfate as SO4	**40**	2.5	"	5	"	"	10/17/08	"	
IP-6 (CRJ0557-06) Water	**Sampled: 10/13/08 13:33**	**Received: 10/14/08 09:35**							
Total Alkalinity	**320**	5.0	mg/L	1	CR08596	10/14/08	10/14/08	SM2310B	
Bicarbonate as CaCO3	**320**	5.0	"	"	"	"	"	"	
Carbonate as CaCO3	ND	5.0	"	"	"	"	"	"	
Hydroxide as CaCO3	ND	5.0	"	"	"	"	"	"	
Ferrous Iron	ND	0.10	"	"	CR08595	10/14/08	10/14/08	SM3500-Fe D	
Nitrate as N	**2.0**	0.50	"	"	CR08615	10/15/08	10/15/08	EPA 300.0	
Sulfate as SO4	**73**	2.5	"	5	"	"	10/17/08	"	

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

Project: Tesoro Livermore
Project Number: 081013-WWI
Project Manager: Angelique Showman

CLS Work Order #: CRJ0557
COC #: 65316

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
IP-7 (CRJ0557-07) Water	**Sampled: 10/13/08 14:05**	**Received: 10/14/08 09:35**							
Total Alkalinity	**410**	5.0	mg/L	1	CR08596	10/14/08	10/14/08	SM2310B	
Bicarbonate as CaCO3	**410**	5.0	"	"	"	"	"	"	
Carbonate as CaCO3	ND	5.0	"	"	"	"	"	"	
Hydroxide as CaCO3	ND	5.0	"	"	"	"	"	"	
Ferrous Iron	ND	0.10	"	"	CR08595	10/14/08	10/14/08	SM3500-Fe D	
Nitrate as N	**0.80**	0.50	"	"	CR08615	10/15/08	10/15/08	EPA 300.0	
Sulfate as SO4	**31**	0.50	"	"	"	"	"	"	

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

Project: Tesoro Livermore
Project Number: 081013-WWI
Project Manager: Angelique Showman

CLS Work Order #: CRJ0557
COC #: 65316

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 CR08595 - General Preparation										
Blank (CR08595-BLK1)				Prepared & Analyzed: 10/14/08						
Ferrous Iron	ND	0.10	mg/L							
LCS (CR08595-BS1)				Prepared & Analyzed: 10/14/08						
Ferrous Iron	0.268	0.10	mg/L	0.250		107	80-120			
LCS Dup (CR08595-BSD1)				Prepared & Analyzed: 10/14/08						
Ferrous Iron	0.264	0.10	mg/L	0.250		106	80-120	2	25	
Matrix Spike (CR08595-MS1)		**Source: CRJ0557-01**		Prepared & Analyzed: 10/14/08						
Ferrous Iron	0.279	0.10	mg/L	0.250	0.00	112	75-125			
Matrix Spike Dup (CR08595-MSD1)		**Source: CRJ0557-01**		Prepared & Analyzed: 10/14/08						
Ferrous Iron	0.274	0.10	mg/L	0.250	0.00	110	75-125	2	30	
Batch CR08596 - General Preparation										
Blank (CR08596-BLK1)				Prepared & Analyzed: 10/14/08						
Total Alkalinity	ND	5.0	mg/L							
Bicarbonate as CaCO3	ND	5.0	"							
Carbonate as CaCO3	ND	5.0	"							
Hydroxide as CaCO3	ND	5.0	"							
Duplicate (CR08596-DUP1)		**Source: CRJ0455-01**		Prepared & Analyzed: 10/14/08						
Total Alkalinity	102	5.0	mg/L		102			0.6	20	
Bicarbonate as CaCO3	102	5.0	"		102			0.6	20	
Carbonate as CaCO3	ND	5.0	"		ND				20	
Hydroxide as CaCO3	ND	5.0	"		ND				20	

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

Project: Tesoro Livermore
Project Number: 081013-WWI
Project Manager: Angelique Showman

CLS Work Order #: CRJ0557
COC #: 65316

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 CR08615 - General Prep										
Blank (CR08615-BLK1)				Prepared & Analyzed: 10/15/08						
Sulfate as SO4	ND	0.50	mg/L							
Nitrate as N	ND	0.50	"							
LCS (CR08615-BS1)				Prepared & Analyzed: 10/15/08						
Sulfate as SO4	5.10	0.50	mg/L	5.00		102	80-120			
Nitrate as N	0.453	0.50	"	0.451		100	80-120			
LCS Dup (CR08615-BSD1)				Prepared & Analyzed: 10/15/08						
Sulfate as SO4	5.07	0.50	mg/L	5.00		101	80-120	0.6	20	
Nitrate as N	0.450	0.50	"	0.451		100	80-120	0.6	20	
Matrix Spike (CR08615-MS1)		**Source: CRJ0573-12**		Prepared & Analyzed: 10/15/08						
Sulfate as SO4	56.3	0.50	mg/L	5.00	53.9	48	75-125			QM-4X
Nitrate as N	2.40	0.50	"	0.451	1.99	90	80-120			
Matrix Spike Dup (CR08615-MSD1)		**Source: CRJ0573-12**		Prepared & Analyzed: 10/15/08						
Sulfate as SO4	56.3	0.50	mg/L	5.00	53.9	48	75-125	0.007	25	QM-4X
Nitrate as N	2.40	0.50	"	0.451	1.99	91	80-120	0.2	20	

KIFF Analytical	Project: Tesoro Livermore	
2795 Second St. Suite 300	Project Number: 081013-WWI	**CLS Work Order #: CRJ0557**
Davis, CA 95616	Project Manager: Angelique Showman	COC #: 65316

Notes and Definitions

QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
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

Calscience Environmental Laboratories, Inc.

October 21, 2008

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

Subject: **Calscience Work Order No.: 08-10-1310**
Client Reference: Tesoro - Livermore

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 10/15/2008 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 subcontracted analysis, if any, 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,

Amanda Porter

Calscience Environmental
Laboratories, Inc.
Amanda Porter
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 10/15/08
Work Order No: 08-10-1310
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IP-1	**08-10-1310-1-B**	**10/13/08 14:12**	**Aqueous**	**GC 14**	**N/A**	**10/17/08 00:00**	**081017L01**

Parameter	Result	RL	DF	Qual	Units
Methane	5390	100	100		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IP-2	**08-10-1310-2-A**	**10/13/08 12:37**	**Aqueous**	**GC 14**	**N/A**	**10/17/08 00:00**	**081017L01**

Parameter	Result	RL	DF	Qual	Units
Methane	1200	10.0	10		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IP-3	**08-10-1310-3-A**	**10/13/08 13:17**	**Aqueous**	**GC 14**	**N/A**	**10/17/08 00:00**	**081017L01**

Parameter	Result	RL	DF	Qual	Units
Methane	166	1.00	1		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IP-4	**08-10-1310-4-A**	**10/13/08 14:00**	**Aqueous**	**GC 14**	**N/A**	**10/17/08 00:00**	**081017L01**

Parameter	Result	RL	DF	Qual	Units
Methane	274	1.00	1		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IP-5	**08-10-1310-5-A**	**10/13/08 10:37**	**Aqueous**	**GC 14**	**N/A**	**10/17/08 00:00**	**081017L01**

Parameter	Result	RL	DF	Qual	Units
Methane	176	1.00	1		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IP-6	**08-10-1310-6-B**	**10/13/08 13:33**	**Aqueous**	**GC 14**	**N/A**	**10/17/08 00:00**	**081017L01**

Parameter	Result	RL	DF	Qual	Units
Methane	824	10.0	10		ug/L

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Kiff Analytical	Date Received: 10/15/08
2795 2nd Street, Suite 300	Work Order No: 08-10-1310
Davis, CA 95616-6593	Preparation: N/A
	Method: RSK-175M

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IP-7	**08-10-1310-7-A**	**10/13/08 14:05**	**Aqueous**	**GC 14**	**N/A**	**10/17/08 00:00**	**081017L01**

Parameter	Result	RL	DF	Qual	Units
Methane	1210	10.0	10		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-663-336-A**	**N/A**	**Aqueous**	**GC 14**	**N/A**	**10/17/08 00:00**	**081017L01**

Parameter	Result	RL	DF	Qual	Units
Methane	ND	1.00	1		ug/L

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

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 10/15/08
Work Order No: 08-10-1310

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date Collected	Matrix
IP-1	**08-10-1310-1**	**10/13/08**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	230	20	1		mg/L	10/17/08	10/17/08	EPA 410.4
Phosphorus, Total	0.56	0.10	1		mg/L	N/A	10/16/08	SM 4500 P B/E
Carbon Dioxide	42	1.0	1		mg/L	N/A	10/15/08	SM4500-CO2D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
IP-2	**08-10-1310-2**	**10/13/08**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	39	20	1		mg/L	10/17/08	10/17/08	EPA 410.4
Phosphorus, Total	2.5	0.50	5		mg/L	N/A	10/16/08	SM 4500 P B/E
Carbon Dioxide	58	1.0	1		mg/L	N/A	10/15/08	SM4500-CO2D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
IP-3	**08-10-1310-3**	**10/13/08**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	44	20	1		mg/L	10/17/08	10/17/08	EPA 410.4
Phosphorus, Total	3.2	0.50	5		mg/L	N/A	10/16/08	SM 4500 P B/E
Carbon Dioxide	1.6	1.0	1		mg/L	N/A	10/15/08	SM4500-CO2D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
IP-4	**08-10-1310-4**	**10/13/08**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	100	20	1		mg/L	10/17/08	10/17/08	EPA 410.4
Phosphorus, Total	0.84	0.20	2		mg/L	N/A	10/16/08	SM 4500 P B/E
Carbon Dioxide	28	1.0	1		mg/L	N/A	10/15/08	SM4500-CO2D

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

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 10/15/08
Work Order No: 08-10-1310

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date Collected	Matrix
IP-5	**08-10-1310-5**	**10/13/08**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	34	20	1		mg/L	10/17/08	10/17/08	EPA 410.4
Phosphorus, Total	1.6	0.50	5		mg/L	N/A	10/16/08	SM 4500 P B/E
Carbon Dioxide	25	1.0	1		mg/L	N/A	10/15/08	SM4500-CO2D

IP-6	**08-10-1310-6**	**10/13/08**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	ND	5.0	1		mg/L	10/18/08	10/18/08	EPA 410.4
Phosphorus, Total	0.48	0.10	1		mg/L	N/A	10/16/08	SM 4500 P B/E
Carbon Dioxide	25	1.0	1		mg/L	N/A	10/15/08	SM4500-CO2D

IP-7	**08-10-1310-7**	**10/13/08**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	39	20	1		mg/L	10/17/08	10/17/08	EPA 410.4
Phosphorus, Total	0.28	0.10	1		mg/L	N/A	10/16/08	SM 4500 P B/E
Carbon Dioxide	34	1.0	1		mg/L	N/A	10/15/08	SM4500-CO2D

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

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	ND	20	1		mg/L	10/17/08	10/17/08	EPA 410.4
Chemical Oxygen Demand	ND	5.0	1		mg/L	10/18/08	10/18/08	EPA 410.4
Phosphorus, Total	ND	0.10	1		mg/L	N/A	10/16/08	SM 4500 P B/E

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: 08-10-1310

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	SM 4500 P B/E	IP-7	10/16/08	N/A	91	91	70-130	0	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: 08-10-1310

Project: Tesoro - Livermore

Matrix: Aqueous

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Carbon Dioxide	SM4500-CO2D	IP-1	10/15/08	42	40	5	0-25	
Chemical Oxygen Demand	EPA 410.4	08-10-1284-1	10/17/08	210	200	1	0-25	
Chemical Oxygen Demand	EPA 410.4	08-10-1658-1	10/18/08	ND	ND	NA	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 08-10-1310
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-663-336	**Aqueous**	**GC 14**	**N/A**	**10/17/08**	**081017L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Methane	101	105	79-109	4	0-20	

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: 08-10-1310

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	SM 4500 P B/E	099-05-098-1,958	10/16/08	N/A	0.400	0.413	103	80-120	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 08-10-1310

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 (MS) or Matrix Spike Duplicate (MSD) 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.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
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.

KIFF Analytical LLC
2795 Second Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4808

Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1427
714-895-5494

TO 1309 WS

COC No. ~~65316~~

AFS 10/14/2008

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Angelique Showman

EDF Report? NO

Company/Address: Kiff Analytical

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Global ID:

Deliverables to (Email Address): inbox@kiffanalytical.com

Phone No.:	FAX No.:
530-297-4800	530-297-4808
Project Number:	**P.O. No.:**
01LV	65316

Project Name: Tesoro - Livermore

Project Address:

Sample Designation	Sampling Date	Sampling Time	Container / Preservative: 125 ml Amber HCl	250ml Glass H2SO4	500 ml Poly None	Matrix: Water	Analysis Request: Carbon Dioxide	Chemical Oxygen Demand	Hydrocarbons in Water by RSK 175 (1)	Total Phosphorus	TAT: 4-Days	For Lab Use Only
IP-1	10/13/08	14:12	2	2	1	X	X	X	X	X	X	1
IP-2	10/13/08	12:37	2	2	1	X	X	X	X	X	X	2
IP-3	10/13/08	13:17	2	2	1	X	X	X	X	X	X	3
IP-4	10/13/08	14:00	2	2	1	X	X	X	X	X	X	4
IP-5	10/13/08	10:37	2	2	1	X	X	X	X	X	X	5
IP-6	10/13/08	13:33	2	2	1	X	X	X	X	X	X	6
IP-7	10/13/08	14:05	2	2	1	X	X	X	X	X	X	7

Relinquished by:	Date	Time	Received by:
KIFF Analytical	101408	1800	
Relinquished by:	Date	Time	Received by:
Relinquished by: FEDEX B1022599225	Date 10-15-08	Time 0800	Received by Laboratory:

Remarks: Please refer to attached Test Detail.

Bill to: Accounts Payable

Test Detail for Kiff Work Order: 65316

Hydrocarbons in Water by RSK 175 (1)
Methane

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 08-10-1310

Cooler 1 **of** 1

SAMPLE RECEIPT FORM

CLIENT: KFF ANALYTICAL **DATE:** 10-15-08

TEMPERATURE:

Temperature 2.1 °C + 1.8 °C (CF) = 3.9 °C **Blank** ☑ **Sample** ☐

Samples outside temperature criteria but received on ice/chilled on same day of sampling ☐

Received at ambient temperature, placed on ice for transport by Courier ☐

Ambient Temperature (For Air & Filter Only) ☐ Initial: WB

CUSTODY SEALS INTACT:

☐ Sample ☑ Cooler ☐ No (Not Intact) ☐ Not Present Initial: WB

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	☑	☐	☐
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Correct containers and volume for analyses requested	☑	☐	☐
Proper preservation noted on sample label(s)	☑	☐	☐
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

If you marked "NO" for any of the items complete a Sample Receipt Anomaly form.

CONTAINER TYPE:

Soil: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☐VOAh ☐VOAna_2 ☐125AGB ☑125AGBh ☐125AGBpo_4 ☐1AGB ☐1AGBna_2 ☐1AGBs ☐500AGB ☐500AGBs ☐250CGB ☑250CGBs ☐1PB ☑500PB ☐500PBna ☐250PB ☐250PBn ☐125PB ☐125PBznna ☐100PBsterile ☐100PBna_2 ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® ☐_____

Checked/Labeled by: WB

Reviewed by: D.L

Scanned by: WB

Container: C:Clear A:Amber P:Poly/Plastic G:Glass J:Jar B:Bottle

Preservative: h:HCL n:HNO_3 na_2:$Na_2S_2O_3$ na:NaOH po_4:H_3PO_4 s:H_2SO_4 znna:$ZnAc_2$+NaOH

BLAINE
TECH SERVICES, INC.

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

LAB KIFF 65316 | DHS #

CHAIN OF CUSTODY BTS # 081013-WW1

CLIENT: Arctos Environmental, Inc.

SITE: Tesoro - Livermore

1619 1st Street

Livermore, CA

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

CONDUCT ANALYSIS TO DETECT

SAMPLE I.D.	DATE	TIME	MATRIX S= SOIL W=H_2O	CONTAINERS TOTAL	CONTAINERS	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), CO_2	Total Alkalinity (SM2320B)	COD (410.4), Methane	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
DW-1	10/3/08	1355	W	3	40mL HCl VOAs		X	X	X									01
DW-4		1027	W	3			X	X	X									02
DW-3		1110	W	3			X	X	X									03
DW-2		1120	W	3			X	X	X									04
MW-2		1320	W	3			X	X	X									05
IP-1		1412		10	mixed		X	X	X	X	X	X	X	X	SAMPLE RECEIPT Temp °C 0.2 Therm. ID# IR-1			06
IP-2		1237		10			X	X	X	X	X	X	X	X	Initial JSS Date 101308			07
IP-3		1317					X	X	X	X	X	X	X	X	Time 1750 Coolant present: Yes / No			08
IP-4		1400					X	X	X	X	X	X	X	X				09
IP-5		1037					X	X	X	X	X	X	X	X				10

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY
	10/13/08	1412	BRANDON BOSHER / WILLIAM WONG / ELI CHAVARIA

RESULTS NEEDED NO LATER THAN: Standard TAT

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
	10/13/08		SAMPLE CUSTODIAN	10/13/08	
	10/13/08			10/13/08	
			Kiff Analytical	101308	1550

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

LAB KIFF 65316 DHS #

CHAIN OF CUSTODY BTS # 081013-MW1

CLIENT: Arctos Environmental, Inc.

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

CONDUCT ANALYSIS TO DETECT

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	TPH-G + BTEX + MTBE (8260)	(7) Oxygenates (8260)	Lead Scavengers	Ferrous Iron (24 hr. Hold time)	Nitrate, Sulfate, Phosphorous	Major anions (Chloride, Nitrite, Sulfate), CO_2	Total Alkalinity (SM2320B)	COD (410.4) methane	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
IP-6	10/13/08	1333	W	10	mixed		X	X	X	X	X	X	X	X				11
IP-7		1405		10	mixed		X	X	X	X	X	X	X	X				12
MW-1		1452		3	HCl voas		X	X	X									13
MW-3		1505		3	HCl voas		X	X	X									14

SAMPLE RECEIPT
Temp °C 0.2 Therm. ID# IR-1
Initial JS Date 101308
Time 1759 Coolant present: Yes No

SAMPLING COMPLETED	DATE	TIME
	10/13/08	1505

SAMPLING PERFORMED BY: WILLIAM WONG, BRANDON DOSHIER, ELI CHAVARRIA

RESULTS NEEDED NO LATER THAN: Standard TAT

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	10/13/08		[signature]	10/13/08	
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
			Kiff Analytical	101308	1550
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
			[signature]		

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	

KIFF Analytical LLC

Report Number : 66504
Date : 12/19/2008

Mike Purchase
Arctos Environmental
1332 Peralta Avenue
Berkeley, CA 94702

Subject : 2 Water Samples
Project Name : Tesoro - Livermore
Project Number : 01LV

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 : 66504

Date : 12/19/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Sample : **IP-8** Matrix : Water Lab Number : 66504-01

Sample Date :12/16/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**7800**	40	ug/L	EPA 8260B	12/18/2008
Toluene	**20000**	40	ug/L	EPA 8260B	12/18/2008
Ethylbenzene	**3500**	40	ug/L	EPA 8260B	12/18/2008
Total Xylenes	**16000**	40	ug/L	EPA 8260B	12/18/2008
Methyl-t-butyl ether (MTBE)	**< 40**	40	ug/L	EPA 8260B	12/18/2008
Diisopropyl ether (DIPE)	**< 40**	40	ug/L	EPA 8260B	12/18/2008
Ethyl-t-butyl ether (ETBE)	**< 40**	40	ug/L	EPA 8260B	12/18/2008
Tert-amyl methyl ether (TAME)	**< 40**	40	ug/L	EPA 8260B	12/18/2008
Tert-Butanol	**< 200**	200	ug/L	EPA 8260B	12/18/2008
Methanol	**< 4000**	4000	ug/L	EPA 8260B	12/18/2008
Ethanol	**< 400**	400	ug/L	EPA 8260B	12/18/2008
TPH as Gasoline	**120000**	4000	ug/L	EPA 8260B	12/18/2008
1,2-Dichloroethane	**< 40**	40	ug/L	EPA 8260B	12/18/2008
1,2-Dibromoethane	**< 40**	40	ug/L	EPA 8260B	12/18/2008
1,2-Dichloroethane-d4 (Surr)	97.6		% Recovery	EPA 8260B	12/18/2008
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	12/18/2008

KIFF Analytical LLC

Report Number : 66504
Date : 12/19/2008

Project Name : **Tesoro - Livermore**
Project Number : **01LV**

Sample : **IP-9** Matrix : Water Lab Number : 66504-02
Sample Date :12/16/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**7800**	40	ug/L	EPA 8260B	12/18/2008
Toluene	**23000**	40	ug/L	EPA 8260B	12/18/2008
Ethylbenzene	**2800**	40	ug/L	EPA 8260B	12/18/2008
Total Xylenes	**16000**	40	ug/L	EPA 8260B	12/18/2008
Methyl-t-butyl ether (MTBE)	**< 40**	40	ug/L	EPA 8260B	12/18/2008
Diisopropyl ether (DIPE)	**< 40**	40	ug/L	EPA 8260B	12/18/2008
Ethyl-t-butyl ether (ETBE)	**< 40**	40	ug/L	EPA 8260B	12/18/2008
Tert-amyl methyl ether (TAME)	**< 40**	40	ug/L	EPA 8260B	12/18/2008
Tert-Butanol	**< 200**	200	ug/L	EPA 8260B	12/18/2008
Methanol	**< 4000**	4000	ug/L	EPA 8260B	12/18/2008
Ethanol	**< 400**	400	ug/L	EPA 8260B	12/18/2008
TPH as Gasoline	**110000**	4000	ug/L	EPA 8260B	12/18/2008
1,2-Dichloroethane	**< 40**	40	ug/L	EPA 8260B	12/18/2008
1,2-Dibromoethane	**< 40**	40	ug/L	EPA 8260B	12/18/2008
1,2-Dichloroethane-d4 (Surr)	98.9		% Recovery	EPA 8260B	12/18/2008
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	12/18/2008

Report Number : 66504

QC Report : Method Blank Data

Date : 12/19/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	12/17/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	12/17/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	12/17/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	12/17/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	12/17/2008
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	12/17/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	12/17/2008
Methanol	< 50	50	ug/L	EPA 8260B	12/17/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	12/17/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	12/17/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	12/17/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	12/17/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	12/17/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	12/17/2008
1,2-Dichloroethane-d4 (Surr)	95.4		%	EPA 8260B	12/17/2008
Toluene - d8 (Surr)	95.3		%	EPA 8260B	12/17/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Report Number : 66504

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 12/19/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

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
1,2-Dichloroethane	66495-03	<0.50	40.2	40.3	46.2	45.7	ug/L	EPA 8260B	12/17/08	115	113	1.12	70-130	25
Benzene	66495-03	<0.50	39.3	39.3	39.2	38.7	ug/L	EPA 8260B	12/17/08	99.8	98.4	1.33	70-130	25
Methyl-t-butyl ether	66495-03	<0.50	39.5	39.6	36.4	36.5	ug/L	EPA 8260B	12/17/08	92.2	92.2	0.00740	70-130	25
Tert-Butanol	66495-03	<5.0	200	200	206	206	ug/L	EPA 8260B	12/17/08	103	103	0.221	70-130	25
Toluene	66495-03	<0.50	40.0	40.1	40.5	40.0	ug/L	EPA 8260B	12/17/08	101	99.6	1.44	70-130	25

Report Number : 66504

QC Report : Laboratory Control Sample (LCS)

Date : 12/19/2008

Project Name : **Tesoro - Livermore**

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dichloroethane	40.3	ug/L	EPA 8260B	12/17/08	110	70-130
Benzene	39.3	ug/L	EPA 8260B	12/17/08	98.1	70-130
Methyl-t-butyl ether	39.6	ug/L	EPA 8260B	12/17/08	91.7	70-130
Tert-Butanol	200	ug/L	EPA 8260B	12/17/08	102	70-130
Toluene	40.1	ug/L	EPA 8260B	12/17/08	99.5	70-130

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

December 29, 2008

CLS Work Order #: CRL0657
COC #: 66504

Angelique Showman
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 12/17/08 09:16. 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

KIFF Analytical	Project: Tesoro Livermore	
2795 Second St. Suite 300	Project Number: [none]	**CLS Work Order #: CRL0657**
Davis, CA 95616	Project Manager: Angelique Showman	COC #: 66504

CRL0657

KIFF Analytical LLC
2795 Second Street, Suite 300
Davis, CA 95618
Lab: 530 297 4800
Fax: 530.297.4808

CLS
3249 Fitzgerald Road
Rancho Cordova, CA 95742
916-638 7301

COC No. 66504 Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF to): Angelique Showman
Company/Address: Kiff Analytical
Phone No.: 530-297-4800
FAX No.: 530-297-4808
Project Number:
P.O. No.: 66504
Project Name: Tesoro - Livermore
Project Address:

EDF Report? NO

Recommended but not mandatory to complete this section:
Sampling Company Log Code:
Global ID:
Deliverables to (Email Address): inbox@kiffanalytical.com

Sample Designation	Sampling Date	Sampling Time	Container / Preservative: 250ml Poly None	Matrix: Water	Analysis Request: Anions by EPA 300.0 (1)	Analysis Request: Iron, Ferrous	TAT: Standard	For Lab Use Only
IP-8	12/16/08	10:35	2	X	X	X	X	
IP-9	12/16/08	11:57	2	X	X	X	X	

Relinquished by:	Date 12/17/08	Time 0916	Received by:	Remarks: Please refer to attached Test Detail.
Relinquished by:	Date	Time	Received by:	
Relinquished by: 12/17/08 0916	Date	Time	Received by Laboratory:	Bill to: Accounts Payable

CALIFORNIA LABORATORY SERVICES

KIFF Analytical	Project: Tesoro Livermore	
2795 Second St. Suite 300	Project Number: [none]	**CLS Work Order #: CRL0657**
Davis, CA 95616	Project Manager: Angelique Showman	COC #: 66504

CRL0657

Test Detail for Kiff Work Order: 66504

Anions by EPA 300.0 (1)
Chloride
Nitrate as N
Nitrite as N
Sulfate

Page 1 of 1

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

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Angelique Showman

CLS Work Order #: CRL0657
COC #: 66504

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
IP-8 (CRL0657-01) Water Sampled: 12/16/08 10:35 Received: 12/17/08 09:16									
Chloride	**88**	5.0	mg/L	10	CR10442	12/17/08	12/18/08	EPA 300.0	
Ferrous Iron	ND	0.10	"	1	CR10440	12/17/08	12/17/08	SM3500-Fe D	
Nitrate as N	ND	0.50	"	"	CR10442	12/17/08	12/18/08	EPA 300.0	
Nitrite as N	ND	0.10	"	"	"	"	"	"	
Sulfate as SO4	**19**	0.50	"	"	"	"	"	"	
IP-9 (CRL0657-02) Water Sampled: 12/16/08 11:57 Received: 12/17/08 09:16									
Chloride	**130**	5.0	mg/L	10	CR10442	12/17/08	12/18/08	EPA 300.0	
Ferrous Iron	ND	0.10	"	1	CR10440	12/17/08	12/17/08	SM3500-Fe D	
Nitrate as N	ND	0.50	"	"	CR10442	12/17/08	12/18/08	EPA 300.0	
Nitrite as N	ND	0.10	"	"	"	"	"	"	
Sulfate as SO4	**91**	5.0	"	10	"	"	12/18/08	"	

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

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Angelique Showman

CLS Work Order #: CRL0657
COC #: 66504

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 CR10440 - General Preparation										
Blank (CR10440-BLK1)				Prepared & Analyzed: 12/17/08						
Ferrous Iron	ND	0.10	mg/L							
LCS (CR10440-BS1)				Prepared & Analyzed: 12/17/08						
Ferrous Iron	0.261	0.10	mg/L	0.250		105	80-120			
LCS Dup (CR10440-BSD1)				Prepared & Analyzed: 12/17/08						
Ferrous Iron	0.261	0.10	mg/L	0.250		105	80-120	0	25	
Matrix Spike (CR10440-MS1)		**Source: CRL0657-02**		Prepared & Analyzed: 12/17/08						
Ferrous Iron	0.247	0.10	mg/L	0.250	0.00	99	75-125			
Matrix Spike Dup (CR10440-MSD1)		**Source: CRL0657-02**		Prepared & Analyzed: 12/17/08						
Ferrous Iron	0.247	0.10	mg/L	0.250	0.00	99	75-125	0	30	
Batch CR10442 - General Prep										
Blank (CR10442-BLK1)				Prepared & Analyzed: 12/17/08						
Sulfate as SO4	ND	0.50	mg/L							
Chloride	ND	0.50	"							
Nitrate as N	ND	0.50	"							
Nitrite as N	ND	0.10	"							
LCS (CR10442-BS1)				Prepared & Analyzed: 12/17/08						
Chloride	1.94	0.50	mg/L	2.00		97	80-120			
Sulfate as SO4	5.09	0.50	"	5.00		102	80-120			
Nitrate as N	0.462	0.50	"	0.451		102	80-120			
Nitrite as N	0.550	0.10	"	0.610		90	80-120			

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

Project: Tesoro Livermore
Project Number: [none]
Project Manager: Angelique Showman

CLS Work Order #: CRL0657
COC #: 66504

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 CR10442 - General Prep										
Matrix Spike (CR10442-MS1)		**Source: CRL0661-01**		Prepared: 12/17/08		Analyzed: 12/18/08				
Chloride	ND	0.50	mg/L	2.00	ND		75-125			QM-IC
Sulfate as SO4	ND	0.50	"	5.00	ND		75-125			QM-IC
Nitrite as N	0.559	0.10	"	0.610	0.0550	83	75-125			
Nitrate as N	ND	0.50	"	0.451	88.7	NR	80-120			QM-IC
Matrix Spike Dup (CR10442-MSD1)		**Source: CRL0661-01**		Prepared: 12/17/08		Analyzed: 12/18/08				
Sulfate as SO4	ND	0.50	mg/L	5.00	ND		75-125		25	QM-IC
Chloride	ND	0.50	"	2.00	ND		75-125		25	QM-IC
Nitrate as N	ND	0.50	"	0.451	88.7	NR	80-120		20	QM-IC
Nitrite as N	0.557	0.10	"	0.610	0.0550	82	75-125	0.4	25	

KIFF Analytical	Project: Tesoro Livermore	
2795 Second St. Suite 300	Project Number: [none]	**CLS Work Order #: CRL0657**
Davis, CA 95616	Project Manager: Angelique Showman	COC #: 66504

Notes and Definitions

QM-IC	The concentration is too great for the software to quantify the sample correctly; therefore a result of zero was reported. The batch was accepted based on acceptable LCS/LCSD recovery.
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

Calscience Environmental Laboratories, Inc.

December 29, 2008

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

Subject: **Calscience Work Order No.: 08-12-1849**
Client Reference: Tesoro - Livermore

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 12/18/2008 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 subcontracted analysis, if any, 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,

Amanda Porter

Calscience Environmental
Laboratories, Inc.
Amanda Porter
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 12/18/08
Work Order No: 08-12-1849
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IP-8	**08-12-1849-1-A**	**12/16/08 10:35**	**Aqueous**	**GC 33**	**N/A**	**12/19/08 00:00**	**081219L01**

Parameter	Result	RL	DF	Qual	Units
Methane	1130	8.00	8		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IP-9	**08-12-1849-2-A**	**12/16/08 11:57**	**Aqueous**	**GC 33**	**N/A**	**12/19/08 00:00**	**081219L01**

Parameter	Result	RL	DF	Qual	Units
Methane	304	8.00	8		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-663-417**	**N/A**	**Aqueous**	**GC 33**	**N/A**	**12/19/08 00:00**	**081219L01**

Parameter	Result	RL	DF	Qual	Units
Methane	ND	1.00	1		ug/L

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

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 12/18/08
Work Order No: 08-12-1849

Project: Tesoro - Livermore

Client Sample Number	Lab Sample Number	Date Collected	Matrix
IP-8	**08-12-1849-1**	**12/16/08**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	440	5.0	1		mg/L	12/23/08	12/23/08	EPA 410.4
Alkalinity, Total (as CaCO3)	474	5.0	1		mg/L	N/A	12/18/08	SM 2320B
Phosphorus, Total	1.3	0.50	5		mg/L	12/29/08	12/29/08	SM 4500 P B/E
Sulfide, Total	ND	0.050	1		mg/L	12/23/08	12/23/08	SM 4500 S2 - D
Carbon Dioxide	30	1.0	1		mg/L	N/A	12/18/08	SM4500-CO2D

IP-9	**08-12-1849-2**	**12/16/08**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	340	5.0	1		mg/L	12/23/08	12/23/08	EPA 410.4
Alkalinity, Total (as CaCO3)	476	5.0	1		mg/L	N/A	12/18/08	SM 2320B
Phosphorus, Total	0.77	0.10	1		mg/L	12/29/08	12/29/08	SM 4500 P B/E
Sulfide, Total	ND	0.050	1		mg/L	12/23/08	12/23/08	SM 4500 S2 - D
Carbon Dioxide	23	1.0	1		mg/L	N/A	12/18/08	SM4500-CO2D

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

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	ND	5.0	1		mg/L	12/23/08	12/23/08	EPA 410.4
Alkalinity, Total (as CaCO3)	ND	1.0	1		mg/L	N/A	12/18/08	SM 2320B
Phosphorus, Total	ND	0.10	1		mg/L	12/29/08	12/29/08	SM 4500 P B/E
Sulfide, Total	ND	0.050	1		mg/L	12/23/08	12/23/08	SM 4500 S2 - D

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: 08-12-1849

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	SM 4500 P B/E	IP-8	12/29/08	12/29/08	101	101	70-130	0	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: 08-12-1849

Project: Tesoro - Livermore

Matrix: Aqueous

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Carbon Dioxide	SM4500-CO2D	IP-8	12/18/08	30	29	2	0-25	
Alkalinity, Total (as CaCO3)	SM 2320B	IP-8	12/18/08	474	474	0	0-25	
Sulfide, Total	SM 4500 S2 - D	08-12-1913-1	12/23/08	ND	ND	NA	0-25	
Chemical Oxygen Demand	EPA 410.4	IP-9	12/23/08	340	340	1	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 08-12-1849
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-663-417	**Aqueous**	**GC 33**	**N/A**	**12/19/08**	**081219L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Methane	100	100	79-109	0	0-20	

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: 08-12-1849

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	SM 4500 P B/E	099-05-098-1,982	12/29/08	12/29/08	0.400	0.396	99	80-120	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 08-12-1849

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 (MS) or Matrix Spike Duplicate (MSD) 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.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
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.

KIFF Analytical LLC

2795 Second Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4808

Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1427
714-895-5494

T849

COC No. **66504** Page 1 of 1

Project Contact (Hardcopy or PDF to): Angelique Showman

EDF Report? NO

Chain-of-Custody Record and Analysis Request

Company/Address: Kiff Analytical

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Global ID:

Deliverables to (Email Address): inbox@kiffanalytical.com

Phone No.: 530-297-4800

FAX No.: 530-297-4808

Project Number:

P.O. No.: 66504

Project Name: Tesoro - Livermore

Project Address:

Sample Designation	Sampling Date	Sampling Time	125 ml Amber HCl	250ml Glass H2SO4	250ml Poly None	125ml Poly ZnAc+Na	Matrix: Water	Alkalinity SM 2320 (1)	Carbon Dioxide	Chemical Oxygen Demand	Hydrocarbons in Water by RSK 175 (1)	Sulfide	Total Phosphorus	TAT: 4-Days	For Lab Use Only
IP-8	12/16/08	10:35	2	1	2	1	X	X	X	X	X	X	X	X	1
IP-9	12/16/08	11:57	2	1	2	1	X	X	X	X	X	X	X	X	2

Relinquished by:	Date	Time	Received by:
[signature] Kiff Analytical	121708	1900	
ONTRAC B10232035343	12/18/08	1230	Received by Laboratory: [signature] CEL

Remarks: Please refer to attached Test Detail.

Bill to: Accounts Payable

1849

Test Detail for Kiff Work Order: 66504

Alkalinity SM 2320 (1)
Alkalinity, Total (as CaCO3)

Hydrocarbons in Water by RSK 175 (1)
Methane

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 08-12-1849

SAMPLE RECEIPT FORM

Cooler 1 **of** 1

CLIENT: KIFF ANALYTICAL **DATE:** 12 / 18 / 08

TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 4.3 °C - 0.2 °C (CF) = 4.1 °C ☑ **Blank** ☐ **Sample**

☐ Sample(s) outside temperature criteria (PM/APM contacted by:_____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** WS

CUSTODY SEALS INTACT:

☑ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☐ N/A **Initial:** WS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** ---

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Correct containers and volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☑	☐	☐
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☐VOAh ☐VOAna_2 ☐125AGB ☑125AGBh ☐125AGBpo_4 ☐1AGB ☐1AGBna_2 ☐1AGBs ☐500AGB ☐500AGBs ☐250CGB ☑250CGBs ☐1PB ☐500PB ☐500PBna ☑250PB ☐250PBn ☐125PB ☑125PBznna ☐100PBsterile ☐100PBna_2 ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® ☐_____

Checked/Labeled by: BF

Container: C:Clear A:Amber P:Poly/Plastic G:Glass J:Jar B:Bottle

Reviewed by: WS-C

Preservative: h:HCL n:HNO_3 na_2:$Na_2S_2O_3$ na:NaOH po_4:H_3PO_4 s:H_2SO_4 znna:$ZnAc_2$+NaOH

Scanned by: BF

66504

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 | DHS #

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

CHAIN OF CUSTODY
BTS #
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	CONTAINERS VOA/HCL	C = COMPOSITE ALL CONTAINERS	TPH-G + BTEX + MTBE (8260)	(7) Oxygenates & Lead Scavengers (8260)	Total Sulfide (376.2)	Ferrous Iron (24 hr. Hold time)	Nitrate, Sulfate, Chloride, Nitrite	Phosphorous (365.3) & COD (410.4)	Total Alkalinity (SM2320B)	Carbon Dioxide (SM4500-CO2D) & Methane	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
~~MW-11~~	~~12/11/08~~ 12/12		W	12	3		X	X	X	X	X	X	X	X				
IP-8	↓	1035	W	12	3		X	X	X	X	X	X	X	X				01
IP-9	↓	1157	W	12	3		X	X	X	X	X	X	X	X				02

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY	RESULTS NEEDED NO LATER THAN
	12/10	1157	J. PARKER	Standard TAT

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
	12/14/08	1350			
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
			K. Adamski	12/16/08	1402

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

SAMPLE RECEIPT
Temp °C 2.6 Therm. ID# IR-1
Initial AVR Date 12/16/08
Time 1647 Coolant present: (Yes) / No

ATTACHMENT F

BORING AND WELL CONSTRUCTION LOGS

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

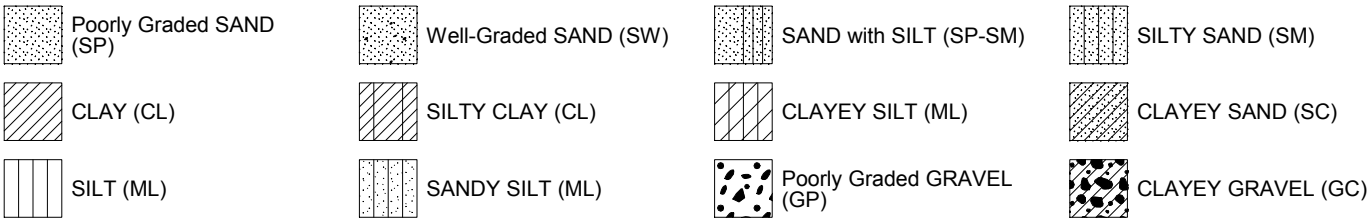
Key to Log of Boring / Well

Elevation, feet	Depth, feet	SAMPLES: Type	SAMPLES: Number	SAMPLES: Blows / 6 in.	Graphic Log	MATERIAL DESCRIPTION	Well Completion Diagram	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
1	2	3	4	5	6	7	8	9	10	11	12

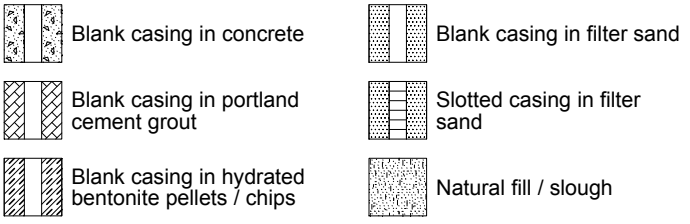
COLUMN DESCRIPTIONS

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 soil sample collected at depth interval shown; sampler symbols are explained below.
4. **Sample Number:** Sample identification number.
5. **Blows / 6 in.:** Number of blows required to advance driven sampler each 6-inch drive interval, or distance noted, using a 140-lb hammer with a 30-inch drop. "-" indicates data not recorded on field log.
6. **Graphic Log:** Graphic depiction of subsurface material encountered; typical symbols are explained below.
7. **Material Description:** Description of material encountered; may include density/consistency, moisture, and color.
8. **Well Completion Diagram:** Well schematic; materials are listed in header block; graphics are explained below.
9. **Headspace PID:** Photoionization device (PID) field sample headspace reading in parts per million (ppm).
10. **Background PID:** Photoionization device (PID) background reading in parts per million (ppm).
11. **Drilling Progress:** Time (in 24-hour clock) at sampling and other events during downhole advance.
12. **Remarks:** Comments and observations regarding drilling or sampling made by driller or field personnel.

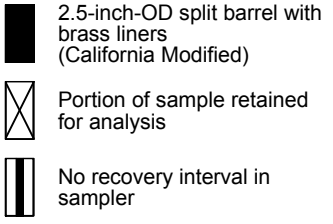
TYPICAL SOIL GRAPHIC SYMBOLS



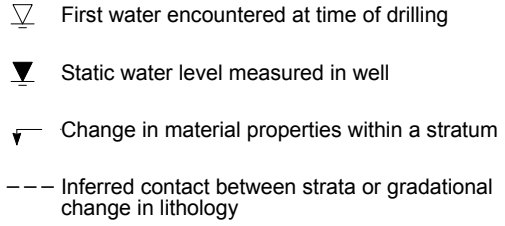
TYPICAL WELL GRAPHIC SYMBOLS



TYPICAL SAMPLER GRAPHIC SYMBOLS



OTHER GRAPHIC SYMBOLS



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, Livermore, CA
Project Number: 01LV

Log of Boring / Well IP-8

Sheet 1 of 2

Date(s) Drilled	**10/2/08 (well installed 11/10/08)**			Logged By	**C. Rentz / M. Purchase**	Checked By	**M. Purchase**
Drilling Method	**Hollow-Stem Auger**			Drill Bit Size/Type	**5-1/2-inch-OD auger (sample) / 10-inch-OD auger (ream for well)**	Total Depth of Borehole	**65.3 feet**
Drill Rig Type	**SIMCO 2400 LAR**			Drilling Contractor	**Gregg Drilling & Testing**	Surface Elevation	**Not available**
Groundwater Level (feet bgs)	First **--**	Completion **--**	Development **--**	Sampling Method	**California Modified split spoon**	Top of Casing Elevation	**Not available**
Diameter of Hole (inches)	**10**	Diameter of Well (inches)	**1 and 2**	Type of Well Casing	**1-in. and 2-in.-dia. Sch. 40 PVC**	Screen Perforation	**0.020-in. slotted PVC (60-65 feet)**
Type of Sand Pack	**Monterey #2/12 (59.3-65.3 feet)**			Type and Depth of Seal(s)	**Bentonite pellets 56-59.3 ft, portland cement grout 2-56 ft, concrete 0-2 ft**		
Comments	**Well installed by M. Nelson on 11/10/08 using Spider-06 ATV Sonic rig operated by Boart Longyear. EMCO-Wheaton 12-inch-diameter flush-mount vault installed with concrete at surface.**						

Elevation, feet / Depth, feet	SAMPLES Type / Number	SAMPLES Blows / 6 in.	Graphic Log	MATERIAL DESCRIPTION	Well Completion Diagram	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
0	[no samples retained for lab testing]			Concrete 5 inches thick					Air knife first 5 ft of borehole.
5				Brown, well-graded SAND with GRAVEL (SW), fine- to coarse-grained sand, no odor		0.4	0.2	0752	
10				Brown, well-graded SAND with SILT and GRAVEL (SW-SM), fine- to coarse-grained sand, no odor		0.3	0.2	0758	
15						1.1	0.2		PID in operator breathing zone (OBZ)=0.3 ppm
20				Brownish gray, CLAYEY SILT with SAND (ML), odor		879	0.2		
25				Moist, gray, well-graded SAND with GRAVEL (SW), fine- to coarse-grained sand, subrounded gravel, odor		3,470	0.2	0805	
30									

ORION_1W; TESLVMOR.GPJ-IP-08; 1/7/09

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

Log of Boring / Well IP-8

Elevation, feet / Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows / 6 in.	Graphic Log	MATERIAL DESCRIPTION	Well Completion Diagram	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
30					Moist, reddish brown, CLAYEY SILT (ML), odor		2,637	0.2		
35					Moist, brown, well-graded SAND with SILT and GRAVEL (SW-SM), fine- to coarse-grained sand, fine to coarse gravel, odor		624	0.2	0815	
40					Becomes brownish gray		634	0.2	0830	
45					Moist, mottled reddish brown, poorly graded SAND with CLAY (SP-SC), coarse-grained sand, odor		726	0.2		OBZ=6.4 ppm
50					Moist, brown, well-graded SAND with GRAVEL (SW), fine-to coarse-grained sand, strong odor		518	0.2	0850	
55					Moist, gray mottled with reddish brown, poorly graded SAND with CLAY (SP-SC), coarse-grained sand, odor		269	0.2		
60									0902	No sample recovery. OBZ=1.4 ppm
65					Moist, brown, SILTY SAND with GRAVEL (SM), fine- to coarse-grained sand, odor		3,127	0.3		
70					**Boring sampled to 65.0 feet; reamed for well to 65.3 feet.**					

ORION_1W; TESLVMOR.GPJ-IP-08; 1/7/09

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

Log of Boring / Well IP-9

Sheet 1 of 2

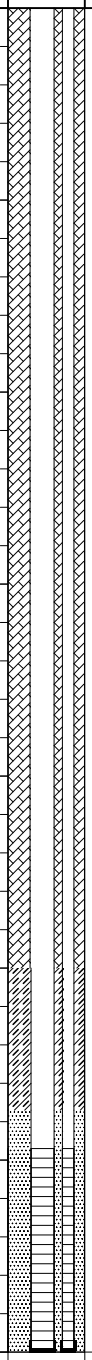
Date(s) Drilled	**11/11/08**			Logged By	**M. Nelson**	Checked By	**M. Purchase**
Drilling Method	**Sonic**			Drill Bit Size/Type	**8-inch-OD casing advancer**	Total Depth of Borehole	**65.0 feet**
Drill Rig Type	**Spider-06 ATV Sonic LAR Rig**			Drilling Contractor	**Boart Longyear**	Surface Elevation	**Not available**
Groundwater Level (feet bgs)	First: **--**	Completion: **--**	Development: **--**	Sampling Method	**No sampling performed**	Top of Casing Elevation	**Not available**
Diameter of Hole (inches)	**8**	Diameter of Well (inches)	**1 and 2**	Type of Well Casing	**1-in. and 2-in.-dia. Sch. 40 PVC**	Screen Perforation	**0.020-in. slotted PVC (59.7-64.7 feet)**
Type of Sand Pack	**Monterey #2/12 (58.7-65 feet)**			Type and Depth of Seal(s)	**Bentonite pellets 55-58.7 ft, portland cement grout 2-55 ft, concrete 0-2 ft**		
Comments	**Well installed by M. Nelson. EMCO-Wheaton 12-inch-diameter flush-mount vault installed with concrete at surface.**						

Elevation, feet / Depth, feet	SAMPLES: Type / Number	SAMPLES: Blows / 6 in.	Graphic Log	MATERIAL DESCRIPTION	Well Completion Diagram	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
0				Concrete 5 inches thick **IP-9 was installed near IP-8. The borehole for well IP-9 was advanced to 65 feet without collecting samples or observing cuttings. Refer to Log of Boring/Well IP-8 for lithology at this location.**					Air knife first 5 ft of borehole.
5									
10									
15									
20									
25									
30									

ORION_1W; TESLVMOR.GPJ-IP-09; 1/7/09

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

Log of Boring / Well IP-9

Elevation, feet / Depth, feet	SAMPLES Type / Number	SAMPLES Blows / 6 in.	Graphic Log	MATERIAL DESCRIPTION	Well Completion Diagram	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
30				**IP-9 was installed near IP-8. The borehole for well IP-9 was advanced to 65 feet without collecting samples or observing cuttings. Refer to Log of Boring/Well IP-8 for lithology at this location.**					
35									
40									
45									
50									
55									
60									
65				Bottom of boring at 65.0 feet					
70									

ORION_1W; TESLVMOR.GPJ-IP-09; 1/7/09

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

Log of Boring / Well MW-11

Sheet 1 of 2

Date(s) Drilled	**11/10/08 - 11/11/08**	Logged By	**M. Nelson**	Checked By	**M. Purchase**
Drilling Method	**Sonic**	Drill Bit Size/Type	**8-inch-OD casing advancer**	Total Depth of Borehole	**43.3 feet**
Drill Rig Type	**Spider-06 ATV Sonic LAR Rig**	Drilling Contractor	**Boart Longyear**	Surface Elevation	**Not available**
Groundwater Level (feet bgs)	First **--** / Completion **--** / Development **--**	Sampling Method	**No sampling performed**	Top of Casing Elevation	**Not available**
Diameter of Hole (inches)	**8** / Diameter of Well (inches) **4**	Type of Well Casing	**4-inch-dia. Schedule 40 PVC**	Screen Perforation	**0.020-inch slot (28-43 ft)**
Type of Sand Pack	**Monterey #2/12 (25.5-43.3 feet)**	Type and Depth of Seal(s)	**Bentonite pellets 21.3-25.5 ft, portland cement 2-21.3 ft, concrete 0-2 ft**		
Comments	**Well installed by M. Nelson. EMCO-Wheaton 12-inch-diameter flush-mount vault installed with concrete at surface.**				

Elevation, feet / Depth, feet	SAMPLES: Type / Number	SAMPLES: Blows / 6 in.	Graphic Log	MATERIAL DESCRIPTION	Well Completion Diagram	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
0				Concrete 5 inches thick **MW-11 was installed near IP-8. The borehole for well MW-11 was advanced to 43.3 feet without collecting samples or observing cuttings. Refer to Log of Boring/Well IP-8 for lithology at this location.**					Air knife first 5 ft of borehole.
5									
10									
15									
20									
25									
30									

ORION_1W; TESLVMOR.GPJ-MW-11; 1/7/09

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

Log of Boring / Well MW-11

Elevation, feet / Depth, feet	SAMPLES Type / Number	SAMPLES Blows / 6 in.	Graphic Log	MATERIAL DESCRIPTION	Well Completion Diagram	Headspace PID, ppm	Background PID, ppm	Drilling Progress, 24-hour clock	REMARKS
30				**MW-11 was installed near IP-8. The borehole for well MW-11 was advanced to 43.3 feet without collecting samples or observing cuttings. Refer to Log of Boring/Well IP-8 for lithology at this location.**					
35									
40									
				Bottom of boring at 43.3 feet					
45									
50									
55									
60									
65									
70									

ORION_1W; TESLVMOR.GPJ-MW-11; 1/7/09

ATTACHMENT G

DRILLING AND WELL INSTALLATION QA/QC PROCEDURES

ATTACHMENT G
DRILLING AND WELL INSTALLATION QA/QC PROCEDURES

G.1 Drilling and Soil Sampling Procedures

Before initiating drilling activities, Arctos marked the well locations and contacted underground service alert (USA) to clear the area of subsurface lines and utilities. Arctos also obtained boring and well permits from Zone 7 Water Agency.

The soil borings for the installation of oxygen injection well IP-8 was drilled with an 8-inch-diameter hollow-stem continuous-flight auger to create a pilot hole, and then over drilled with a 10-inch-diameter hollow-stem continuous-flight auger. Soil borings for the installation of oxygen injection well IP-9 and the shallow monitoring/soil vapor extractions well MW-11 were drilled with an 8-inch-diameter advancing casing. Wells IP-9 and MW-11 were blind drilled. Soil samples, for oxygen injection well IP-8 only, were collected with a split-spoon sampler containing three brass tubes, each 2 inches in diameter and 6 inches in length. The sampler was driven to the sampling depth by dropping a 140-pound hammer approximately 30 inches. Samples were collected at 5-foot intervals beginning at ground surface.

Immediately after the sampler was retrieved from the auger, it was placed on a portable field stand near the boring and the brass tubes removed. A portion of the soil from one of the tubes was extruded and placed in a sealable plastic bag, which was then closed and allowed to equilibrate for approximately 10 minutes. The organic vapor levels in the headspace were measured using a field photoionization detector (PID). The same sample was visually examined and the results of the visual observation and headspace reading were recorded on the boring log (Attachment F). 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.

G.2 Well Installation

Oxygen Injection Wells

Two injection wells were installed on approximately 15-foot centers on the western property boarder extending southeast from well IP-1 (Figure 2). The injection wells were designed to target saturated sands and sandy silts between approximately 45 to 65 feet below grade.

The two injection wells were constructed as dual-casing injection/monitoring wells using 1-inch-diameter Schedule 40 PVC casing for the injection well and 2-inch-diameter Schedule 40 PVC casing for the monitoring well. The wells were screened from approximately 60 to 65 feet below grade using 0.020-inch slotted screen.

A Monterey #2/12 sand pack filled the annular space around the well to approximately 1 foot above the screened interval. A 3- to 4-foot thick bentonite seal was placed on top of the sand pack. The remaining annular space was filled with Portland cement slurry. Each injection well was completed at the surface with a 12-inch-diameter traffic-rated vault set in concrete. Well construction diagrams are shown in Attachment F.

Shallow Monitoring/Soil Vapor Extraction Well

One shallow monitoring/soil vapor extraction well was installed to assist in remediation of the hydrocarbon-impacted saturated soils exposed during periods of low groundwater levels southwest of IP-1. The shallow monitoring well will also provide additional source area groundwater data during periods of high groundwater levels (Figure 2). The shallow monitoring well was constructed using 4-inch-diameter, flush-threaded, Schedule 40 PVC casing. As in the previous well constructions, a 0.020-inch slot size and #2/12 Monterey sand filter pack was used for the new well. The annular space around the well was filled with filter pack to about 1 foot above the top of the screen.

An approximately 3- to 4-foot-thick layer of bentonite was placed above the filter pack to provide an annular seal. After placement, the seal was hydrated with potable water. The remainder of the annulus to roughly 2 feet below the ground surface was filled with Portland cement slurry. A locking cap and traffic-rated cover was installed at the surface. The screen interval for the shallow monitoring well is from 28 to 43 feet below grade. Well construction diagrams are shown in Attachment F.

G.3 Well Surveying

After completion of the remediation system installation, a licensed surveyor will survey the elevation and location of the new wells following the requirements of State Assembly Bill 2886. The locations will be measured to the nearest 1/10 foot and the elevations to the nearest 1/100 foot relative to mean sea level.

G.4 Field QA/QC Procedures

Procedures for decontaminating field equipment, managing wastes generated, and documenting the field program are described below.

G.4.1 Equipment Decontamination Procedures

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

- Rinse with water using a brush to remove soil and mud
- Wash with non-phosphate detergent and water using a brush

- Rinse with deionized water
- Rinse again with deionized water
- Air dry.

Brass tubes and end caps were new or cleaned using the decontamination procedures described above. Drill augers were steam-cleaned before each boring is drilled.

G.4.2 Management of Drill Cuttings and Wastewater

Drill cuttings were placed in 55-gallon drums that meet U.S. Department of Transportation specifications and stored on site. Each drum was labeled with the date and drum contents. The soil was transported off site by Belshire Environmental Services, Inc., (Belshire), of Lake Forest, California, for recycling as a non-hazardous waste at the TPST Soil Recyclers of California facility in Adelanto, California.

Wastewater generated during well development and groundwater sampling was stored on site in DOT-approved 55-gallon drums. Belshire transported the wastewater off site for recycling as a non-hazardous waste at the DeMenno Kerdoon facility in Los Angeles, California. Manifests for the soil disposal and wastewater recycling are included in Attachment I.

G.4.3 Documentation Procedures

Arctos personnel followed documentation procedures developed for site investigation work. The procedures serve to provide a record of the activities performed in the field.

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.

ATTACHMENT H

WELL DEVELOPMENT LOGS

WELL DEVELOPMENT LOG

Project Name: TESORO. LIVERMORE
Project Number: 01LV
Location: MIDDLE OF WESTERN DRIVE @ SITE

Date: 11/13/08
Well Number: EP-8
Recorded by: MP

WELL DEVELOPMENT:

Development Method: BAIL TO REMOVE SOLIDS SETTLED AT BOTTOM
SURGE ~~BE~~ WELL SCREEN
PUMP TO REMOVE FINES

Depth to Water: 50.60
Initial Total Depth: 64.24
Final Total Depth:
Water Column:

Decon. Method:

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

Casing volume = 0.16 gal/ft. x 13.7 ft. = 2.2 gallons

TIME	DTW (feet)	PURGED (gal.)	COND. ~~(µS/cm)~~ mS/cm	TEMP ~~°F~~ °C	pH	TURBIDITY (NTUs)	NOTES
1125	50.60	0	-	-	-	-	START BAILING TO REMOVE SOLIDS FROM BOTTOM
1139	54.65	2	-	-	-	-	START SURGING
1155	-	-	-	-	-	-	RETURN TO BAILING
1215	52.80	5	-	-	-	-	STOP BAILING FOR LUNCH BREAK
1233	51.49	-	-	-	-	-	START PUMPING
1237	-	6	0.123	21.48	6.90	>999	BROWN, SILTY
1242	54.26	7	0.120	21.49	6.98	>999	" "
1248	-	8	0.114	21.55	6.97	>999	" "
1254	55.23	9	0.107	21.75	6.90	>999	" "
1305	55.74	11	0.102	21.84	6.84	>999	CLOUDY
1322	56.30	14	0.098	21.74	6.78	>999	"
1340	56.63	17	0.097	21.80	6.82	407	SLIGHTLY CLOUDY
1353	56.81	19	0.095	21.90	6.78	333	CLEAR ; STOP PUMP

Total Purged Volume (gallons): 19

Number of Casing Volumes: 8.6

RECOVERY DATA:

TIME	DTW (feet)	NOTES

OBSERVATION/NOTES/CALIBRATION RECORD:

VERY STRONG ODOR

ORION

WELL DEVELOPMENT LOG

Project Name: TESORO - LIVERMORE
Project Number: 01LV
Location: NW CORNER OF SITE

Date: ~~EP-9~~ 11/13/08
Well Number: IP-9
Recorded by: MP

WELL DEVELOPMENT:

Development Method: RAIL TO REMOVE FINES & BOTTOM
SURGE WELL SCREEN
PUMP TO REMOVE FINES

Depth to Water: 51.03
Initial Total Depth: ~~64.07~~ 64.7
Final Total Depth:
Water Column:

Decon. Method:

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

Casing volume = 0.16 gal/ft. x 13.7 ft. = 2.2 gallons

TIME	DTW (feet)	PURGED (gal.)	COND. ~~(µS/cm)~~ S/m	TEMP ~~(°F)~~ °C	pH	TURBIDITY (NTUs)	NOTES
0940	51.03	0	—	—	—	—	START BAILING SOLIDS FROM BOTTOM
0950	-	2	-	-	-	-	START SURGING ; SURGED FOR 20 min
1040	-	7	-	-	-	-	STARTED PURGING ; REMOVED 5 gal WELL DRY
1200	54.38	-	-	-	-	-	RESTART PUMP
1205	58.44	8	0.146	22.06	6.35	>999	CLOUDY
1210	-	9	0.125	21.58	6.73	352	SLIGHTLY CLOUDY
1215	>61.5 *	10	0.137	21.33	6.81	>999	" "
1224	-	11	0.133	21.65	6.78	>999	CLOUDY , DRY @ 11.5 ~~FEET~~ GALLONS

Total Purged Volume (gallons): 11.5

Number of Casing Volumes: 5+

RECOVERY DATA:

TIME	DTW (feet)	NOTES
1048	61.81	
1106	60.17	RECHARGING @ 0.015 gpm
1143	55.60	" @ 0.020 gpm

OBSERVATION/NOTES/CALIBRATION RECORD:

STRONG ODOR
* WATER LEVEL BELOW TOP OF PUMP.

ORION

ATTACHMENT I

WASTE MANIFESTS

Manifest

TPST Soil Recyclers of CA
Non-Hazardous Soils

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPST:	Load #
11/3/08		417	A07	31254	005

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TESORO ENVIRONMENTAL RESOURCES COMPANY 3450 S. 334TH, SUITE 201 AUBURN, WA 98001	Person to Contact:	
	FAX#:	Customer Account Number with TPST:
Consultant's Name and Billing Address:	**Consultant's Phone #:**	
	Person to Contact:	
	FAX#:	Customer Account Number with TPST:
Generation Site (Transport from): *(name & address)* TESORO 87078 (FORMER) 1619 FIRST ST. LIVERMORE, CA 94550	Site Phone #:	BTEX Levels
	Person to Contact:	TPH Levels
	FAX#:	AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF CALIFORNIA 12328 HIBISCUS AVENUE ADELANTO, CA 92301	Facility Phone #: (800) 862-8001	Facility Permit Numbers
	Person to Contact: DELLENA JEFFREY	
	FAX#: (760) 246-8004	
Transporter Name and Mailing Address: BELSHIRE 25971 TOWNE CENTRE DRIVE FOOTHILL RANCH, CA 92610 BESI: 160548	Transporter's Phone #: (949) 460-5200	Transporter's US EPA ID No.: CAR000133913
	Person to Contact: LARRY MOOTHART	Transporter's DOT No.: 450847
	FAX#: (949) 460-5210	Customer Account Number with TPST:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐	6 dms		5740	2240	3500
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					1.75

List any exception to items listed above: Scale Ticket# 12455

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year
Larry Moothart of BESI on behalf of generator		10	29	08

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
JUAN RAMON JARA TKO		11	3	08

Recycling Facility

Discrepancies:
1619FIRS
438218

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
D. JEFFREY/J. PROVANSAL	11-3-8

Please print or type.

TRANSPORTER COPY

NO. 674774 21

NON-HAZARDOUS WASTE DATA FORM

TO BE COMPLETED BY GENERATOR

NAME: TESORO ENVIRONMENTAL RESOURCES COMPANY
ADDRESS: 3450 S. 334TH, SUITE 201 AUBURN, WA 98001
CITY, STATE, ZIP:

GENERATING SITE:
TESORO 67076 (FORMER)
1819 FIRST ST.
LIVERMORE, CA 94550

EPA I.D. NO.
PROFILE NO.
PHONE NO. ( )

CONTAINERS: No. 1 VOLUME 55 GALLONS WEIGHT

TYPE: [X] TANK TRUCK [ ] DUMP TRUCK [ ] DRUMS [ ] CARTONS [ ] OTHER

WASTE DESCRIPTION: Non-hazardous mud — GENERATING PROCESS: drilling / steam water

COMPONENTS OF WASTE	PPM	%	COMPONENTS OF WASTE	PPM	%
1.			5.		
2.			6.		
3.			7.		
4.			8.		

BESI:160548

PROPERTIES: pH ____ [ ] SOLID [ ] LIQUID [ ] SLUDGE [ ] SLURRY [ ] OTHER

HANDLING INSTRUCTIONS: 24-HOUR EMERGENCY PHONE: 949-699-3706

THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS.

Larry Moothart of BESI on behalf of generator — 10/29/08
TYPED OR PRINTED FULL NAME & SIGNATURE — DATE

TRANSPORTER

NAME: BELSHIRE
ADDRESS: 25971 TOWNE CENTRE DRIVE
CITY, STATE, ZIP: FOOTHILL RANCH, CA 92610
PHONE NO.: (949) 460-5200
TRUCK, UNIT, I.D. NO.: 23436

MIETO & SON
1281 BREA CYN RD
BREA, CA

EPA I.D. NO.
SERVICE ORDER NO.
PICK UP DATE: 11/03/08 — 10/29/08

CHRIS MARTINEZ — 11/03/08
TYPED OR PRINTED FULL NAME & SIGNATURE — DATE

TSD FACILITY

NAME: DEMENNO KERDOON
ADDRESS: 2000 N. ALAMEDA ST.
CITY, STATE, ZIP: COMPTON, CA 90222
PHONE NO.: 310-637-7100

EPA I.D. NO.
DISPOSAL METHOD
[ ] LANDFILL [ ] OTHER

SCOTT P. STOLL — 11-3-08
TYPED OR PRINTED FULL NAME & SIGNATURE — DATE

GEN	OLD/NEW	L A	TONS	
TRANS		S B		
C/Q		RT/CD	HWDF: NONE	DISCREPANCY

NO. 674775

NON-HAZARDOUS WASTE DATA FORM

22

TO BE COMPLETED BY GENERATOR

NAME: TESORO ENVIRONMENTAL RESOURCES COMPANY
ADDRESS: 3460 S. 334TH, SUITE 201 AUBURN, WA 98001
CITY, STATE, ZIP:

GENERATING SITE: TESORO 87078 (FORMER)
1619 FIRST ST.
LIVERMORE, CA 94550

EPA I.D. NO.
PROFILE NO.
PHONE NO. ( )

CONTAINERS: No. 3 VOLUME 165 Gallons WEIGHT

TYPE: [X] TANK TRUCK [ ] DUMP TRUCK [ ] DRUMS [ ] CARTONS [ ] OTHER

WASTE DESCRIPTION: NON-HAZARDOUS WATER
GENERATING PROCESS: WELL PURGING / DECON WATER

COMPONENTS OF WASTE	PPM	%	COMPONENTS OF WASTE	PPM	%
1. WATER		99-100%	5.		
2. TPH		<1%	6.		
3.			7.		
4.			8. BESI: 160548		

PROPERTIES: pH 7-10 [ ] SOLID [X] LIQUID [ ] SLUDGE [ ] SLURRY [ ] OTHER

HANDLING INSTRUCTIONS: 24-HOUR EMERGENCY PHONE: 949-699-3706

THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS.

Larry Mosthart of BESI on behalf of generator 10/29/08
TYPED OR PRINTED FULL NAME & SIGNATURE DATE

TRANSPORTER

NAME: BELSHIRE (VIETO & SON)
ADDRESS: 25971 TOWNE CENTRE DRIVE (181 BYRA CHW RD)
CITY, STATE, ZIP: FOOTHILL RANCH, CA 92610 (BYRA, CA)
PHONE NO.: (949) 460-5200
TRUCK, UNIT, I.D. NO.: 213+3607

EPA I.D. NO.
SERVICE ORDER NO.
PICK UP DATE 11/03/08

CHARLIE MARTINEZ 11/03/08
TYPED OR PRINTED FULL NAME & SIGNATURE DATE

TSD FACILITY

NAME: DEMENNO KERDOON
ADDRESS: 2000 N. ALAMEDA ST.
CITY, STATE, ZIP: COMPTON, CA 90222
PHONE NO.: 310-537-7100

EPA I.D. NO.
DISPOSAL METHOD
[ ] LANDFILL [ ] OTHER

SOPHIA P. SIGNATURE 11-3-08
TYPED OR PRINTED FULL NAME & SIGNATURE DATE

GEN	OLD/NEW	L A	TONS
TRANS		S B	
C/Q		RT/CD	HWDF: NONE

DISCREPANCY

Manifest

TPST Soil Recyclers of CA
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPST:	Load #
12/02/08		12-02-08	A07	31-51	006

Generator and/or Consultant

Generator's Name and Billing Address:
TESORO ENVIRONMENTAL
RESOURCES COMPANY
3450 S. 344TH, SUITE 201
AUBURN, WA 98001

Generator's Phone #:
Person to Contact:
FAX#:
Generator's US EPA ID No.
Customer Account Number with TPST:

Consultant's Name and Billing Address:

Consultant's Phone #:
Person to Contact:
FAX#:
Customer Account Number with TPST:

Generation Site (Transport from): *(name & address)*
TESORO 67078 (FORMER)
1019 FIRST ST.
LIVERMORE, CA 94550

Site Phone #:
Person to Contact:
FAX#:
BTEX Levels
TPH Levels
AVG. Levels

Designated Facility (Transport to): *(name & address)*
TPST SOIL RECYCLERS OF CALIFORNIA
12328 HIBISCUS AVENUE
ADELANTO, CA 92301

Facility Phone #: (800) 862-8001
Person to Contact: DELLENA JEFFREY
FAX#: (760) 246-8004
Facility Permit Numbers

Transporter Name and Mailing Address:
BELSHIRE
26971 TOWNE CENTRE DRIVE
FOOTHILL RANCH, CA 92610
BESI: 160548

Transporter's Phone #: (949) 460-5200
Person to Contact: LARRY MOOTHART
FAX#: (949) 460-5210
Transporter's US EPA ID No.: CAR000183913
Transporter's DOT No.: 460647
Customer Account Number with TPST:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐	15 yds	PW 15 SOIL	15280	6340	8940
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					444

List any exception to items listed above:
Scale Ticket# 61218

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐
Larry Moothart of BESI on behalf of generator
Signature and date:
Month 12 Day 2 Year 08

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:
Signature and date:
Month 12 Day 2 Year 08

Recycling Facility

Discrepancies: Gary Gum 12 02 08

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:
D. JEFFREY/J. PROVANSAL
Signature and date: 12/2/08

Please print or type.

TRANSPORTER COPY

NO. 675340

NON-HAZARDOUS WASTE DATA FORM 25

TO BE COMPLETED BY GENERATOR

NAME: TESORO ENVIRONMENTAL RESOURCES COMPANY
ADDRESS: 3460 S. 334TH, SUITE 201, AUBURN, WA 98001

GENERATING SITE: TESORO 67076 (FORMER)
1619 FIRST ST.
LIVERMORE, CA 94550

EPA I.D. NO.
PROFILE NO.

CITY, STATE, ZIP
PHONE NO. ( )

CONTAINERS: No. 1 VOLUME 50 gal WEIGHT

TYPE: ☐ TANK TRUCK ☐ DUMP TRUCK ☐ DRUMS ☐ CARTONS ☐ OTHER

WASTE DESCRIPTION: NON-HAZARDOUS WATER
GENERATING PROCESS: WELL PURGING / DECON WATER

	COMPONENTS OF WASTE	PPM	%
1.	WATER		99-100%
2.	TPH		<1%
3.			
4.			
5.			
6.			
7.			
8.	BESI:160548		

PROPERTIES: pH 7-10 ☐ SOLID ☒ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER

HANDLING INSTRUCTIONS: 24-HOUR EMERGENCY PHONE: 949-699-3700

THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS.

Larry Moothart of BESI on behalf of generator — 11/25/08
TYPED OR PRINTED FULL NAME & SIGNATURE — DATE

TRANSPORTER

NAME: BELSHIRE — West Coast
ADDRESS: 25971 TOWNE CENTRE DRIVE — 128 / Brea Canyon Rd
CITY, STATE, ZIP: FOOTHILL RANCH, CA 92610 — Brea, CA 92821
PHONE NO.: (949) 460-5200 — 714 990-6855
TRUCK, UNIT, I.D. NO.: 253

EPA I.D. NO.
SERVICE ORDER NO.
PICK UP DATE: 11/25/08

M.L. Phillips — MP — 12.1.08
TYPED OR PRINTED FULL NAME & SIGNATURE — DATE

TSD FACILITY

NAME: DEMENNO KERDOON
ADDRESS: 2000 N. ALAMEDA ST.
CITY, STATE, ZIP: COMPTON, CA 90222
PHONE NO.: 310-537-7100

EPA I.D. NO.
DISPOSAL METHOD
☐ LANDFILL ☐ OTHER

Joe Lomas — 12 02 08
TYPED OR PRINTED FULL NAME & SIGNATURE — DATE

GEN	OLD/NEW	L A	TONS
TRANS		S B	
C/Q		RT/CD	HWDF: NONE

DISCREPANCY